

## **Longitudinal associations between psychedelic use and meditation practices in the United States and the United Kingdom**

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### **Ethics approval and consent to participate**

Study procedures were determined to be exempt from review by the Institutional Review Board at the University of Wisconsin – Madison. All procedures performed involving human participants were in accordance with the ethical standards of the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained digitally from all individual participants included in the study.

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### **Competing interests**

PSH has been in paid advisory relationships with the following organizations regarding the development of psychedelics and related compounds: Bright Minds Biosciences Ltd., Eleusis Benefit Corporation, Journey Colab Corporation, Reset Pharmaceuticals Inc., and Silo Pharma. OS was a co-founder of Eudelics AB.

### **Availability of data and materials**

The data and R script are available at <https://osf.io/95smp/files/osfstorage>

## Abstract

**Background:** Previous research has proposed that there may be potential synergies between psychedelic and meditation interventions, but there are still knowledge gaps that merit further investigation.

**Methods:** Using a longitudinal observational research design with samples representative of the US and UK adult population with regard to sex, age, and ethnicity (N=9,732), we investigated potential associations between self-reported psychedelic use and meditation practice.

**Results:** The follow-up survey was completed by 7,667 respondents (79% retention rate), with 100 respondents reporting psychedelic use during the two-month study period (1.3% of follow-up respondents). In covariate-adjusted regression models, psychedelic use during the study period was associated with greater increases in the number of days of mindfulness meditation practice in the past week ( $B=0.40$ ,  $p=.004$ ). Among those who reported psychedelic use during the study period, covariate-adjusted regression models revealed that the subjective experience of insight during respondents' most intense psychedelic experience in that period was also associated with greater increases in the number of days of mindfulness and loving-kindness or compassion meditation practice in the past week ( $B=0.42$ ,  $p=.021$ ;  $B=0.38$ ,  $p=.017$ ). Notably, more days of loving-kindness or compassion meditation practice in the past week at baseline was associated with less severe subjective feelings of death or dying during respondents' most intense psychedelic experience in the study period ( $B=-0.29$ ,  $p=.037$ ).

**Conclusions:**

Psychedelic use might lead to greater engagement with meditation practices such as mindfulness meditation, while meditation practices such as loving-kindness or compassion meditation might buffer against certain challenging experiences associated with psychedelic use.

**Keywords:** Meditation; mindfulness; compassion; psychedelics; psilocybin

Meditation has been studied extensively over the past decades (Goleman & Davidson, 2017). While mindfulness meditation (i.e., practices designed to cultivate non-judgmental, present-moment awareness) has become the most studied type of meditation (Davidson & Dahl, 2018), there is also an emerging body of research on loving-kindness meditation and other similar practices (e.g., compassion meditation) that involve the cultivation of positive emotions toward oneself and others (Graser & Stangier, 2018). These two groups of meditation practices target different psychological processes (Singer & Engert, 2019) and yet both seem to have positive effects on mental health (Galante, Galante, Bekkers & Gallacher, 2014; Goldberg, Riordan, Sun & Davidson, 2022), which is a commonly reported motivation for meditation practice (Jiwani, Lam, Davidson & Goldberg, 2022). Previous research suggests that the amount of practice time can have a small but significant impact on outcomes (Parsons, Crane, Parsons, Fjorback & Kuyken, 2017), but there are many psychological barriers (e.g., low perceived benefit) that can come in the way of regular meditation practice (Hunt, Hoffman, Mohr & Williams, 2020). It is therefore important to investigate adjunctive interventions to support and encourage meditation practice.

While certain non-pharmacological interventions have shown promise as a way to support meditation practice (e.g., neurofeedback; Hunkin, King & Zajac, 2021), recent research suggests that pharmacological interventions such as psychedelics may also support meditation practice. For example, in a randomized placebo-controlled trial, psilocybin administration was found to increase meditation depth among experienced meditators who participated in a mindfulness meditation retreat (Smigielski et al., 2019; see also Griffiths et al., 2018). Another study found that lifetime psychedelic use was associated with more days of mindfulness meditation practice in the past week in a representative sample of the US adult population (Simonsson et al., 2023). No association was observed between lifetime psychedelic use and number of days of loving-kindness or compassion meditation practice in the past week

(Simonsson et al., 2023; see also Simonsson & Goldberg, 2022), but it is possible that a larger sample would be needed to observe significant associations in less common practices such as loving-kindness or compassion meditation. Notably, the subjective experience of insight (i.e., psychological insight) during respondents' most insightful psychedelic experience was associated with more days of both mindfulness meditation practice and loving-kindness or compassion meditation practice in the past week (Simonsson et al., 2023). It has been hypothesized that psychedelic experiences may increase the motivation to practice meditation and ultimately lead to more engagement with meditation practice (Payne, Chambers & Liknaitzky, 2021), which would be important to test in longitudinal studies.

Other research also indicates that meditation practice might influence the acute psychedelic experience. For instance, results from a thematic analysis of responses among naturalistic users of psychedelics indicate that meditation practice may be helpful in preparation for the psychedelic experience (Azmoodeh, Thomas & Kamboj, 2022). Another study found that trying to calm the mind was the most commonly reported helpful intervention during respondents' most challenging, difficult, or distressing experience using a psychedelic (Simonsson, Hendricks, Chambers, Osika & Goldberg, 2023; see also Carbonaro et al., 2016). Such findings suggest that meditation practice (e.g., mindfulness meditation, loving-kindness or compassion meditation) before or during the acute psychedelic experience could potentially reduce the likelihood and length of psychologically difficult states.

While psychedelics have shown promise as a way to support meditation practice (and vice versa), the data to support this contention are limited. Using a longitudinal observational research design with samples representative of the US and UK adult population with regard to sex, age, and ethnicity (N=9,732), we investigated potential associations between self-reported psychedelic use and meditation practice. We hypothesized that respondents who

reported psychedelic use during the two-month study period would have a greater increase in the number of days of mindfulness meditation practice and loving-kindness or compassion meditation practice in the past week than respondents who did not report psychedelic use in the past two months. We conducted exploratory analyses to investigate whether greater psychological insight during respondents' most intense psychedelic experience in the same time period was associated with increases in the number of days of mindfulness meditation practice and loving-kindness or compassion meditation practice in the past week. We also conducted exploratory analyses to investigate whether more days of mindfulness meditation practice and loving-kindness or compassion meditation practice in the past week at baseline would be associated with less severe challenging psychedelic experiences during the study period.

## **Method**

### **Participants**

The study (hypotheses, design plan, sampling plan, variables, and analysis plan) was preregistered on the Open Science Framework (OSF) at <https://osf.io/e28c9> (see Supplemental Materials for power analysis). The exploratory analyses were not preregistered. US (N=4,867) and UK (N=4,865) residents (18 years or older) were recruited on Prolific Academic (<https://app.prolific.co>). We used Prolific Academic's representativeness function to stratify the samples across sex (Male, Female), age (18-27, 28-37, 38-47, 48-57, 58+), and ethnicity (White, Mixed, Asian, Black, Other) to reflect the demographic distribution of the US and UK adult populations. The study description in recruitment materials did not mention psychedelic use (see Supplemental Materials for recruitment materials) to avoid self-selection bias.

### **Materials and Procedure**

In August 2022, respondents were asked to complete the baseline survey (T1), which included items related to demographic characteristics, substance use, psychedelic use, and meditation practice. Approximately two months later (October 2022), respondents were invited to complete the follow-up survey, which included items related to substance use, psychedelic use, and meditation practice. This study was part of a larger survey and completion of the baseline survey (Md = 8.7 minutes) resulted in £0.9 payment and completion of the follow-up survey (Md = 6.6 minutes) resulted in £0.9 payment. Study procedures were determined to be exempt from review by the Institutional Review Board at the University of Wisconsin – Madison.

## **Measures**

### ***Demographics***

At T1, all respondents were asked to report age, gender identity, educational attainment, religious belief, and political affiliation.

### ***Substance use***

At T1, all respondents were asked to report which, if any, of the following substances they had ever used: alcohol, nicotine products (e.g., cigarettes, e-cigarettes, cigarillos, little cigars, smokeless tobacco), cannabis products (e.g., weed, THC, CBD, hemp oil), MDMA, major stimulants (e.g., cocaine, methamphetamine), illicit narcotic analgesics/opioids (e.g., morphine, heroin, oxycodone), illicit benzodiazepines and barbiturates (e.g., Valium, Alprazolam [Xanax]), inhalants (poppers, whip-its, nitrous oxide, glue), and other substances. At follow-up, all respondents were asked to report which, if any, of the same substances they had used in the past two months (i.e., in the time between T1 and T2).

### ***Psychedelic use***

At T1, all respondents were asked to report which, if any, of the following psychedelics they had ever used: ayahuasca, N, N-dimethyltryptamine (DMT), lysergic acid diethylamide (LSD), mescaline, peyote, San Pedro, and psilocybin. If respondents reported use of any psychedelic, they were asked if they had used them in the past two months. At T2, all respondents were asked to report which, if any, psychedelics they had used in the past two months (i.e., in the time between T1 and T2). If respondents reported use of any psychedelic during the two-month study period, they were asked to report the dose (low, moderate, large, very large, extreme) used during their most intense psychedelic experience in the same time period. Those respondents who reported use of any psychedelic during the study period were also asked to look back on their most intense psychedelic experience in that time and complete the Psychological Insight Questionnaire (PIQ; Davis, Barrett, So, Gukasyan, Swift & Griffiths, 2021), which was designed to capture the subjective experience of insight during the acute psychedelic experience. The responses were rated on a 0- (“No, not at all”) to 5-point (“Extremely (more than ever before in my life)”) Likert scale. Total PIQ score was calculated as the average of all items. The internal consistency was excellent ( $\alpha = 0.97$  using unimputed sample at T2). Those respondents who reported use of any psychedelic during the study period were further asked to look back on their most intense psychedelic experience in that time and complete the Challenging Experiences Questionnaire (CEQ; Barrett, Bradstreet, Leoutsakos, Johnson & Griffiths, 2016), which was designed to capture psychologically difficult states (i.e., “bad trips”) during the acute psychedelic experience (i.e., grief, fear, death, insanity, isolation, physical distress, paranoia). The responses were rated on a 0- (“None; not at all”) to 5-point (“Extreme”) Likert scale. Total CEQ score was calculated as the average of all items. The internal consistency was excellent ( $\alpha = 0.97$  using unimputed sample at T2).

