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Use of Benefit Enhancement Strategies Among 5-Methoxy-N,N-dimethyltryptamine (5-MeO-DMT) Users: Associations with Mystical, Challenging, and Enduring Effects

Rafael L. Lancelotta, MS[a,b], **Alan K. Davis, PhD**[c,d]

[a]School of Counseling, Leadership, Advocacy, and Design, University of Wyoming, 1000 E. University Ave. Dept. 3374 Laramie, WY 82071 USA

[b]Innate Path Psychotherapy Clinic, 1445 Holland St, Lakewood, CO 80215 USA

[c]College of Social Work, The Ohio State University, 1947 N. College Rd, Columbus, OH 43210 USA

[d]Behavioral Pharmacology Research Unit, Department of Psychiatry, Johns Hopkins School of Medicine, 5510 Nathan Shock Drive, Baltimore, MD 21224 USA

Abstract

5-Methoxy-*N,N*-Dimethyltryptamine (5-MeO-DMT) is a potent, fast-acting psychedelic. Anecdotal reports from 5-MeO-DMT users suggest that they employ a variety of benefit enhancement (BE) strategies aimed to increase positive effects and decrease any potential challenging effects of the substance, but no empirical study has investigated this claim. We examined the prevalence of BE strategy use using secondary data from a survey of 5-MeO-DMT users (n=515; M_{age}=35.4, SD=11.7; Male=79%; White/Caucasian=86%). Results indicated that BE strategy use was common in this sample. As a secondary aim, we assessed whether the use of BE strategies was associated with acute subjective (i.e., mystical-type, challenging) and persisting effects of 5-MeO-DMT among a subset of respondents who reported using 5-MeO-DMT once in their lifetime (n=116). Results showed that use of several BE strategies were associated with significantly more intense mystical-type effects and enduring beliefs about the personal meaning and spiritual significance of their experience, and some BE strategies were associated with less intense or challenging experiences. Data suggests that BE strategies are commonly used, and that use of BE strategies may be associated with increases in positive mystical-type and enduring effects. The causal influence of BE strategies on acute/persisting effects of 5-MeO-DMT should be examined in longitudinal research.

Keywords

5-MeO-DMT; tryptamine; benefit enhancement; mystical-type experience

Corresponding author: Alan K. Davis, Ph.D., College of Social Work, The Ohio State University, 1947 N. College Rd, Columbus, OH 43210 USA Tele: 704-219-1733; davis.5996@osu.edu.

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Conflict of Interest: None

INTRODUCTION

Psychedelic tryptamines are a diverse group of psychedelic substances that alter perception (awareness of surrounding objects and environmental conditions), thoughts, and feelings (Araújo et al. 2015). Tryptamines are found in plants and mushrooms, can be synthetically produced, and are found in some animals (Weil & Davis 1994) and in small quantities in human tissues (Shen et al. 2010). Naturally occurring tryptamines include substances such as *O*-phosphoryl-4-hydroxy-*N,N*-dimethyltryptamine (psilocybin, found in psilocybe species of mushrooms), *N,N*-dimethyltryptamine (DMT, spice, jaguar, businessman's trip), and 5-methoxy-*N,N*-dimethyltryptamine (5-MeO-DMT, toad, 5meo, 5, quintessence, q) (Araújo et al. 2015). Research into the potential benefits of tryptamine use, both in clinical and naturalistic settings (Barsuglia et al. 2018; Davis et al. 2018; Johnson & Griffiths 2017; Thomas et al. 2017; Johnson et al. 2008) has found that use of classic psychedelics across the lifespan is associated with reduced odds of past month psychological distress, past year suicidal thinking, past year suicidal planning, and past year suicide attempt, whereas lifetime use of other illicit drugs such as pain relievers, tranquilizers, sedatives, and inhalants was largely associated with an increased likelihood of these negative outcomes (Hendricks 2015). Additionally, studies have found a wide range of positive outcomes associated with administration of tryptamines (i.e., psilocybin and 5-MeO-DMT), including decreases in depression and anxiety (Davis et al. 2019; Griffiths et al. 2016), and decreases in substance use (Garcia-Romeu et al. 2019; Garcia-Romeu et al. 2015).