### ***Mindfulness meditation***

At T1, all respondents were asked to report whether they had ever tried mindfulness meditation, including Vipassana, Zen Buddhist meditation, Mindfulness-Based Stress Reduction, and Mindfulness-Based Cognitive Therapy. If respondents reported having tried mindfulness meditation, they were asked to estimate their total lifetime number of hours of mindfulness meditation practice (1 = 0-10, 2 = 11-100, 3 = 101-500, 4 = 501-1000, 5 = 1001-5000, 6 = 5001+). Those who reported having tried mindfulness meditation were also asked to report on how many days they engaged with mindfulness meditation over the past week (0-7). If respondents reported not having tried mindfulness meditation, they were coded as 0 days.

At T2, all respondents were asked to report on how many days they engaged with mindfulness meditation over the past week (0-7). The reason for using the past-week reference for mindfulness meditation was to maximize the likelihood of capturing post-psychedelic changes in mindfulness meditation practice – it was assumed that most psychedelic use during the study would have occurred prior to T2 minus seven days for most participants.

### ***Loving-kindness or compassion meditation***

At T1, all respondents were asked to report whether they had ever tried loving-kindness or compassion meditation, including Metta, Compassion Cultivation Training, and Cognitively-Based Compassion Training. If respondents reported having tried loving-kindness or compassion meditation, they were asked to estimate their total lifetime number of hours of loving-kindness or compassion meditation practice (1 = 0-10, 2 = 11-100, 3 = 101-500, 4 = 501-1000, 5 = 1001-5000, 6 = 5001+). Those who reported having tried loving-kindness or compassion meditation were also asked to report on how many days they engaged with loving-kindness or compassion meditation over the past week (0-7). If respondents reported not having tried loving-kindness or compassion meditation, they were coded as 0 days. At T2, all respondents were asked to report on how many days they engaged with loving-kindness or compassion meditation over the past week (0-7). The reason for using the past-week reference

for loving-kindness or compassion meditation was the same as for mindfulness meditation, which is described above.

### ***Statistical Analyses***

As specified in the preregistration, we used multiple linear regression to assess whether there were significant differences in past 7 days practice of mindfulness meditation change scores between those who reported psychedelic use in the two-month study period versus those who did not, controlling for age (recoded as: 18-27, 28-37, 38-47, 48-57, 58+), gender (recoded as: male, female, other), educational attainment (Bachelor's degree or higher, no Bachelor's degree), degree of religiosity (not at all religious, a little religious, moderately religious, quite religious, very religious), political affiliation (Democratic Party or Republican Party for US respondents; Remain side or Leave side for UK respondents), past two month use of alcohol, nicotine products, cannabis products, MDMA, major stimulants, illicit narcotic analgesics/opioids, illicit benzodiazepines and barbiturates, inhalants, and other substances at T2 (all substances entered as separate covariates), and psychedelic use in the past two months at T1. Equivalent models were run focusing on loving-kindness or compassion meditation practice. The control variables were preregistered and chosen based on a previous longitudinal study on psychedelic use (Forstmann, Yudkin, Prosser, Heller & Crockett, 2020). Sensitivity analyses were conducted using zero-inflated negative binomial models.

In exploratory analyses, we conducted additional multiple linear regression models among those who reported psychedelic use during the two-month study period. First, we assessed whether greater psychological insight during respondents' most intense psychedelic experience during the study period was associated with past 7 days practice of mindfulness meditation change scores, controlling for age (recoded as: 18-27, 28-37, 38-47, 48-57, 58+), gender (recoded as: male, female, other), educational attainment (Bachelor's degree or higher,

no Bachelor's degree), degree of religiosity (not at all religious, a little religious, moderately religious, quite religious, very religious), political affiliation (Democratic Party or Republican Party for US respondents; Remain side or Leave side for UK respondents), past two month use of alcohol, nicotine products, cannabis products, MDMA, major stimulants, illicit narcotic analgesics/opioids, illicit benzodiazepines and barbiturates, inhalants, and other substances at T2 (all substances entered as separate covariates), dose used during respondents' most intense psychedelic experience during the study period, and psychedelic use in the past two months at T1. Equivalent models were run focusing on loving-kindness or compassion meditation practice. Second, we assessed whether past 7 days practice of mindfulness meditation at T1 was associated with less severe challenging psychedelic experiences during the two-month study period, controlling for age (recoded as: 18-27, 28-37, 38-47, 48-57, 58+), gender (recoded as: male, female, other), educational attainment (Bachelor's degree or higher, no Bachelor's degree), degree of religiosity (not at all religious, a little religious, moderately religious, quite religious, very religious), political affiliation (Democratic Party or Republican Party for US respondents; Remain side or Leave side for UK respondents), lifetime use of psychedelics, alcohol, nicotine products, cannabis products, MDMA, major stimulants, illicit narcotic analgesics/opioids, illicit benzodiazepines and barbiturates, inhalants, and other substances (all substances entered as separate covariates), dose used during respondents' most intense psychedelic experience during the study period, and lifetime hours of mindfulness meditation practice. Equivalent models were run focusing on loving-kindness or compassion meditation practice.

For all analyses, p-values are reported with 3 decimal places, allowing the reader to estimate any p-value corrections of the reader's choosing. There were no missing data at T1. Missing data at T2 was addressed by using Multivariate Imputation by Chained Equations (MICE; Van Buuren & Groothuis-Oudshoorn, 2011). The MICE package version 3.15.0 in R Studio

(<https://cran.r-project.org/web/packages/mice/index.html>) was used to impute the missing data twenty times using random forest imputations as method. We subsequently replaced imputed values on hierarchical variables (i.e., variables that should have missing data by design) before we analyzed the data. Model were run across imputations and pooled according to Rubin's (1976) rules using the 'pool' function in the 'mice' package.

## **Results**

7,667 respondents completed the follow-up survey (79% retention rate) and 100 respondents (1.3% of follow-up survey completers) reported psychedelic use during the two-month study period (see Supplemental Tables 1 for descriptive statistics of psychedelic-related variables).

Table 1 shows sample characteristics. As shown in the table, among those who reported psychedelic use during the study period, 36 percent had never tried mindfulness meditation before the start of the study and 66 percent had never tried loving-kindness or compassion meditation before the start of the study, which was significantly lower than those who did not report using psychedelics during the same time period (59 and 89 percent, respectively; see Supplemental Table 2 for descriptive statistics of meditation-related variables).

Table 2 displays results from the multiple regression models testing the associations between psychedelic use and meditation practice. As indicated in the table, psychedelic use during the two-month study period was associated with increases in the number of days of mindfulness (but not loving-kindness or compassion) meditation practice in the past week. Sensitivity analyses showed broadly the same results.

Table 3 displays results from the multiple regression models testing the associations between psychological insight and meditation practice. As indicated in the table, among those who reported psychedelic use during the study period, psychological insight during respondents' most intense psychedelic experience in that time was also associated with increases in the

number of days of mindfulness and loving-kindness or compassion meditation practice in the past week.

Table 4 displays results from the multiple regression models testing the associations between meditation practice at T1 and the severity of challenging psychedelic experiences during the two-month study period. As indicated in the table, among those who reported psychedelic use during the study period, more days of loving-kindness or compassion meditation practice in the past week at baseline was associated with less severe subjective feelings of death or dying during respondents' most intense psychedelic experience in the study period, though no other associations were observed between meditation practice and the severity of challenging psychedelic experiences.

### **Discussion**

This longitudinal observational study investigated potential associations between self-reported psychedelic use and meditation practice. As hypothesized, psychedelic use during the two-month study period was associated with greater increases in the number of days of mindfulness meditation practice in the past week. Contrary to our hypothesis, however, no association was observed between psychedelic use in the same time period and changes in the number of days of loving-kindness or compassion meditation practice in the past week. In exploratory analyses, psychological insight during respondents' most intense psychedelic experience during the study period was associated with greater increases in the number of days of mindfulness and loving-kindness or compassion meditation practice in the past week. Notably, more days of loving-kindness or compassion meditation practice in the past week at baseline was associated with less severe subjective feelings of death or dying during respondents' most intense psychedelic experience in the study period, though no other associations were observed between meditation practice and the severity of challenging psychedelic experiences. Taken together, these findings indicate that psychedelic use might

lead to greater engagement with meditation practices such as mindfulness meditation, while meditation practices such as loving-kindness or compassion meditation might buffer against certain challenging experiences associated with psychedelic use.

If the significant findings in this study are replicated in future studies, it would be important to understand the mechanisms underlying the relationships between psychedelic experiences and meditation practices. For example, a recent cross-sectional study found an association between lifetime psychedelic use and lower likelihood of overall perceived barriers to meditation practice (Simonsson & Goldberg, 2022). Such findings provide the basis for one potential path model: psychedelic experience → decreased perceived barriers to meditation practice → increased meditation practice (Payne et al., 2021). It is possible, for instance, that psychedelics can induce a transient, subjective experience of non-judgmental, present-moment awareness, which could provide a point of reference to orient future mindfulness meditation practice. This may reduce confusion around how to practice mindfulness meditation (i.e., perceived inadequate knowledge) and lead to increased motivation and engagement. It is similarly possible that a psychedelic-induced experience of non-judgmental, present-moment awareness might increase the perceived benefit of practices that cultivate trait mindfulness (e.g., mindfulness meditation; Payne et al., 2021). Another possibility, partially supported by findings in this study, is that the subjective experience of insight during the acute psychedelic experience might lead to greater awareness of unhelpful thinking and behavioral patterns that hinder meditation practice (i.e., perceived pragmatic barriers). Future research should explore these possibilities.

The absence of a significant association between psychedelic use during the study period and changes in the number of days of loving-kindness or compassion meditation practice in the past week corresponds with previous research (Simonsson et al., 2023). Although it is

possible that a larger sample would be needed to observe significant associations in less common practices such as loving-kindness or compassion meditation, another explanation could be that psychedelics do not reliably induce experiences that are phenomenologically similar to loving-kindness or compassion meditation, which might otherwise provide a point of reference to orient future loving-kindness or compassion meditation practice or increase the perceived benefit of practices that cultivate positive emotions toward oneself and others. If the phenomenological similarity does indeed matter, it may be worthwhile for future studies to investigate whether the number of days of loving-kindness or compassion meditation practice in the past week could be influenced by experiences with MDMA, which has been associated with positive emotions toward oneself and others (Lyubomirsky, 2022).

Notably, among those who reported psychedelic use during the two-month study period, more days of loving-kindness or compassion meditation practice in the past week at baseline was associated with less severe subjective feelings of death or dying during respondents' most intense psychedelic experience in the study period, though no other associations were observed between meditation practice and the severity of challenging psychedelic experiences. Previous research suggests that loving-kindness or compassion meditation practices may have a stronger dose-response relation with positive emotions than mindfulness meditation (Fredrickson et al., 2008). It is therefore plausible that the positive emotions cultivated through loving-kindness or compassion meditation practices might act as *internal* psychological support during challenging psychedelic experiences and thereby buffer against, for example, subjective feelings of death or dying during a psychedelic experience. This hypothesis should be tested in future research.