Despite these reported benefits, tryptamine use has also been associated with physical, cognitive, and emotional risks (Leonard et al. 2018). For example, in 2016, there were 338 exposures reported to Poison Control Centers associated with psilocybin-containing mushrooms (NPDS 2016). Although this is in stark contrast to the large number of reported exposures from analgesics (184,255), sedative/hypnotics/antipsychotics (55,314), and antidepressants (51,509) (NPDS 2016), the possible negative effects of tryptamine exposure included challenging experiences such as agitation and tachycardia, with infrequent reports of hyperthermia, seizures, coma, increased serum creatinine, and life-threatening experiences such as cardiac arrest, and possible death (Leonard et al. 2018; Skelerov 2005).

Most reports of the benefits and negative effects of tryptamines have involved psilocybin (Araújo et al. 2015), with fewer reports published on other tryptamines (Davis et al. 2018; Winstock et al. 2014). Of recent interest is the emerging popularity of 5-MeO-DMT as a psychedelic substance sought out for its quick onset and reportedly intense an reliably produced mystical-type experience (Sexton et al. 2019; Psychedelics Today 2017). This drug is a naturally occurring psychoactive indolealkylamine that has been shown to interact with several serotonin (5-HT) receptor subtypes, with modest selectivity as an agonist at the 5-HT_{1A} receptor versus the 5-HT_{2A} subtype, which is more commonly associated with psychedelic effects (Shen et al., 2010).

Regarding the historical use of 5-MeO-DMT, there is evidence of spiritual and recreational use via snuffs derived from *Virola theiodora* resin or *Anadenanthera peregrina* seeds (McKenna et al., 1984; Trout, 2015; Schultes, 1984; Agurell et al., 1969; Torres and Repke,

2006). However, although some research has proposed that toad venom containing 5-MeO-DMT may have been used by indigenous cultures (Weil and Davis, 1994), anecdotal evidence does not support this claim (Viceland, 2017). The recent discovery of 5-MeO-DMT in *Incilius alvarius* toad venom secretions has led to a popularization of its recreational and spiritual use (Weil and Davis, 1994; Uthaug et al., 2019; Davis et al., 2018), but seems to be of more recent origin.

The prevalence of 5-MeO-DMT use in the general population appears to be low (only 1.6% of the .12% reporting use of novel psychoactive substances; Sexton et al. 2019). However, 5-MeO-DMT has a steep dose-response curve, rapid onset of effects, and short duration of action (Shulgin 2002), which could increase risks among those who choose to consume this substance. For example, in a recent survey study of people who have used 5-MeO-DMT at least once in their lifetime, 37% of respondents reported challenging psychological and somatic effects during their first 5-MeO-DMT experience, including feeling: their heart beat, fear, their body shake/tremble, anxiety, as if they were dead or dying, shaky inside, like crying, that something horrible would happen, pressure on their chest or abdomen, panic, and having the profound experience of their own death (Davis et al. 2018). Importantly, although these challenging experiences were reported, the overall intensity was rated as "very slight" on a scale from "No/Not at all" to "Extreme" (Davis et al. 2018). Nevertheless, to avoid or reduce such challenging experiences, it could be important to implement protective cognitive and behavioral strategies (i.e., harm reduction strategies; Arterberry et al. 2014; Marlatt et al. 2011) in order to reduce potentially challenging effects associated with this substance (Arterberry et al. 2014; Marlatt 2011).