The findings in this study have at least two potential implications. First, previous research suggests that greater amount of mindfulness meditation practice may have small but

significant effects on outcomes (e.g., depression, anxiety, stress; Parsons et al., 2017), but it is still common for participants to discontinue treatment with mindfulness-based interventions (Lam, Kirvin-Quamme & Goldberg, 2022; Lam, Riordan, Simonsson, Davidson & Goldberg, 2023; Nam & Toneatto, 2016). The association between psychedelic use during the two-month study period and increases in the number of days of mindfulness meditation practice in the past week could therefore have implications for mindfulness-based interventions. If psychedelic use, in fact, increases persistence with mindfulness meditation practice, psychedelic administration could be leveraged to support the maintenance of such practice, especially in populations that have been shown to benefit from mindfulness-based interventions (e.g., individuals with recurrent depression; Kuyken et al., 2016). Second, because subjective feelings of death or dying during a psychedelic experience have been associated with a retrospective, self-reported decrease in wellbeing (Barrett et al., 2016), the association between more days of loving-kindness or compassion meditation practice in the past week at baseline and less severe subjective feelings of death or dying during respondents' most intense psychedelic experience in the study period suggests that these types of practices could be useful tools in preparation for the acute psychedelic experience.

## **Limitations**

Despite the promising results in this study, it is important to consider limitations when interpreting the findings. First, the recruited sample was stratified across sex, age and ethnicity to reflect the US and UK adult populations, but it might not have been representative on other variables such as income or educational attainment. Second, the covariate-adjusted regression models in this study controlled for only a subset of potential confounders. It is still possible that unmeasured confounding variables could have influenced the results (e.g., personality, mental health motivations). Third, the retention rate at follow-up was 79%. It is therefore possible that the results were influenced by attrition bias. Although we used multiple

imputation, which is robust to data missing at random (i.e., missingness conditional on observed variables), it is possible that data were missing not at random (i.e., nonignorable missingness that is not recaptured with observed values; Graham, 2009). Fourth, all variables were measured using self-report and respondents were asked to describe past meditation practice and psychedelic use retrospectively, which may have biased responses. Fifth, in the baseline survey, only those who reported having tried meditation were asked to report on how many days they engaged with meditation over the past week, whereas in the follow-up survey, all respondents were asked to report on how many days they engaged with meditation over the past week, which may have biased responses. Sixth, none of the significant results from the exploratory analyses would have survived Bonferroni-type correction for multiple comparisons. These results should therefore be interpreted with particular caution until replicated in future studies. Seventh, no conclusive causal inferences can be made due to the observational study design. Future studies should utilize randomized controlled research designs to evaluate the potential relationships between psychedelic experiences and meditation practices.

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## Tables

	Non-users (n=9,632)	Users (n=100)	<i>p</i>
<b>Age</b>			<.001
18-27	20.5%	24.0%	
28-37	22.1%	35.0%	
38-47	18.5%	24.0%	
48-57	15.7%	15.0%	
58+	23.2%	2.0%	
<b>Gender identity</b>			<.001
Male	47.6%	63.0%	
Female	50.9%	33.0%	
Other	1.5%	4.0%	
<b>Education</b>			.209
Bachelor's degree or higher	56.8%	63.0%	
Less than bachelor's degree	43.3%	37.0%	
<b>Religious belief</b>			.004
Not at all religious	55.8%	75.0%	
A little religious	19.0%	13.0%	
Quite religious	11.7%	6.0%	
Moderately religious	8.6%	4.0%	
Very religious	5.0%	2.0%	
<b>Political affiliation</b>			<.001
Democratic Party	34.7%	59.0%	
Republican Party	15.1%	17.0%	
Remain side	34.6%	21.0%	
Leave side	15.7%	3.0%	
<b>Lifetime substance use</b>			
Psychedelics	17.1%	81.0%	<.001
Alcohol	82.4%	91.0%	.025
Nicotine products	51.3%	81.0%	<.001
Cannabis products	53.1%	87.0%	<.001
MDMA	12.4%	63.0%	<.001
Major stimulants	16.7%	59.0%	<.001
Illicit narcotic analgesics or opioids	7.5%	35.0%	<.001
Illicit benzodiazepines and barbiturates	10.0%	52.0%	<.001
Inhalants	9.7%	43.0%	<.001
Other substances	3.7%	26.0%	<.001

<b>Meditation practice</b>			
No MM practice past week	79.7%	65.0%	<.001
No LKCM practice past week	93.4%	80.0%	<.001
Never practiced MM	59.4%	36.0%	<.001
Never practiced LKCM	88.6%	66.0%	<.001

Note: This table shows sample characteristics at baseline of respondents who did not report psychedelic use during the study period (i.e., non-users) and respondents who did (i.e., users). MM = Mindfulness meditation; LKCM = Loving-kindness or compassion meditation; all percentages were rounded to the nearest 0.1%; cumulative percentages may not add to 100.0. Pearson's chi-squared tests were used to examine the characteristics of users versus non-users.

	MM change scores		LKCM change scores	
	B (CI 95%)	<i>p</i>	B (CI 95%)	<i>p</i>
Psychedelic use during the study period	0.40 (0.13 – 0.68)	.004	0.12 (-0.14 – 0.39)	.367

Note: This table shows two separate multiple linear regression models using multiple imputation (imputed  $n = 9,732$ ). B = unstandardized regression coefficient; MM = Past 7 days practice of mindfulness meditation; LKCM = Past 7 days practice of loving-kindness or compassion meditation. The regression models controlled for age, gender, educational attainment, degree of religiosity, political affiliation, past two month use of alcohol, nicotine products, cannabis products, MDMA, major stimulants, illicit narcotic analgesics/opioids, illicit benzodiazepines and barbiturates, inhalants, and other substances at T2, and psychedelic use in the past two months at T1. See Supplemental Table 3 for additional statistics.

	MM change scores		LKCM change scores	
	B (CI 95%)	<i>p</i>	B (CI 95%)	<i>p</i>
PIQ total score during the study period	0.43 (0.07 – 0.80)	.021	0.38 (0.07 – 0.69)	.017

Note: This table shows two separate multiple linear regression models ( $n = 100$ ). B = unstandardized regression coefficient; MM = Past 7 days practice of mindfulness meditation; LKCM = Past 7 days practice of loving-kindness or compassion meditation; PIQ = Psychological Insight Questionnaire. The regression models controlled for age, gender, educational attainment, degree of religiosity, political affiliation, past two month use of alcohol, nicotine products, cannabis products, MDMA, major stimulants, illicit narcotic analgesics/opioids, illicit benzodiazepines and barbiturates, inhalants, and other substances at T2, dose used during respondents' most intense psychedelic experience during the study period, and psychedelic use in the past two months at T1. See Supplemental Table 4 for additional statistics.

	B (CI 95%)	<i>p</i>
CEQ Total Score		
Past-week MM practice at baseline	-0.09 (-0.26 – 0.09)	.346

Past-week LKCM practice at baseline	-0.22 (-0.50 – 0.07)	.136
CEQ Grief Score		
Past-week MM practice at baseline	-0.07 (-0.30 – 0.16)	.536
Past-week LKCM practice at baseline	-0.22 (-0.58 – 0.14)	.220
CEQ Fear Score		
Past-week MM practice at baseline	-0.08 (-0.30 – 0.13)	.442
Past-week LKCM practice at baseline	-0.25 (-0.60 – 0.10)	.152
CEQ Death Score		
Past-week MM practice at baseline	-0.12 (-0.29 – 0.05)	.163
Past-week LKCM practice at baseline	-0.29 (-0.55 – -0.02)	.037
CEQ Insanity Score		
Past-week MM practice at baseline	-0.02 (-0.21 – 0.16)	.828
Past-week LKCM practice at baseline	-0.14 (-0.44 – 0.16)	.351
CEQ Isolation score		
Past-week MM practice at baseline	-0.15 (-0.41 – 0.10)	.230
Past-week LKCM practice at baseline	-0.19 (-0.60 – 0.21)	.346
CEQ Physical Distress Score		
Past-week MM practice at baseline	-0.06 (-0.25 – 0.13)	.529
Past-week LKCM practice at baseline	-0.18 (-0.49 – 0.12)	.229
CEQ Paranoia Score		
Past-week MM practice at baseline	-0.16 (-0.36 – 0.05)	.130
Past-week LKCM practice at baseline	-0.26 (-0.59 – 0.08)	.130
<p>Note: This table shows sixteen separate multiple linear regression models (n = 100). B = unstandardized regression coefficient; CEQ = Challenging Experience Questionnaire; MM = Mindfulness meditation; LKCM = Loving-kindness or compassion meditation. The regression models controlled for age, gender, educational attainment, degree of religiosity, political affiliation, lifetime use of psychedelics, alcohol, nicotine products, cannabis products, MDMA, major stimulants, illicit narcotic analgesics/opioids, illicit benzodiazepines and barbiturates, inhalants, and other substances, and dose used during respondents' most intense psychedelic experience during the study period. The regression models with mindfulness meditation as independent variable also controlled for lifetime hours of mindfulness meditation practice. The regression models with loving-kindness or compassion meditation as independent variable also controlled for lifetime hours of loving-kindness or compassion meditation practice. See Supplemental Table 5 for additional statistics.</p>		

## Supplemental Material

### Power analysis

Using the pwr package in R, we ran the following power analysis for a t-test comparing two groups of different sizes: `library(pwr)> pwr.t2n.test(n1 = 100, n2 = 7567, power = .8)`. This indicated that the sample size had 80% power to detect differences of  $d \geq 0.28$ .

### Recruitment materials

#### Baseline

The aim of this study is to better understand factors (e.g., substance use) that predict health behavior. You will be required to complete a set of surveys assessing your health behaviors along with demographic measures. You will be asked sensitive questions (e.g., about substance use). To have your submission accepted, you must correctly answer questions designed to check if you are paying attention. Anonymized data may be made available to other researchers. Approximately two months after completing this study, you will be invited to complete a second study. Please ONLY participate in this study if you think you will be able to complete the second study.

#### Follow-Up

Thank you for completing our initial study!