The harm reduction model represents a compassionate and pragmatic approach to reduce potential harms associated with substance use (Marlatt et al. 2011). Although we could find no specific study on the topic of harm reduction among tryptamine users, we explored the broader literature of harm reduction to better understand the types of strategies one might employ to protect from substance-related harm. For example, various strategies have been developed in response to high-risk alcohol, 3,4-methylenedioxymethamphetamine (MDMA), and cannabis use (Martens et al. 2005). Among college students who consume alcohol, such behaviors include alternating alcoholic and nonalcoholic drinks, quitting drinking at a predetermined time, drinking water while drinking alcohol, avoiding drinking games, avoiding trying to "keep up" or out-drink others, using a designated driver, and making sure that you go home with a friend (Arterberry et al. 2014; Martens et al. 2005). Similar strategies have been used among people who use MDMA or cannabis (Davis & Rosenberg 2017; Davis et al. 2014). For example, MDMA harm reduction strategies could include buying MDMA from a trusted source, avoiding frequent MDMA use, and using MDMA only with friends (Davis & Rosenberg 2017). Examples of cannabis harm reduction strategies include using a vaporizer instead of smoking, using with people you trust to take care of you if you're too high, and avoiding driving (Davis et al. 2014).

Because we could find no study specifically assessing the use of harm reduction strategies among people who use tryptamines or specifically 5-MeO-DMT, we sought to examine this question using secondary data from a recent large epidemiological survey (Davis et al. 2018). We decided to use the term "benefit enhancement" instead of "harm reduction" due to

the fact that most of our primary variables of interest are positive acute and enduring effects of tryptamines. Thus, any changes seen in the associations between these strategies and the acute and enduring effects would be interpreted as benefit enhancing. The primary study aim was to examine the prevalence of using 14 BE strategies among a large sample of people who use 5-MeO-DMT. Because the survey asked about BE strategies in general across all exposures to 5-MeO-DMT (i.e., not session specific) there was no way to examine the association between BE strategy use and acute and enduring experiences among those who reported using more than one time in their lifetime. Therefore, as a secondary aim we used a subset of respondents who reported using 5-MeO-DMT only once in their lifetime to examine whether use of specific BE strategies was associated with the acute positive mystical-type effects, acute challenging effects, enduring beliefs about the personal meaning or spiritual significance of their acute 5-MeO-DMT experience, and whether use of BE strategies was associated with well-being/life satisfaction attributed to that one 5-MeO-DMT experience.

METHOD

Procedure

The present study is a secondary data analysis from a larger epidemiological study evaluating the patterns of use, motivations for consumption, benefits/consequences, and acute subjective effects of 5-MeO-DMT among an international sample (see Davis et al. 2018). During the spring and summer of 2017 (April through August), potential respondents clicked an electronic advertisement which led them to a secure survey site (hosted by surveygizmo.com). Once at the site each person was presented with information regarding the purpose of the study, the estimated amount of time required to complete the survey (approximately 20 minutes), the anonymity of completing the survey and that we would donate $2 per person (up to $250) to the Multidisciplinary Association for Psychedelic Studies (MAPS) as a way to “pay it forward” for their participation in the study (MAPS was not otherwise involved in the study). Eligibility criteria included being at least 18 years old, able to understand and read English, and lifetime use of 5-MeO-DMT on at least one occasion. No identifying information was collected, and all procedures were approved by the Bowling Green State University’s institutional review board.

Measures

5-MeO-DMT Survey—The survey included a description of the various types of 5-MeO-DMT that one might have tried (i.e., chemical/synthetic, toad venom, plant extract), followed by a series of questions about the type of 5-MeO-DMT respondents had the most experience with, frequency of use, and reasons for using 5-MeO-DMT. The full survey is available from the corresponding author.

Benefit Enhancement Strategies—We included 14 items that were developed by this team to assess whether a respondent had engaged in BE strategy use (yes/no) in order to protect themselves from possible harms that might occur during their 5-MeO-DMT experience. The majority of the strategies were selected based on techniques used in psychedelic therapy/research settings, anecdotal reports found on online forums, social

media groups, and articles from people who use 5-MeO-DMT (Global Drug Survey, 2014; Hartogsohn, 2017; Bancopuma, 2017; The Conclave, 2018; Facebook, 2019). Other strategies were derived from strategies reported by neoshamanic practitioners who use psychedelics in ceremonial settings (Beyer, 2013; Liana, 2017). Strategies comprised a variety of behaviors that one might employ prior to, during, or after taking 5-MeO-DMT, and focused on psychological, environmental, and physiological dimensions that may affect a psychedelic experience. These included, for example, “I focus on my intentions (e.g., what you want from the session) right before using 5-MeO-DMT,” and “I utilize ceremonial or shamanic techniques.” All 14 BR items are listed in Table 1. We also included an open-ended item labeled “other” in order to encourage respondent to report whether they used any other strategies that were not listed on the questionnaire.