In this follow-up study we are seeking to better understand factors (e.g., substance use) that predict health behavior. You are being invited because you completed our initial survey approximately 2-3 months ago. In this follow-up study, you will again be required to complete a set of surveys. You may be asked sensitive questions (e.g., about substance use). To have your submission accepted, you must also correctly answer questions designed to check if you are paying attention. Anonymized data may be made available to other researchers.

	T2		
	Mean (SD)	Skewness	Kurtosis
PIQ total score	1.89 (1.18)	-0.10	1.87
CEQ total score	1.14 (1.04)	0.75	2.38
CEQ Grief subscale score	1.30 (1.25)	0.79	2.71
CEQ Fear subscale score	1.23 (1.30)	0.87	2.68
CEQ Death subscale score	0.55 (1.05)	1.94	5.90
CEQ Insanity subscale score	0.84 (1.19)	1.22	3.16
CEQ Isolation subscale score	1.49 (1.40)	0.59	2.18
CEQ Physical distress subscale score	1.21 (1.11)	0.68	2.38
CEQ Paranoia subscale score	0.71 (1.20)	1.69	4.78

Note: This table shows descriptive statistics of PIQ and CEQ variables for the respondents who reported psychedelic use during the study period

(n=100). PIQ = Psychological Insight Questionnaire; CEQ = Challenging Experiences Questionnaire; SD = Standard Deviation.

	T1	T2	T1 to T2 change score		
	Md (SD)	Md (SD)	Mean (SD)	Skewness	Kurtosis
<b>Full sample</b>					
Days of MM practice past week	0 (1.33)	0 (1.67)	0.39 (1.39)	1.53	10.46
Days of LKCM practice past week	0 (0.82)	0 (1.43)	0.46 (1.37)	2.04	11.63
<b>Non-users</b>					
Days of MM practice past week	0 (1.32)	0 (1.66)	0.39 (1.38)	1.56	10.64
Days of LKCM practice past week	0 (0.81)	0 (1.42)	0.46 (1.37)	2.07	11.68
<b>Users</b>					
Days of MM practice past week	0 (1.82)	1 (1.93)	0.59 (1.86)	0.37	4.44
Days of LKCM practice past week	0 (1.26)	0 (1.68)	0.50 (1.60)	0.67	8.72

Note: This table shows (unimputed) descriptive statistics of past-week meditation variables. Md = Median; SD = Standard Deviation.

	MM change scores				
	Unimputed			Imputed	
	B (CI 95%)	<i>p</i>	B (CI 95%)	<i>p</i>	
Psychedelic use during the study period	0.42 (0.12 – 0.72)	.007	0.40 (0.13 – 0.68)	.002	
Psychedelics past 2 months (T1)	-0.56 (-0.86 – -0.26)	<.001	-0.41 (-0.65 – -0.17)	<.001	
Alcohol past 2 months (T2)	0.01 (-0.05 – 0.08)	.648	-0.01 (-0.06 – 0.05)	.752	
Nicotine products past 2 months (T2)	0.02 (-0.06 – 0.11)	.592	0.06 (-0.01 – 0.13)	.117	
Cannabis products past 2 months (T2)	-0.01 (-0.10 – 0.08)	.842	0.04 (-0.05 – 0.12)	.413	
MDMA past 2 months (T2)	0.21 (-0.20 – 0.61)	.314	0.21 (-0.16 – 0.59)	.268	
Major stimulants past 2 months (T2)	-0.04 (-0.31 – 0.22)	.762	-0.02 (-0.27 – 0.22)	.839	
Narcotic analgesics or opioids past 2 months (T2)	0.07 (-0.32 – 0.46)	.737	0.09 (-0.27 – 0.44)	.638	
Benzodiazepines and barbiturates past 2 months (T2)	0.18 (-0.14 – 0.50)	.272	0.22 (-0.08 – 0.51)	.149	
Inhalants past 2 months (T2)	-0.35 (-0.80 – 0.09)	.117	-0.33 (-0.73 – 0.07)	.103	
Other substances past 2 months (T2)	0.32 (0.03 – 0.61)	.029	0.35 (0.09 – 0.61)	.009	
Bachelor's degree or higher	0.01 (-0.05 – 0.07)	.789	0.02 (-0.03 – 0.07)	.463	
Age					
18-27 (reference category)	...	...	...	...	
28-37	-0.01 (-0.11 – 0.09)	.827	0.04 (-0.04 – 0.12)	.361	
38-47	0.01 (-0.10 – 0.11)	.894	0.08 (-0.01 – 0.16)	.080	
48-57	0.02 (-0.09 – 0.13)	.708	0.10 (0.02 – 0.19)	.020	
58+	-0.02 (-0.12 – 0.08)	.731	0.08 (0.00 – 0.16)	.050	
Gender					
Male (reference category)	...	...	...	...	
Female	-0.05 (-0.11 – 0.02)	.147	-0.04 (-0.09 – 0.02)	.180	
Other	-0.23 (-0.51 – 0.06)	.118	-0.17 (-0.40 – 0.06)	.144	

Degree of religiosity				
Not at all religious (reference category)	...	...	...	...
A little religious	0.08 (0.00 – 0.16)	.057	0.06 (-0.01 – 0.12)	.111
Quite religious	0.34 (0.24 – 0.44)	<.001	0.24 (0.16 – 0.33)	<.001
Moderately religious	0.70 (0.58 – 0.81)	<.001	0.55 (0.45 – 0.65)	<.001
Very religious	1.2 (1.0 – 1.3)	<.001	0.94 (0.81 – 1.1)	<.001
Political affiliation				
Democratic Party (reference category)	...	...	...	...
Republican Party	0.07 (-0.03 – 0.17)	.162	0.06 (-0.02 – 0.15)	.144
Remain side	-0.16 (-0.24 – -0.08)	<.001	-0.08 (-0.15 – -0.02)	.014
Leave side	-0.17 (-0.26 – -0.07)	<.001	-0.08 (-0.17 – 0.00)	.056
Number of observations	7,667	...	9,732	...
R <sup>2</sup>	0.063	...	...	...
Adjusted R <sup>2</sup>	0.060	...	...	...
	LKCM change scores			
	Unimputed		Imputed	
	B (CI 95%)	<i>p</i>	B (CI 95%)	<i>p</i>
Psychedelic use during the study period	0.05 (-0.24 – 0.35)	.728	0.12 (-0.14 – 0.39)	.367
Psychedelics past 2 months (T1)	-0.06 (-0.35 – 0.24)	.708	-0.10 (-0.33 – 0.12)	.378
Alcohol past 2 months (T2)	-0.03 (-0.09 – 0.03)	.330	-0.04 (-0.10 – 0.01)	.109
Nicotine products past 2 months (T2)	0.04 (-0.05 – 0.12)	.388	0.07 (0.00 – 0.14)	.055
Cannabis products past 2 months (T2)	0.06 (-0.03 – 0.15)	.212	0.09 (0.01 – 0.18)	.022
MDMA past 2 months (T2)	0.22 (-0.19 – 0.62)	.292	0.21 (-0.16 – 0.58)	.262
Major stimulants past 2 months (T2)	-0.05 (-0.31 – 0.21)	.709	-0.03 (-0.27 – 0.21)	.815
Narcotic analgesics or opioids past 2 months (T2)	0.24 (-0.15 – 0.63)	.222	0.26 (-0.10 – 0.62)	.152
Benzodiazepines and barbiturates past 2 months (T2)	0.29 (-0.03 – 0.60)	.078	0.33 (0.04 – 0.62)	.027
Inhalants past 2 months (T2)	-0.30 (-0.73 – 0.14)	.182	-0.27 (-0.67 – 0.12)	.174
Other substances past 2 months (T2)	0.14 (-0.14 – 0.43)	.321	0.19 (-0.07 – 0.45)	.145
Bachelor's degree or higher	0.02 (-0.04 – 0.08)	.522	0.03 (-0.03 – 0.08)	.348
Age				
18-27 (reference category)	...	...	...	...
28-37	0.10 (0.00 – 0.20)	.041	0.12 (0.04 – 0.20)	.002
38-47	0.00 (-0.10 – 0.10)	.996	0.06 (-0.02 – 0.14)	.126
48-57	0.08 (-0.03 – 0.18)	.148	0.14 (0.06 – 0.23)	.001
58+	0.15 (0.05 – 0.24)	.003	0.22 (0.14 – 0.30)	<.001
Gender				
Male (reference category)	...	...	...	...
Female	0.06 (0.00 – 0.13)	.038	0.05 (0.00 – 0.10)	.046
Other	-0.17 (-0.45 – 0.11)	.243	-0.11 (-0.32 – 0.09)	.284
Degree of religiosity				
Not at all religious (reference category)	...	...	...	...
A little religious	0.15 (0.07 – 0.23)	<.001	0.11 (0.04 – 0.18)	.001
Quite religious	0.39 (0.29 – 0.49)	<.001	0.28 (0.20 – 0.36)	<.001
Moderately religious	0.74 (0.63 – 0.85)	<.001	0.58 (0.48 – 0.68)	<.001

Very religious	1.0 (0.86 – 1.1)	<.001	0.81 (0.69 – 0.93)	<.001
Political affiliation				
Democratic Party (reference category)	...	...	...	...
Republican Party	-0.01 (-0.11 – 0.09)	.894	0.00 (-0.08 – 0.08)	.981
Remain side	-0.14 (-0.22 – -0.06)	<.001	-0.07 (-0.13 – -0.01)	.032
Leave side	-0.20 (-0.30 – -0.10)	<.001	-0.11 (-0.20 – -0.03)	.005
Number of observations	7,667	...	9,732	...
R <sup>2</sup>	0.058	...	...	...
Adjusted R <sup>2</sup>	0.055	...	...	...

Note: This table shows statistics for the two separate multiple linear regression models in Table 2 (MM change scores, LKCM change scores). B = unstandardized beta; MM = Past week practice of mindfulness meditation; LKCM = Past week practice of loving-kindness or compassion meditation.