Acute Mystical-type Experiences—We included the 30-item Mystical Experiences Questionnaire (MEQ) to examine the acute mystical-type effects that could occur after taking a classic hallucinogen (Maclean et al. 2012). Respondents were oriented to think back on the first time they consumed 5-MeO-DMT and then to rate the intensity with which they experienced each effect on a 6-point scale from 0 = “None; not at all” to 5 = “Extreme.” For this study we used a total MEQ mean score. Internal consistency of the total scale was excellent (Cronbach’s alpha = .97).

Acute Challenging Experiences—We included the 26-item Challenging Experiences Questionnaire (CEQ) to examine the acute challenging psychological or physical experiences that could occur after taking a classic hallucinogen (Barrett et al. 2016). Respondents were oriented to think back on the first time the consumed 5-MeO-DMT and then to rate the intensity with which they experienced each effect on a 6-point scale from 0 = “None; not at all” to 5 = “Extreme.” For this study we used the total CEQ mean score. Internal consistency of the total scale was excellent (Cronbach’s alpha = .94).

Enduring Effects—We included three items from the Persisting Effects Questionnaire (Griffiths et al. 2006; 2011; 2016) to examine respondents’ beliefs about the degree to which their first experience with 5-MeO-DMT was (1) personally meaningful (from 0 = “No more than routine, everyday experiences” to 7 = “The single most meaningful experience of my life”), and (2) spiritually significant (from 0 = “Not at all” to 5 = “The single most spiritually significant experience of my life”). Lastly, we assessed (3) the extent to which each respondent believed their 5-MeO-DMT experience had contributed to changes in personal well-being or life satisfaction (from −3 = “Decreased very much” to 3 = “Increased very much”).

Demographic questionnaire—We included items that asked respondent to report their age, gender, ethnicity, sexual orientation, level of education, country/region of residence, employment status, relationship status, and employment status (Davis et al. 2018).

Data Analyses—For all respondents (n = 116), we conducted frequency counts and descriptive analyses of BE strategies, basic demographic characteristics, 5-MeO-DMT use, and acute subjective mystical-type and challenging effects and beliefs about persisting effects. Next, among a subset of respondents who reported using 5-MeO-DMT only once in

their lifetime (n = 116), we used a series of *t*-test analyses to examine differences in the intensity of acute subjective mystical-type and challenging effects and beliefs about enduring effects between those who did, and those who did not, use each BE strategy. Due to limitations associated with significance tests as standalone statistical procedures (Amrhein, Korner-Nievergelt, & Roth, 2017) and limitations associated with using a corrected alpha in exploratory studies (e.g. Rubin 2017; Perneger 1998), a standard alpha of .05 was used to determine the statistical significance and we calculated effect sizes (Cohen's *d* and Phi) for each test as a measure of meaningful effects. We conducted all analyses using SPSS v.24 (IBM Corp 2016).

RESULTS

Respondent Characteristics

Respondents were primarily Caucasian (86%), male (79%), and heterosexual (82%). The average age was 35.4 years (SD = 11.7). In addition to using 5-MeO-DMT, respondents reported consuming a variety of other substances in the three months prior to the survey, most of whom reporting using marijuana/cannabis (78%), alcohol (77%), and tobacco (56%).

The Use of Benefit Enhancement Strategies

Most respondents reported using a variety of BE strategies when they consumed 5-MeO-DMT. For the entire sample (data not shown), more than one-half and sometimes three-quarters or more of the sample reported using the following strategies: "I prepare a comfortable place for the session" (85%), "I prepare a safe space for the session" (82%), "I make sure that there won't be distractions" (76%), "I use 5-MeO-DMT that has been obtained from a trusted source" (74%), "I focus on my intentions (e.g., what you want from the session) right before using 5-MeO-DMT" (67%), and "I use with friends or people that I am familiar with" (51%). Strategies used by one-third to one-half of the sample included the following strategies: "I abstain from alcohol and other intoxicating substances prior to the session" (50%), "I prepare music for the session" (49%), "I have a friend that I can talk to after the session in order to help understand (integrate) what happened" (45%), "I meditate prior to the session" (43%), "I utilize ceremonial or shamanic techniques" (38%), and "I use with a guide to help in case of challenging experiences" (35%). Several strategies were used by less than one-third of the sample, including "I take time after the session to write about what happened during the session" (32%) or "I abstain from sex in the days leading up to the session" (14%).

Benefit Enhancement Strategies Provided by Respondents

We included an open-ended question for respondents to report other BE strategies they had used prior to, during, or after their 5-MeO-DMT sessions. We received a total of 79 responses to this item. We began by creating themes to categorize responses. In addition to miscellaneous responses and those that did not apply to the question we asked (n=18), or those that were providing a duplicate response to strategies that we listed in the questionnaire (n=8), the following themes emerged from the analysis: 15 responses reflecting Meditative/Mindfulness Practice (e.g., "mindful breathing" and "I surrender fully

to it"), 6 responses reflecting Spiritual Rituals/Practices (e.g., "smudge sage, prayer" and "I pray"), 25 responses reflecting Environmental/Bodily Preparations (e.g. "stretching and fasting" and "hide mirrors so I don't look at myself"), 12 responses reflecting Pharmacological/Medical Preparations (e.g. "I had a medical checkup" and "I combine the experience with cannabis"), and 10 responses reflecting Social Preparations/Support (e.g. "Ensure that there is someone understanding and aware of the session that is available nearby who hasn't used and has a clear head, in case of emergencies or in case something else goes wrong. Nominated person should get full pre and de-brief as well.").

Relation of Benefit Enhancement Strategy Use and Mystical-type and Challenging Experiences

Of the 14 BE strategies, 4 had a positive association with the intensity of mystical-type experiences as determined by the MEQ30 (Table 1). Compared to those who did not use each specific BE strategy, the intensity of mystical-type effects were rated as more intense among those who meditated prior to session (d = 0.77), used ceremonial/shamanic techniques (d = 0.78), focused on intentions (d = 0.60), and used with a guide (d = 0.45). Additionally, one BE strategy had a positive association with ratings of the overall challenging experiences in the 5-MeO-DMT session (Table 1). Compared to those who did not use the strategy, the intensity of challenging effect were rated as less intense among those who prepared music for the session (d = 0.49).

Relation of Benefit Enhancement Strategy Use and Enduring Effects

Of 14 BE strategies, 3 were associated with higher ratings of the personal meaning attributed to the 5-MeO-DMT session (Table 2) including: utilizing ceremonial/shamanic techniques (d = 0.64), abstaining from alcohol and other substances (d=0.57), and meditating prior to the session (d = 0.51). Table 2 also reveals that 4 of the 14 BE strategies were associated with higher ratings of the spiritual significance of the 5-MeO-DMT session, including: utilizing ceremonial/shamanic techniques (d = 0.63), using with a guide (d = 0.53), meditating prior to session (d = 0.54), and writing after the session (d = 0.41). One BE strategy was associated with lower ratings of personal meaning and spiritual significance of the 5-MeO-DMT session. Respondents who used with friends had lower ratings of personal meaning (d = 0.45) and spiritual significance (d = 0.58) compared to those who did not use this BE strategy. Lastly, 3 of the 14 BE strategies were associated with higher ratings of the change in sense of well-being and life satisfaction following the 5-MeO-DMT session, including: meditating prior to session (d = 1.00), utilizing ceremonial or shamanic techniques (d = 0.66), and using with a guide (d = 0.53).