	MM change scores		LKCM change scores	
	B (CI 95%)	<i>p</i>	B (CI 95%)	<i>p</i>
PIQ total score during the study period	0.43 (0.07 – 0.80)	.021	0.38 (0.07 – 0.69)	.017
Psychedelics past 2 months (T1)	-0.86 (-1.7 – 0.03)	.059	0.04 (-0.71 – 0.78)	.923
Alcohol past 2 months (T2)	0.21 (-0.73 – 1.1)	.662	-0.35 (-1.1 – 0.44)	.377
Nicotine products past 2 months (T2)	0.51 (-0.47 – 1.5)	.300	0.45 (-0.37 – 1.3)	.276
Cannabis products past 2 months (T2)	-0.32 (-1.4 – 0.81)	.576	-0.40 (-1.3 – 0.55)	.405
MDMA past 2 months (T2)	-0.56 (-1.7 – 0.56)	.320	0.06 (-0.88 – 0.99)	.907
Major stimulants past 2 months (T2)	0.43 (-1.0 – 1.9)	.563	0.30 (-0.93 – 1.5)	.629
Narcotic analgesics or opioids past 2 months (T2)	2.1 (-0.40 – 4.5)	.100	1.7 (-0.33 – 3.8)	.098
Benzodiazepines and barbiturates past 2 months (T2)	0.27 (-1.5 – 2.0)	.757	0.17 (-1.3 – 1.6)	.815
Inhalants past 2 months (T2)	-0.48 (-2.2 – 1.2)	.577	-0.73 (-2.2 – 0.70)	.311
Other substances past 2 months (T2)	0.85 (-1.4 – 3.1)	.458	0.84 (-1.1 – 2.8)	.383
Bachelor's degree or higher	0.01 (-0.86 – 0.87)	.991	0.52 (-0.21 – 1.2)	.160
Age				
18-27 (reference category)	...	...	...	...
28-37	0.10 (-1.0 – 1.3)	.859	0.30 (-0.67 – 1.3)	.538
38-47	0.67 (-0.51 – 1.8)	.265	0.55 (-0.44 – 1.5)	.270
48-57	0.84 (-0.47 – 2.2)	.205	0.59 (-0.51 – 1.7)	.291
58+	1.2 (-1.6 – 4.1)	.390	0.26 (-2.1 – 2.7)	.829
Gender				
Male (reference category)	...	...	...	...
Female	-0.50 (-1.4 – 0.43)	.285	-0.10 (-0.88 – 0.68)	.800
Other	-0.35 (-2.7 – 2.0)	.772	0.76 (-1.2 – 2.8)	.451
Degree of religiosity				
Not at all religious (reference category)	...	...	...	...
A little religious	-0.04 (-1.3 – 1.3)	.956	0.20 (-0.90 – 1.3)	.719
Quite religious	0.15 (-1.9 – 2.2)	.890	-0.58 (-2.3 – 1.2)	.507
Moderately religious	-1.7 (-4.0 – 0.60)	.145	-1.8 (-3.7 – 0.12)	.066
Very religious	2.3 (-0.76 – 5.3)	.139	1.7 (-0.88 – 4.2)	.194

Political affiliation				
Democratic Party (reference category)	...	...	...	...
Republican Party	-0.71 (-2.0 – 0.57)	.270	-0.55 (-1.6 – 0.52)	.309
Remain side	-1.0 (-2.2 – 0.09)	.072	-0.81 (-1.8 – 0.14)	.095
Leave side	-0.17 (-2.5 – 2.1)	.882	-0.68 (-2.6 – 1.3)	.487
Psychedelic dose during study period				
Low (reference category)	...	...	...	...
Moderate	0.29 (-0.72 – 1.3)	.572	0.22 (-0.62 – 1.1)	.603
Large	-0.75 (-2.2 – 0.67)	.298	-0.46 (-1.6 – 0.73)	.447
Very large	-1.4 (-4.0 – 1.3)	.312	-2.1 (-4.3 – 0.18)	.071
Extreme	-1.7 (-4.5 – 0.96)	.203	-0.93 (-3.2 – 1.3)	.416
Number of observations	100	...	100	...
R <sup>2</sup>	0.316	...	0.351	...
Adjusted R <sup>2</sup>	0.033	...	0.083	...

Note: This table shows statistics for the two separate multiple linear regression models in Table 3 (MM change scores, LKCM change scores). B = unstandardized beta; MM = Past week practice of mindfulness meditation; LKCM = Past week practice of loving-kindness or compassion meditation.

Supplemental Table 5. Additional statistics for Table 4				
Past-week MM practice at baseline	CEQ total score		CEQ Grief score	
	B (CI 95%)	<i>p</i>	B (CI 95%)	<i>p</i>
Past-week MM practice at baseline	-0.09 (-0.26 – 0.09)	.346	-0.07 (-0.30 – 0.16)	.536
Psychedelics ever (T1)	-0.16 (-1.0 – 0.72)	.718	-0.09 (-1.2 – 1.0)	.871
Alcohol ever (T1)	0.71 (-0.22 – 1.6)	.133	0.64 (-0.53 – 1.8)	.279
Nicotine products ever (T1)	0.06 (-0.74 – 0.86)	.887	-0.08 (-1.1 – 0.93)	.879
Cannabis products ever (T1)	-0.83 (-2.0 – 0.37)	.172	-0.61 (-2.1 – 0.90)	.424
MDMA ever (T1)	0.06 (-0.56 – 0.70)	.862	-0.02 (-0.83 – 0.79)	.964
Major stimulants ever (T1)	0.11 (-0.56 – 0.77)	.750	-0.04 (-0.88 – 0.80)	.926
Narcotic analgesics or opioids ever (T1)	-0.18 (-0.80 – 0.45)	.579	-0.20 (-0.99 – 0.59)	.615
Benzodiazepines and barbiturates ever (T1)	0.15 (-0.49 – 0.79)	.636	0.25 (-0.56 – 1.1)	.542
Inhalants ever (T1)	-0.12 (-0.71 – 0.47)	.684	0.19 (-0.55 – 0.93)	.612
Other substances ever (T1)	0.29 (-0.34 – 0.92)	.365	0.20 (-0.61 – 1.0)	.628
Bachelor's degree or higher	0.36 (-0.13 – 0.84)	.147	0.48 (-0.13 – 1.1)	.123
Age				
18-27 (reference category)	...	...	...	...
28-37	-0.61 (-1.3 – 0.05)	.067	-0.32 (-1.1 – 0.51)	.441
38-47	-0.95 (-1.6 – 0.29)	.005	-0.52 (-1.3 – 0.31)	.218
48-57	-0.10 (-0.90 – 0.70)	.809	0.39 (-0.61 – 1.4)	.438
58+	-0.81 (-2.5 – 0.88)	.343	-0.43 (-2.6 – 1.7)	.689
Gender				
Male (reference category)	...	...	...	...
Female	-0.02 (-0.55 – 0.51)	.946	0.24 (-0.43 – 0.91)	.477

Other	0.39 (-0.83 – 1.6)	.526	1.8 (0.27 – 3.3)	.022
Degree of religiosity				
Not at all religious (reference category)	...	...	...	...
A little religious	-0.03 (-0.78 – 0.72)	.928	0.30 (-0.64 – 1.2)	.524
Quite religious	1.0 (-0.17 – 2.2)	.092	1.1 (-0.40 – 2.6)	.148
Moderately religious	0.46 (-1.1 – 2.0)	.544	0.30 (-1.6 – 2.2)	.753
Very religious	0.52 (-1.3 – 2.4)	.576	0.43 (-1.9 – 2.8)	.714
Political affiliation				
Democratic Party (reference category)	...	...	...	...
Republican Party	0.03 (-0.77 – 0.84)	.933	-0.24 (-1.3 – 0.78)	.636
Remain side	0.00 (-0.64 – 0.64)	.994	0.07 (-0.74 – 0.88)	.873
Leave side	-0.17 (-1.2 – 1.5)	.800	-0.09 (-1.8 – 1.6)	.914
Lifetime hours of MM practice				
0 (reference category)	...	...	...	...
0 – 10	0.31 (-0.63 – 1.2)	.513	0.10 (-1.1 – 1.3)	.861
11 – 100	-0.04 (-0.67 – 0.59)	.895	-0.30 (-1.1 – 0.50)	.454
101 – 500	0.11 (-0.60 – 0.83)	.749	0.09 (-0.81 – 0.99)	.843
501 – 1000	0.23 (-0.90 – 1.3)	.690	0.29 (-1.1 – 1.7)	.680
1001 – 5000	-1.2 (-4.0 – 1.7)	.415	-1.7 (-5.3 – 1.9)	.357
5000+	0.14 (-1.7 – 2.0)	.881	0.04 (-2.3 – 2.4)	.977
Psychedelic dose during study period				
Low (reference category)	...	...	...	...
Moderate	0.06 (-0.55 – 0.66)	.856	-0.25 (-1.0 – 0.51)	.507
Large	0.40 (-0.38 – 1.2)	.309	-0.12 (-1.1 – 0.86)	.802
Very large	0.98 (-0.54 – 2.5)	.203	0.38 (-1.5 – 2.3)	.693
Extreme	0.99 (-0.54 – 2.5)	.201	1.5 (-0.42 – 3.4)	.122
Number of observations	100	...	100	...
R <sup>2</sup>	0.388	...	0.320	...
Adjusted R <sup>2</sup>	0.053	...	-0.051	...
	CEQ Fear score		CEQ Death score	
	B (CI 95%)	<i>p</i>	B (CI 95%)	<i>p</i>
Past-week MM practice at baseline	-0.08 (-0.30 – 0.13)	.442	-0.12 (-0.29 – 0.05)	.163
Psychedelics ever (T1)	-0.37 (-1.4 – 0.71)	.497	0.14 (-0.69 – 0.96)	.745
Alcohol ever (T1)	0.84 (-0.29 – 2.0)	.143	0.62 (-0.26 – 1.5)	.163
Nicotine products ever (T1)	0.24 (-0.73 – 1.2)	.626	0.07 (-0.68 – 0.82)	.852
Cannabis products ever (T1)	-0.98 (-2.4 – 0.48)	.184	-1.3 (-2.4 – -0.14)	.028
MDMA ever (T1)	0.33 (-0.45 – 1.1)	.398	0.08 (-0.52 – 0.69)	.781
Major stimulants ever (T1)	0.01 (-0.80 – 0.82)	.975	0.04 (-0.58 – 0.67)	.892
Narcotic analgesics or opioids ever (T1)	-0.17 (-0.93 – 0.59)	.659	0.05 (-0.54 – 0.64)	.876
Benzodiazepines and barbiturates ever (T1)	0.03 (-0.75 – 0.81)	.942	-0.19 (-0.79 – 0.41)	.535
Inhalants ever (T1)	-0.39 (-1.1 – 0.33)	.283	-0.21 (-0.77 – 0.34)	.440
Other substances ever (T1)	0.58 (-0.19 – 1.4)	.137	0.30 (-0.30 – 0.89)	.324
Bachelor's degree or higher	0.33 (-0.45 – 1.1)	.398	0.30 (-0.15 – 0.76)	.186
Age				