DISCUSSION

Studyresults showed that 5-MeO-DMT users reported employing a variety of BE strategies. For example, over one-half of our sample prepared a comfortable place for the session, prepared a safe space for the session, made sure that there wouldn't be distractions, used 5-MeO-DMT that has been obtained from a trusted source, focused on their intentions right before using 5-MeO-DMT, and used with friends or familiar people. Moreover, among 116 people who had only used one time, we found that use of BE strategies was associated with

more intense acute positive mystical-type effects of the drug, less intense acute challenging effects of the drug, and that the use of BE strategies were associated with higher ratings of the enduring personal meaning and spiritual significance of the 5-MeO-DMT experience.

Consistent with prior studies among people who use alcohol, cannabis, and MDMA (Davis & Rosenberg 2017; Davis et al. 2014; Martens et al. 2014; Martens et al. 2005), we found similarities between BE strategy use among 5-MeO-DMT users and users of these other drugs. For example, obtaining the drug from a trusted source, using with friends, having a friend to talk to for integration (i.e., to help make sense of the psychedelic experience or to better understand any challenges that arose during the experience), and abstaining from other substances during a use episode are consistent with strategies used by MDMA/ecstasy users (Davis & Rosenberg 2017). Similarly, preparing a safe/comfortable space for the session, avoiding distractions, and obtaining from a trusted source are consistent with studies examining the use of protective behavioral strategies among cannabis users (Pedersen et al. 2017). These similarities are perhaps not surprising given the common potential harms associated with using drugs of unknown purity, drugs that are consumed socially/in groups, or via similar routes of administration. This also could be accounted for by the fact that most psychedelic substance users report using a variety of different drugs (Davis et al. 2018; Davis & Rosenberg 2016), which could reflect that some BE strategies are used because polysubstance users broadly apply the same strategies across any substance they consume (e.g., obtaining from a trusted source, using with friends, limiting within session polysubstance use). Nevertheless, there are some strategies that seem particularly important for psychedelic use (e.g., preparing music for the session, using with a guide, meditating prior to the session, and setting aside time for integrating the experience after it is over), which is consistent with the description of the importance of employing these practices when administering psychedelics in laboratory settings (e.g., Johnson et al. 2008).

A key marker of the utility of employing BE strategies was also discovered in this sample of 5-MeO-DMT users. For example, consistent with research showing that the use of certain strategies in conjunction with the use of psychedelics reduces the likelihood of adverse events (Johnson et al. 2008), we found that individuals who prepared music for the session reported less intense challenging experiences. We also found that having an intention, utilizing ceremonial techniques, using with a guide, and meditating prior to the session was associated with reporting more intense positive mystical-type effects of the drug. That use of these strategies is associated with less intense challenging experiences and more intense mystical-type experiences suggests that the context (i.e., set and setting) in which one is administered 5-MeO-DMT is an important factor associated with the acute experience of the drug. It is possible that implementing these strategies directly effects the acute effects of 5-MeO-DMT, but such claims require a direct comparison between different contexts of use.

Findings should be considered within the context of several limitations. As this was a cross-sectional study, we cannot make any interpretations of causality with regard to impact of BE strategies on the acute effects of 5-MeO-DMT, and the retrospective reporting is subject to recall bias and subjective interpretations of experience. Additionally, the measurement of BE strategies incorporated a “yes/no” response option which made it impossible to know the frequency with which these strategies were used over time among those who used 5-MeO-

DMT more than once. Another limitation is that we did not measure the dose of 5-MeO-DMT consumed by respondents which made it impossible to determine the likely relation between dose and acute effects. This sample was also recruited using Internet advertisements, which make it subject to selection bias. The sample was comprised mostly of white, heterosexual men, which may reflect either a limitation in recruitment method or that the population of people who use 5-MeO-DMT is similarly comprised. Future studies should attempt to recruit more diverse samples, such as individuals who are non-English-speaking, gender diverse, race diverse, and use more rigorous controlled designs to better understand the use of BE strategies and 5-MeO-DMT experiences.

These limitations notwithstanding, these results support the need for further research into the use of BE strategies among people who consume 5-MeO-DMT. For example, causal effects between the use of BE strategies and the acute effects of the drug could be examined using a longitudinal study design. Additionally, these findings could be used by researchers who conduct laboratory studies with 5-MeO-DMT. For example, because some of these strategies are associated with more intense positive effects and less intense challenging effects, it could be important to create procedures that employ these BE strategies as part of a human laboratory study. Researchers should pay particular attention to the context in which they administer 5-MeO-DMT. Although 5-MeO-DMT has shown to have a safe profile of use in a variety of contexts, with low risks compared to potential benefits (Davis et al. 2018), these data are likely skewed by the fact that most are polysubstance users, and most have used a variety of other psychedelic drugs in the past. People without such histories, and possibly less exposure to the knowledge about use of BE strategies in regards to psychedelics, should be particularly careful. Harm reduction workers, peer support volunteers at music and art festivals, and others in a position to provide important prevention information could also use data from this study to help those who seek out 5-MeO-DMT experiences. Not only could such information be useful to help prepare for, navigate, and integrate, a 5-MeO-DMT experience, but they could help disperse such information among the community of psychedelic users and possibly help create a dialogue around the importance of such strategies among those who facilitate access to 5-MeO-DMT.

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Table 1.

Frequency of benefit enhancement strategy use, and mean differences in acute mystical and challenging effects as function of whether respondents employed each benefit enhancement strategy among the subset of respondents who used 5-MeO-DMT only once in their lifetime (n=116).

	Frequency of Use		MEQ Total Score				CEQ Total Score			
Strategy	**Number Used**	**% of Sample**	**Used**	**Didn't Use**	**t-score**	***d***	**Used**	**Didn't Use**	**t-score**	***d***
Focus on Intentions	79	68.1	4.0(1.1)	3.3(1.3)	2.97**	0.60	0.9(0.9)	1.1(1.0)	−0.95	0.19
Utilize Ceremonial or Shamanic Techniques	49	42.2	4.2(0.9)	3.4(1.3)	4.13***	0.78	0.8(0.9)	1.1(1.0)	−1.21	0.23
Prepare a safe space	88	75.9	3.8(1.1)	3.6(1.3)	0.90	0.20	0.9(0.9)	1.1(1.0)	−0.57	0.13
Prepare music for session	47	40.5	3.7(1.3)	3.8(1.1)	−0.68	0.13	0.7(0.7)	1.1(1.0)	−2.46*	0.49
Prepare a comfortable place	92	79.3	3.7(1.2)	3.8(1.2)	−0.27	0.06	0.9(0.9)	1.3(1.1)	−1.86	0.43
No distractions	78	67.2	3.8(1.2)	3.8(1.1)	−0.02	0.00	1.0(1.0)	0.9(0.9)	0.75	0.15
Use with a guide	64	55.2	4.0(0.9)	3.5(1.4)	2.40*	0.45	0.9(0.8)	1.1(1.1)	−1.10	0.21
Use with friends	59	50.9	3.6(1.3)	4.0(1.0)	−1.98	0.37	0.9(0.9)	1.1(1.0)	−1.02	0.19
Obtain from trusted source	92	79.3	3.8(1.2)	3.7(1.1)	0.26	0.06	0.9(0.9)	1.1(1.1)	−0.57	0.13
Meditate prior to session	55	47.4	4.2(0.9)	3.4(1.2)	4.11***	0.77	1.0(1.0)	1.0(0.9)	0.03	0.01
Abstain from sex prior to session	19	16.4	4.1(1.3)	3.7(1.1)	1.44	0.36	1.1(1.0)	0.9(0.9)	0.77	0.20
Abstain from alcohol and other substances	74	63.8	3.9(1.2)	3.6(1.1)	1.31	0.26	1.1(1.0)	0.8(0.8)	1.79	0.35
Have a friend I can talk to for integration	63	54.3	3.8(1.1)	3.7(1.2)	0.12	0.02	0.9(0.8)	1.1(1.1)	−1.24	0.23
Write after session	41	35.3	4.0(1.1)	3.6(1.2)	1.60	0.31	1.0(0.8)	1.0(1.0)	0.26	0.05

* $p<.05$;

** $p<.01$;

*** $p<.001$

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Table 2.