18-27 (reference category)	...	...	...	...
28-37	-0.96 (-1.8 – 0.16)	.019	-0.56 (-1.2 – 0.05)	.072
38-47	-1.6 (-2.4 – 0.81)	<.001	-0.86 (-1.5 – 0.25)	.007
48-57	-0.56 (-1.5 – 0.41)	.256	-0.07 (-0.82 – 0.68)	.847
58+	-1.2 (-3.2 – 0.88)	.258	-0.38 (-2.0 – 1.2)	.631
Gender				
Male (reference category)	...	...	...	...
Female	-0.16 (-0.80 – 0.49)	.624	0.30 (-0.20 – 0.79)	.238
Other	-0.37 (-1.8 – 1.1)	.622	0.05 (-1.1 – 1.2)	.936
Degree of religiosity				
Not at all religious (reference category)	...	...	...	...
A little religious	-0.37 (-1.3 – 0.54)	.415	-0.09 (-0.79 – 0.62)	.805
Quite religious	0.88 (-0.55 – 2.3)	.224	1.0 (-0.07 – 2.1)	.067
Moderately religious	0.02 (-1.8 – 1.9)	.985	0.33 (-1.1 – 1.8)	.644
Very religious	0.11 (-2.2 – 2.4)	.922	1.3 (-0.49 – 3.0)	.155
Political affiliation				
Democratic Party (reference category)	...	...	...	...
Republican Party	0.11 (-0.87 – 1.1)	.819	0.22 (-0.53 – 0.98)	.556
Remain side	-0.20 (-0.98 – 0.58)	.615	0.12 (-0.48 – 0.73)	.682
Leave side	-0.08 (-1.7 – 1.6)	.920	0.78 (-0.49 – 2.1)	.223
Lifetime hours of MM practice				
0 (reference category)	...	...	...	...
0 – 10	0.28 (-0.85 – 1.4)	.621	0.23 (-0.65 – 1.1)	.602
11 – 100	-0.03 (-0.80 – 0.74)	.942	0.14 (-0.45 – 0.73)	.635
101 – 500	0.01 (-0.86 – 0.87)	.986	0.49 (-0.18 – 1.2)	.150
501 – 1000	0.09 (-1.3 – 1.5)	.898	0.08 (-0.97 – 1.1)	.879
1001 – 5000	-1.1 (-4.6 – 2.3)	.522	-0.60 (-3.3 – 2.1)	.657
5000+	-0.12 (-2.4 – 2.2)	.916	0.22 (-1.6 – 2.0)	.809
Psychedelic dose during study period				
Low (reference category)	...	...	...	...
Moderate	0.20 (-0.53 – 0.94)	.582	0.23 (-0.34 – 0.80)	.422
Large	0.62 (-0.32 – 1.6)	.195	0.53 (-0.20 – 1.3)	.154
Very large	1.9 (0.03 – 3.7)	.046	1.9 (0.49 – 3.4)	.009
Extreme	0.56 (-1.3 – 2.4)	.553	0.82 (-0.62 – 2.3)	.260
Number of observations	100	...	100	...
R <sup>2</sup>	0.422	...	0.468	...
Adjusted R <sup>2</sup>	0.105	...	0.177	...
	CEQ Insanity score		CEQ Isolation score	
	B (CI 95%)	<i>p</i>	B (CI 95%)	<i>p</i>
Past-week MM practice at baseline	-0.02 (-0.21 – 0.16)	.828	-0.15 (-0.41 – 0.10)	.230
Psychedelics ever (T1)	-0.05 (-0.96 – 0.86)	.914	-0.17 (-1.4 – 1.1)	.783
Alcohol ever (T1)	1.1 (0.09 – 2.0)	.032	-0.85 (-0.47 – 2.2)	.202
Nicotine products ever (T1)	0.26 (-0.57 – 1.1)	.534	0.07 (-1.1 – 1.2)	.899
Cannabis products ever (T1)	-1.7 (-2.9 – 0.47)	.008	-0.45 (-2.1 – 1.2)	.602

MDMA ever (T1)	-0.15 (-0.82 – 0.51)	.653	0.05 (-0.86 – 0.96)	.916
Major stimulants ever (T1)	0.55 (-0.14 – 1.2)	.118	0.21 (-0.73 – 1.2)	.650
Narcotic analgesics or opioids ever (T1)	-0.26 (-0.91 – 0.39)	.423	-0.12 (-1.0 – 0.76)	.780
Benzodiazepines and barbiturates ever (T1)	0.08 (-0.58 – 0.74)	.810	0.03 (-0.88 – 0.94)	.946
Inhalants ever (T1)	-0.19 (-0.80 – 0.41)	.526	-0.03 (-0.86 – 0.80)	.942
Other substances ever (T1)	0.14 (-0.51 – 0.80)	.662	0.15 (-0.75 – 1.0)	.744
Bachelor's degree or higher	0.19 (-0.32 – 0.69)	.462	0.76 (0.08 – 1.4)	.030
Age				
18-27 (reference category)	...	...	...	...
28-37	-0.35 (-1.0 – 0.33)	.312	-0.66 (-1.6 – 0.27)	.161
38-47	1.1 (-1.8 – 0.47)	.001	-0.61 (-1.5 – 0.32)	.194
48-57	-0.47 (-1.3 – 0.36)	.262	0.57 (-0.56 – 1.7)	.317
58+	-1.2 (-2.9 – 0.60)	.194	-0.70 (-3.1 – 1.7)	.560
Gender				
Male (reference category)	...	...	...	...
Female	-0.18 (-0.73 – 0.37)	.506	-0.20 (-0.95 – 0.55)	.597
Other	-0.26 (-1.5 – 0.99)	.675	1.3 (-0.41 – 3.0)	.134
Degree of religiosity				
Not at all religious (reference category)	...	...	...	...
A little religious	-0.50 (-1.3 – 0.27)	.201	0.21 (-0.85 – 1.3)	.693
Quite religious	1.2 (0.01 – 2.5)	.048	0.29 (-1.4 – 2.0)	.728
Moderately religious	-0.53 (-1.0 – 2.1)	.504	-0.14 (-2.3 – 2.0)	.895
Very religious	-0.21 (-2.1 – 1.7)	.828	0.90 (-1.7 – 3.5)	.497
Political affiliation				
Democratic Party (reference category)	...	...	...	...
Republican Party	0.02 (-0.81 – 0.86)	.953	0.29 (-0.85 – 1.4)	.607
Remain side	0.07 (-0.59 – 0.74)	.829	0.17 (-0.74 – 1.1)	.709
Leave side	0.49 (-0.92 – 1.9)	.491	0.20 (-1.7 – 2.1)	.835
Lifetime hours of MM practice				
0 (reference category)	...	...	...	...
0 – 10	0.30 (-0.67 – 1.3)	.543	0.44 (-0.88 – 1.8)	.509
11 – 100	0.10 (-0.55 – 0.76)	.750	-0.26 (-1.1 – 0.64)	.569
101 – 500	-0.09 (-0.83 – 0.64)	.798	0.06 (-0.95 – 1.1)	.911
501 – 1000	0.25 (-0.91 – 1.4)	.664	-0.08 (-1.7 – 1.5)	.915
1001 – 5000	-1.2 (-4.2 – 1.7)	.419	-0.02 (-4.0 – 4.0)	.993
5000+	-0.27 (-2.2 – 1.7)	.787	0.31 (-2.4 – 3.0)	.818
Psychedelic dose during study period				
Low (reference category)	...	...	...	...
Moderate	0.33 (-0.29 – 0.96)	.292	0.22 (-0.62 – 1.1)	.603
Large	0.77 (-0.03 – 1.6)	.059	-0.46 (-1.6 – 0.73)	.447
Very large	1.5 (-0.08 – 3.1)	.063	-2.1 (-4.3 – 0.18)	.071
Extreme	0.65 (-0.93 – 2.2)	.412	-0.93 (-3.2 – 1.3)	.416
Number of observations	100	...	100	...
R <sup>2</sup>	0.500	...	0.320	...

Adjusted R <sup>2</sup>	0.226	...	-0.052	...
	CEQ Physical Distress score		CEQ Paranoia score	
	B (CI 95%)	<i>p</i>	B (CI 95%)	<i>p</i>
Past-week MM practice at baseline	-0.06 (-0.25 – 0.13)	.529	-0.16 (-0.36 – 0.05)	.130
Psychedelics ever (T1)	-0.10 (-1.0 – 0.84)	.838	-0.46 (-1.5 – 0.54)	.365
Alcohol ever (T1)	0.54 (-0.44 – 1.5)	.275	0.35 (-0.70 – 1.4)	.509
Nicotine products ever (T1)	-0.14 (-0.98 – 0.71)	.744	0.16 (-0.75 – 1.1)	.731
Cannabis products ever (T1)	-0.61 (-1.9 – 0.66)	.342	-0.48 (-1.8 – 0.88)	.483
MDMA ever (T1)	-0.04 (-0.72 – 0.64)	.906	0.13 (-0.60 – 0.86)	.729
Major stimulants ever (T1)	0.03 (-0.67 – 0.74)	.928	0.21 (-0.55 – 0.96)	.583
Narcotic analgesics or opioids ever (T1)	-0.20 (-0.86 – 0.47)	.558	-0.23 (-0.94 – 0.48)	.520
Benzodiazepines and barbiturates ever (T1)	0.48 (-0.20 – 1.2)	.160	-0.01 (-0.74 – 0.71)	.967
Inhalants ever (T1)	-0.15 (-0.77 – 0.48)	.642	-0.25 (-0.92 – 0.42)	.459
Other substances ever (T1)	0.35 (-0.32 – 1.0)	.302	0.12 (-0.60 – 0.84)	.745
Bachelor's degree or higher	0.11 (-0.40 – 0.62)	.667	0.43 (-0.12 – 0.98)	.120
Age				
18-27 (reference category)	...	...	...	...
28-37	-0.72 (-1.4 – 0.03)	.042	-0.69 (-1.4 – 0.05)	.066
38-47	-0.91 (-1.6 – -0.21)	.011	-1.0 (-1.8 – -0.27)	.008
48-57	-0.28 (-1.1 – 0.57)	.511	-0.43 (-1.3 – 0.48)	.346
58+	-0.87 (-2.7 – 0.92)	.333	-0.94 (-2.9 – 0.98)	.331
Gender				
Male (reference category)	...	...	...	...
Female	-0.10 (-0.66 – 0.46)	.719	-0.02 (-0.63 – 0.58)	.936
Other	-0.22 (-1.5 – 1.1)	.727	-0.51 (-1.9 – 0.86)	.458
Degree of religiosity				
Not at all religious (reference category)	...	...	...	...
A little religious	0.06 (-0.73 – 0.85)	.878	-0.04 (-0.89 – 0.81)	.918
Quite religious	1.3 (0.09 – 2.6)	.036	0.99 (-0.35 – 2.3)	.144
Moderately religious	1.1 (-0.45 – 2.8)	.157	1.3 (-0.44 – 3.0)	.143
Very religious	0.78 (-1.2 – 2.7)	.435	1.0 (-1.1 – 3.1)	.345
Political affiliation				
Democratic Party (reference category)	...	...	...	...
Republican Party	-0.04 (-0.90 – 0.81)	.917	0.30 (-0.62 – 1.2)	.516
Remain side	-0.11 (-0.79 – 0.57)	.749	0.12 (-0.61 – 0.84)	.753
Leave side	-0.24 (-1.2 – 1.7)	.738	0.32 (-1.2 – 1.9)	.680
Lifetime hours of MM practice				
0 (reference category)	...	...	...	...
0 – 10	0.42 (-0.57 – 1.4)	.396	0.60 (-0.46 – 1.7)	.266
11 – 100	0.12 (-0.54 – 0.79)	.712	0.20 (-0.51 – 0.92)	.577
101 – 500	0.20 (-0.56 – 0.95)	.605	0.29 (-0.52 – 1.1)	.482
501 – 1000	0.45 (-0.74 – 1.6)	.452	0.37 (-0.90 – 1.6)	.562
1001 – 5000	-1.1 (-4.1 – 1.9)	.458	-2.2 (-5.4 – 1.1)	.187
5000+	0.51 (-1.5 – 2.5)	.610	0.49 (-1.7 – 2.6)	.652
Psychedelic dose during study period				

Low (reference category)	...	...	...	...
Moderate	0.12 (-0.52 – 0.76)	.714	0.09 (-0.59 – 0.78)	.784
Large	0.61 (-0.21 – 1.4)	.140	0.47 (-0.41 – 1.3)	.294
Very large	1.1 (-0.52 – 2.7)	.181	0.64 (-1.1 – 2.4)	.464
Extreme	0.91 (-0.71 – 2.5)	.267	0.97 (-0.76 – 2.7)	.266
Number of observations	100	...	100	...
R <sup>2</sup>	0.393	...	0.406	...
Adjusted R <sup>2</sup>	0.060	...	0.082	...
<b>Past-week LKCM practice at baseline</b>				
	CEQ total score		CEQ Grief score	
	B (CI 95%)	<i>p</i>	B (CI 95%)	<i>p</i>
Past-week LKCM practice at baseline	-0.22 (-0.50 – 0.07)	.136	-0.22 (-0.58 – 0.14)	.220
Psychedelics ever (T1)	-0.37 (-1.3 – 0.53)	.416	-0.37 (-1.5 – 0.76)	.512
Alcohol ever (T1)	0.58 (-0.33 – 1.5)	.209	0.51 (-0.63 – 1.7)	.375
Nicotine products ever (T1)	0.08 (-0.68 – 0.84)	.826	-0.08 (-1.0 – 0.88)	.867
Cannabis products ever (T1)	-0.78 (-1.9 – 0.36)	.177	-0.53 (-2.0 – 0.90)	.461
MDMA ever (T1)	0.14 (-0.51 – 0.78)	.675	0.10 (-0.72 – 0.91)	.812
Major stimulants ever (T1)	0.18 (-0.45 – 0.82)	.565	0.09 (-0.71 – 0.89)	.824
Narcotic analgesics or opioids ever (T1)	-0.26 (-0.86 – 0.34)	.394	-0.31 (-1.1 – 0.45)	.414
Benzodiazepines and barbiturates ever (T1)	0.23 (-0.40 – 0.86)	.465	0.34 (-0.45 – 1.1)	.391
Inhalants ever (T1)	-0.20 (-0.78 – 0.38)	.492	0.10 (-0.64 – 0.83)	.795
Other substances ever (T1)	0.35 (-0.27 – 0.97)	.266	0.25 (-0.54 – 1.0)	.535
Bachelor's degree or higher	0.31 (-0.16 – 0.79)	.195	0.43 (-0.17 – 1.0)	.158
Age				
18-27 (reference category)	...	...	...	...
28-37	-0.54 (-1.2 – 0.08)	.085	-0.13 (-0.91 – 0.64)	.733
38-47	-0.87 (-1.5 – -0.22)	.010	-0.40 (-1.2 – 0.42)	.339
48-57	0.14 (-0.60 – 0.89)	.702	0.65 (-0.29 – 1.6)	.172
58+	-0.71 (-2.4 – 0.95)	.397	-0.20 (-2.3 – 1.9)	.851
Gender				
Male (reference category)	...	...	...	...
Female	-0.02 (-0.53 – 0.50)	.946	0.23 (-0.42 – 0.89)	.479
Other	0.20 (-0.98 – 1.4)	.740	1.5 (-0.01 – 3.0)	.051
Degree of religiosity				
Not at all religious (reference category)	...	...	...	...
A little religious	-0.13 (-0.85 – 0.59)	.723	0.25 (-0.65 – 1.2)	.578
Quite religious	1.1 (-0.05 – 2.2)	.062	1.1 (-0.34 – 2.4)	.138
Moderately religious	0.55 (-0.84 – 1.9)	.434	0.31 (-1.4 – 2.1)	.728
Very religious	0.86 (-1.0 – 2.7)	.365	0.79 (-1.6 – 3.2)	.508
Political affiliation				
Democratic Party (reference category)	...	...	...	...
Republican Party	0.13 (-0.63 – 0.90)	.728	-0.04 (-1.0 – 0.94)	.934
Remain side	-0.03 (-0.65 – 0.59)	.923	-0.01 (-0.79 – 0.78)	.989

Leave side	0.07 (-1.3 – 1.4)	.913	-0.31 (-2.0 – 1.4)	.725
Lifetime hours of LKCM practice				
0 (reference category)	...	...	...	...
0 – 10	0.27 (-0.83 – 1.4)	.630	0.17 (-1.2 – 1.6)	.807
11 – 100	0.04 (-0.61 – 0.68)	.911	-0.04 (-0.85 – 0.77)	.912
101 – 500	0.72 (-0.48 – 1.9)	.232	1.1 (-0.39 – 2.6)	.142
501 – 1000	0.18 (-1.2 – 1.6)	.804	0.32 (-1.5 – 2.1)	.722
1001 – 5000	...	...	...	...
5000+	...	...	...	...
Psychedelic dose during study period				
Low (reference category)	...	...	...	...
Moderate	0.17 (-0.44 – 0.77)	.587	-0.09 (-0.86 – 0.67)	.812
Large	0.56 (-0.24 – 1.4)	.167	0.05 (-0.96 – 1.1)	.927
Very large	1.1 (-0.29 – 2.5)	.119	0.60 (-1.1 – 2.4)	.495
Extreme	0.54 (-1.1 – 2.1)	.500	1.0 (-1.0 – 3.0)	.325
Number of observations	100	...	100	...
R <sup>2</sup>	0.398	...	0.329	...
Adjusted R <sup>2</sup>	0.097	...	-0.007	...
	CEQ Fear score		CEQ Death score	
	B (CI 95%)	<i>p</i>	B (CI 95%)	<i>p</i>
Past-week LKCM practice at baseline	-0.25 (-0.60 – 0.10)	.152	-0.29 (-0.55 – 0.02)	.037
Psychedelics ever (T1)	-0.55 (-1.6 – 0.54)	.319	-0.06 (-0.90 – 0.78)	.882
Alcohol ever (T1)	0.72 (-0.39 – 1.8)	.199	0.45 (-0.41 – 1.3)	.300
Nicotine products ever (T1)	0.25 (-0.67 – 1.2)	.585	0.11 (-0.60 – 0.82)	.760
Cannabis products ever (T1)	-0.91 (-2.3 – 0.46)	.189	-1.1 (-2.2 – -0.06)	.039
MDMA ever (T1)	0.41 (-0.37 – 1.2)	.302	0.06 (-0.54 – 0.67)	.839
Major stimulants ever (T1)	0.05 (-0.72 – 0.83)	.888	0.17 (-0.43 – 0.77)	.570
Narcotic analgesics or opioids ever (T1)	-0.27 (-1.0 – 0.46)	.465	-0.02 (-0.59 – 0.55)	.940
Benzodiazepines and barbiturates ever (T1)	0.12 (-0.64 – 0.88)	.754	-0.11 (-0.69 – 0.48)	.722
Inhalants ever (T1)	-0.46 (-1.2 – 0.25)	.200	-0.36 (-0.91 – 0.18)	.191
Other substances ever (T1)	0.67 (-0.08 – 1.4)	.081	0.31 (-0.28 – 0.89)	.297
Bachelor's degree or higher	0.24 (-0.34 – 0.82)	.406	0.25 (-0.19 – 0.70)	.263
Age				
18-27 (reference category)	...	...	...	...
28-37	-0.92 (-1.7 – 0.17)	.017	-0.54 (-1.1 – 0.04)	.067
38-47	-1.5 (-2.3 – -0.75)	<.001	-0.78 (-1.4 – 0.17)	.013
48-57	-0.34 (-1.2 – 0.57)	.463	0.11 (-0.60 – 0.81)	.765
58+	-1.1 (-3.1 – 0.96)	.300	-0.38 (-1.9 – 1.2)	.628
Gender				
Male (reference category)	...	...	...	...
Female	-0.16 (-0.79 – 0.47)	.617	0.26 (-0.22 – 0.74)	.288
Other	-0.58 (-2.0 – 0.86)	.427	0.00 (-1.1 – 1.1)	.999
Degree of religiosity				
Not at all religious (reference category)	...	...	...	...