Mean differences in enduring effects of 5-MeO-DMT use as function of whether respondents employed each benefit enhancement strategy among the subset of respondents who used 5-MeO-DMT only once in their lifetime (n=116).

	Personally Meaningful				Spiritually Significant				Change in sense of well-being			
Strategy	**Used**	**Didn't Use**	**t-score**	***d***	**Used**	**Didn't Use**	**t-score**	***d***	**Used**	**Didn't Use**	**t-score**	***d***
Focus on Intentions	5.3(1.5)	4.8(1.9)	1.60	0.32	3.6(1.2)	3.1(1.6)	1.86	0.37	2.1(1.1)	1.6(1.3)	2.10	0.39
Utilize Ceremonial or Shamanic Techniques	5.7(1.0)	4.8(1.9)	3.36**	0.64	3.9(1.0)	3.2(1.5)	3.34**	0.63	2.4(0.9)	1.7(1.3)	3.46**	0.66
Prepare a safe space	5.2(1.6)	5.0(1.8)	0.73	0.16	3.6(1.3)	3.3(1.6)	1.00	0.22	2.0(1.2)	1.7(1.3)	1.23	0.27
Prepare music for session	4.9(1.8)	5.3(1.5)	−1.35	0.27	3.3(1.4)	3.6(1.4)	−1.15	0.23	1.9(1.2)	2.0(1.2)	−0.79	0.16
Prepare a comfortable place	5.2(1.6)	5.2(1.8)	−0.15	0.04	3.5(1.4)	3.6(1.4)	−0.44	0.10	2.0(1.2)	2.0(1.3)	−0.01	0.00
No distractions	5.2(1.6)	5.0(1.8)	0.75	0.15	3.5(1.4)	3.5(1.2)	−0.29	0.06	2.0(1.2)	1.8(1.2)	0.89	0.18
Use with a guide	5.3(1.4)	5.0(1.9)	0.97	0.18	3.8(1.0)	3.1(1.6)	2.79**	0.53	2.2(1.0)	1.6(1.3)	2.79**	0.53
Use with friends	4.8(1.7)	5.5(1.5)	−2.39**	0.45	3.1(1.5)	3.9(1.1)	3.11**	0.58	1.9(1.2)	2.1(1.2)	−0.85	0.16
Obtain from trusted source	5.1(1.6)	5.5(1.6)	−1.27	0.29	3.4(1.3)	3.7(1.4)	−0.95	0.22	1.9(1.2)	2.0(1.2)	−0.39	0.09
Meditate prior to session	5.6(1.4)	4.8(1.8)	2.71**	0.51	3.8(1.1)	3.2(1.5)	2.85**	0.54	2.5(0.8)	1.5(1.3)	5.34***	1.00
Abstain from sex prior to session	5.5(1.5)	5.1(1.7)	1.05	0.27	3.8(1.5)	3.4(1.3)	1.29	0.33	2.4(1.0)	1.9(1.2)	1.87	0.47
Abstain from alcohol and other substances	5.5(1.5)	4.6(1.8)	2.90**	0.57	3.6(1.4)	3.2(1.2)	1.56	0.30	2.1(1.2)	1.8(1.2)	1.16	0.23
Have a friend I can talk to for integration	5.2(1.5)	5.2(1.8)	0.08	0.02	3.5(1.2)	3.4(1.5)	0.43	0.08	2.1(1.1)	1.8(1.3)	1.51	0.28
Write after session	5.5(1.5)	5.0(1.7)	1.70	0.33	3.8(1.2)	3.3(1.4)	2.11*	0.41	2.2(1.1)	1.8(1.2)	1.93	0.38

* $p<.05$;

** $p<.01$;

*** $p<.001$