A little religious	-0.43 (-1.3 – 0.44)	.327	-0.16 (-0.83 – 0.51)	.635
Quite religious	1.0 (-0.35 – 2.3)	.143	1.1 (0.08 – 2.1)	.036
Moderately religious	0.20 (-1.5 – 1.9)	.814	0.67 (-0.64 – 2.0)	.311
Very religious	0.49 (-1.8 – 2.8)	.670	1.6 (-0.14 – 3.4)	.070
Political affiliation				
Democratic Party (reference category)	...	...	...	...
Republican Party	0.17 (-0.77 – 1.1)	.725	0.28 (-0.45 – 1.0)	.448
Remain side	-0.23 (-0.99 – 0.52)	.538	0.18 (-0.40 – 0.76)	.543
Leave side	-0.12 (-1.8 – 1.5)	.889	0.88 (-0.40 – 2.2)	.175
Lifetime hours of LKCM practice				
0 (reference category)	...	...	...	...
0 – 10	0.22 (-1.1 – 1.5)	.743	0.21 (-0.82 – 1.2)	.682
11 – 100	-0.12 (-0.91 – 0.66)	.751	0.24 (-0.37 – 0.84)	.435
101 – 500	0.47 (-0.99 – 1.9)	.520	0.55 (-0.58 – 1.7)	.335
501 – 1000	0.25 (-1.5 – 2.0)	.772	0.19 (-1.1 – 1.5)	.780
1001 – 5000	...	...	...	...
5000+	...	...	...	...
Psychedelic dose during study period				
Low (reference category)	...	...	...	...
Moderate	0.26 (-0.47 – 1.0)	.477	0.30 (-0.27 – 0.87)	.301
Large	0.72 (-0.25 – 1.7)	.146	0.67 (-0.08 – 1.4)	.081
Very large	1.9 (0.18 – 3.6)	.030	1.7 (-0.44 – 3.0)	.009
Extreme	0.15 (-1.8 – 2.1)	.881	0.34 (-1.2 – 1.8)	.655
Number of observations	100	...	100	...
R <sup>2</sup>	0.431	...	0.478	...
Adjusted R <sup>2</sup>	0.147	...	0.216	...
	CEQ Insanity score		CEQ Isolation score	
	B (CI 95%)	<i>p</i>	B (CI 95%)	<i>p</i>
Past-week LKCM practice at baseline	-0.14 (-0.44 – 0.16)	.351	-0.19 (-0.60 – 0.21)	.346
Psychedelics ever (T1)	-0.05 (-0.99 – 0.89)	.914	-0.64 (-1.9 – 0.63)	.317
Alcohol ever (T1)	1.0 (-0.05 – 2.0)	.039	0.63 (-0.66 – 1.9)	.332
Nicotine products ever (T1)	0.23 (-0.57 – 1.0)	.564	0.28 (-0.80 – 1.4)	.601
Cannabis products ever (T1)	-1.8 (-3.0 – 0.64)	.003	-0.24 (-1.9 – 1.4)	.771
MDMA ever (T1)	-0.05 (-0.73 – 0.62)	.876	-0.01 (-0.93 – 0.91)	.988
Major stimulants ever (T1)	0.51 (-0.16 – 1.2)	.135	0.41 (-0.50 – 1.3)	.375
Narcotic analgesics or opioids ever (T1)	-0.35 (-0.98 – 0.29)	.278	-0.20 (-1.1 – 0.66)	.650
Benzodiazepines and barbiturates ever (T1)	0.14 (-0.52 – 0.80)	.669	0.14 (-0.76 – 1.0)	.764
Inhalants ever (T1)	-0.20 (-0.81 – 0.41)	.515	-0.13 (-0.96 – 0.70)	.759
Other substances ever (T1)	0.23 (-0.43 – 0.88)	.488	0.11 (-0.78 – 1.0)	.805
Bachelor's degree or higher	0.16 (-0.34 – 0.66)	.525	0.76 (0.08 – 1.4)	.030
Age				
18-27 (reference category)	...	...	...	...
28-37	-0.34 (-0.99 – 0.30)	.294	-0.59 (-1.5 – 0.29)	.187
38-47	-1.1 (-1.8 – -0.44)	.002	-0.55 (-1.5 – 0.38)	.243

48-57	-0.33 (-1.1 – 0.46)	.408	0.82 (-0.25 – 1.9)	.131
58+	-1.1 (-2.9 – 0.61)	.200	-0.76 (-3.1 – 1.6)	.525
Gender				
Male (reference category)	...	...	...	...
Female	-0.17 (-0.71 – 0.37)	.534	-0.22 (-0.95 – 0.52)	.559
Other	-0.36 (-1.6 – 0.88)	.565	1.0 (-0.67 – 2.7)	.236
Degree of religiosity				
Not at all religious (reference category)	...	...	...	...
A little religious	-0.60 (-1.4 – 0.15)	.117	0.09 (-0.93 – 1.1)	.855
Quite religious	1.3 (0.13 – 2.4)	.030	0.55 (-1.1 – 2.1)	.486
Moderately religious	0.50 (-0.96 – 2.0)	.500	0.20 (-1.8 – 2.2)	.842
Very religious	0.01 (-2.0 – 2.0)	.993	1.2 (-1.5 – 3.9)	.367
Political affiliation				
Democratic Party (reference category)	...	...	...	...
Republican Party	0.06 (-0.75 – 0.87)	.883	0.29 (-0.81 – 1.4)	.604
Remain side	0.02 (-0.63 – 0.67)	.951	0.20 (-0.69 – 1.1)	.657
Leave side	0.47 (-0.97 – 1.9)	.517	-0.03 (-2.0 – 1.9)	.976
Lifetime hours of LKCM practice				
0 (reference category)	...	...	...	...
0 – 10	0.17 (-0.96 – 1.3)	.762	0.11 (-1.5 – 1.7)	.891
11 – 100	0.01 (-0.66 – 0.69)	.975	0.29 (-0.63 – 1.2)	.530
101 – 500	0.43 (-0.84 – 1.7)	.502	0.80 (-0.91 – 2.5)	.352
501 – 1000	0.36 (-1.1 – 1.8)	.627	-0.62 (-2.6 – 1.4)	.542
1001 – 5000	...	...	...	...
5000+	...	...	...	...
Psychedelic dose during study period				
Low (reference category)	...	...	...	...
Moderate	0.36 (-0.28 – 0.99)	.270	0.06 (-0.80 – 0.93)	.882
Large	0.86 (0.02 – 1.7)	.045	0.47 (-0.67 – 1.6)	.417
Very large	1.7 (0.29 – 3.2)	.020	-0.51 (-2.5 – 1.5)	.606
Extreme	0.49 (-1.2 – 2.2)	.560	0.62 (-1.7 – 2.9)	.589
Number of observations	100	...	100	...
R <sup>2</sup>	0.493	...	0.319	...
Adjusted R <sup>2</sup>	0.240	...	-0.022	...
	CEQ Physical Distress score		CEQ Paranoia score	
	B (CI 95%)	<i>p</i>	B (CI 95%)	<i>p</i>
Past-week LKCM practice at baseline	-0.18 (-0.49 – 0.12)	.229	-0.26 (-0.59 – 0.08)	.130
Psychedelics ever (T1)	-0.23 (-1.2 – 0.71)	.622	-0.58 (-1.6 – 0.46)	.268
Alcohol ever (T1)	0.42 (-0.54 – 1.4)	.382	0.21 (-0.85 – 1.3)	.695
Nicotine products ever (T1)	-0.18 (-0.98 – 0.63)	.660	0.26 (-0.63 – 1.1)	.560
Cannabis products ever (T1)	-0.57 (-1.8 – 0.63)	.347	-0.55 (-1.9 – 0.77)	.405
MDMA ever (T1)	0.10 (-0.58 – 0.78)	.767	0.23 (-0.52 – 0.98)	.543
Major stimulants ever (T1)	0.07 (-0.61 – 0.74)	.845	0.28 (-0.46 – 1.0)	.454
Narcotic analgesics or opioids ever (T1)	-0.24 (-0.88 – 0.40)	.460	-0.33 (-1.0 – 0.38)	.359

Benzodiazepines and barbiturates ever (T1)	0.54 (-0.12 – 1.2)	.110	0.02 (-0.71 – 0.75)	.964
Inhalants ever (T1)	-0.24 (-0.86 – 0.37)	.431	-0.29 (-0.97 – 0.38)	.390
Other substances ever (T1)	0.47 (-0.19 – 1.1)	.160	0.14 (-0.59 – 0.86)	.705
Bachelor's degree or higher	0.06 (-0.45 – 0.56)	.821	0.39 (-0.17 – 0.95)	.167
Age				
18-27 (reference category)	...	...	...	...
28-37	-0.68 (-1.3 – -0.03)	.042	-0.68 (-1.4 – 0.04)	.062
38-47	-0.80 (-1.5 – -0.11)	.024	-0.96 (-1.7 – -0.21)	.014
48-57	0.00 (-0.80 – 0.79)	.992	-0.08 (-0.96 – 0.79)	.847
58+	-0.72 (-2.5 – 1.0)	.419	-0.98 (-2.9 – 0.96)	.316
Gender				
Male (reference category)	...	...	...	...
Female	-0.05 (-0.60 – 0.50)	.857	-0.09 (-0.69 – 0.51)	.772
Other	-0.34 (-1.6 – 0.91)	.590	-0.58 (-2.0 – 0.79)	.401
Degree of religiosity				
Not at all religious (reference category)	...	...	...	...
A little religious	-0.06 (-0.82 – 0.70)	.871	-0.27 (-1.1 – 0.57)	.521
Quite religious	1.2 (0.06 – 2.4)	.039	1.1 (-0.21 – 2.4)	.100
Moderately religious	1.2 (-0.27 – 2.7)	.109	1.0 (-0.62 – 2.6)	.224
Very religious	1.2 (-0.83 – 3.1)	.250	1.2 (-0.99 – 3.4)	.279
Political affiliation				
Democratic Party (reference category)	...	...	...	...
Republican Party	0.12 (-0.69 – 0.94)	.767	0.35 (-0.55 – 1.2)	.445
Remain side	-0.13 (-0.79 – 0.53)	.692	0.03 (-0.69 – 0.76)	.933
Leave side	0.13 (-1.3 – 1.6)	.856	0.31 (-1.3 – 1.9)	.696
Lifetime hours of LKCM practice				
0 (reference category)	...	...	...	...
0 – 10	0.47 (-0.69 – 1.6)	.418	0.58 (-0.70 – 1.9)	.369
11 – 100	-0.10 (-0.77 – 0.58)	.780	0.45 (-0.30 – 1.2)	.234
101 – 500	0.71 (-0.56 – 2.0)	.267	0.68 (-0.72 – 2.1)	.338
501 – 1000	0.20 (-1.3 – 1.7)	.785	0.39 (-1.3 – 2.0)	.638
1001 – 5000	...	...	...	...
5000+	...	...	...	...
Psychedelic dose during study period				
Low (reference category)	...	...	...	...
Moderate	0.25 (-0.39 – 0.89)	.442	0.22 (-0.48 – 0.93)	.533
Large	0.80 (-0.05 – 1.6)	.064	0.68 (-0.25 – 1.6)	.147
Very large	1.4 (-0.09 – 2.8)	.066	0.76 (-0.86 – 2.4)	.351
Extreme	0.50 (-1.2 – 2.2)	.557	0.42 (-1.4 – 2.3)	.654
Number of observations	100	...	100	...
R <sup>2</sup>	0.402	...	0.381	...
Adjusted R <sup>2</sup>	0.103	...	0.073	...