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Attitudes and Beliefs about the Therapeutic Use of Psychedelic Drugs among Psychologists in the United States

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ABSTRACT

Psychotherapists are a vital component of mental health treatment and their perceptions of psychedelic-assisted therapy are critical for future implementation. This cross-sectional quasi-experimental electronic survey study explored the attitudes about psychedelics used in treatment among 366 clinical psychologists in the United States. Participants expressed cautiously favorable attitudes toward therapeutic psychedelic experiences but indicated concern about possible psychiatric and neurocognitive risks. Most participants indicated that they lack an understanding of the full range of effects of psychedelics, would need to seek out additional consultation, and endorsed positive beliefs in the potential of psychedelic treatment and the need for further research. Overall, this research identified the need to increase education and training about psychedelics for psychologists in order to help increase knowledge and reduce stigma about psychedelic therapies.

Introduction

Psychedelics, such as psilocybin (magic mushrooms), Lysergic acid diethylamide (LSD), and ayahuasca, have a long history of stigma in the United States (US). However, the past two decades have demonstrated a societal shift in the acceptability of the use of psychedelics in part due to their apparent ability to alter consciousness and impact people in personally meaningful, therapeutic, and sometimes spiritual ways (Johansen and Krebs 2015). Indeed, recent research studies, media portrayals, and an overall cultural curiosity of exploring spirituality and consciousness have changed the conversation about psychedelics from a dangerous illicit recreational substance to a potential medicine that occasions spiritual or therapeutic effects (Polito and Stevenson 2019; Studerus et al. 2011). Nevertheless, there remains significant stigma associated with psychedelics due to the war on drugs, media bias and perpetuation of myths, and general misperception by the public. As psychedelic-assisted therapy emerges as a legal medical option, this stigma may interfere with its dissemination and acceptance by mental health care providers. Stigma is also likely to negatively affect the treatment of clients who use psychedelics outside of clinical contexts.

The largest body of research on use of psychedelics in the context of psychotherapy is on psilocybin, and clinical trials of psilocybin therapy have provided evidence for its effectiveness in addressing cancer-related anxiety and depression, treatment-resistant depression, major depressive disorder, and substance misuse (Agin-Liebes et al. 2020; Bogenschutz et al. 2015, 2018; Davis et al. 2020; Griffiths et al. 2016; Johnson and Griffiths 2017; Luoma, Chwyl, Davis, Bathje, & Lancelotta, 2020; Swift et al. 2017). Psilocybin therapy appears to produce benefits in mental health functioning in part because it allows for increased self-awareness, psychological flexibility, and deeply meaningful experiences that are often described as “mystical” or “spiritual” (Aday et al. 2020; Davis et al. 2020; Griffiths et al. 2006). In addition to acute improvements in mental health functioning, the long-term effects of psilocybin have reportedly included an increase in well-being and optimism, and a continued decrease in mental health symptoms, for up to 4.5 years after psilocybin treatment (Agin-Liebes et al. 2020; Carhart-Harris et al. 2017; Johnson and Griffiths 2017; Johnson, Richards, and Griffiths 2008).
Although the US Food and Drug Administration (FDA) has granted “Breakthrough Therapy Status” to two organizations conducting large multi-site trials with this drug (Compass Pathways 2018; Usona Institute 2020), psilocybin remains a schedule I drug. If research continues to show medical benefits, the FDA could approve psilocybin for use as a medical treatment within the next few years. In addition, many people interested in this treatment are not waiting for its legal approval and are currently experimenting with personal use of psychedelics.

Understanding current trends in the acceptance of psilocybin and psychedelics more generally among clinicians is important in training and education. However, little research has been published on this topic. For example, Barnett, Siu, and Pope (2018) explored the acceptability of psychedelics among psychiatrists, demonstrating that overall psychiatrists perceived psychedelics as hazardous and “appropriately illegal,” yet many expressed optimism about the future use of psychedelics in psychotherapy. Furthermore, Hutchison and Bressi (2020) published a paper advocating for greater awareness about psychedelics and increased use of psychedelic-assisted therapies within the social work profession, however it is currently unknown how acceptable this approach is among social workers. No study to date has assessed the attitudes and beliefs about psychedelics among clinical and counseling psychologists, thus limiting our understanding of this topic among a critical component of the mental health treatment workforce. Importantly, many psychologists are in leadership positions in the US, thereby making them key influencers in treatment programs and other clinical settings. A better understanding of the beliefs among clinical and counseling psychologists could help inform education and training needs in the psychologist workforce and help increase understanding about potential barriers to the dissemination of this treatment.

This paper reports on the results of a quasi-experimental survey study designed to assess psychologists’ attitudes toward psychedelics generally, and psilocybin specifically because of its likelihood of being the first drug to be approved for therapeutic use. Because one of the hallmark effects of psilocybin is the mystical or spiritual experience (Aday et al. 2020; Davis et al. 2020; Griffiths et al. 2006), we sought to explore whether attitudes and beliefs about such experiences varied as a function of whether they were (or would be) occasioned naturally (e.g., via meditation or a religious event) or whether they were (or would be) occasioned by psilocybin. Specifically, the present study was designed to examine (1) whether beliefs about working with a client who had a recent spiritual/mystical experience varies as a function of whether these experiences are occasioned by psilocybin or a religious/spiritual event; (2) whether beliefs about working with a client reporting spiritual/mystical experiences differs as a function of whether these experiences would be occasioned by psilocybin or a meditation retreat. Because the treatment approach in psychedelic-assisted therapy is somewhat similar to other medication-assisted treatments currently available in the US that are also stigmatized (e.g., opioid agonist therapy), we also explored (3) whether the acceptability of the use of medication-assisted therapy differs as a function of whether the medication is psilocybin or an opioid agonist. Finally, we examined (4) the perceived safety and therapeutic benefits of psychedelics compared to other well-known substances.

Methods

Participants and procedure

This is a cross-sectional online survey study of psychologists conducted between July and August 2020. A database with 27,866 e-mail addresses of psychologists in the US was purchased from a company authorized by individuals to use their e-mails for marketing purposes. Two waves of recruitment e-mails were sent with information about the study and a secure link to a Qualtrics survey. Inclusion criteria included: (1) at least 18 years of age, (2) a licensed clinical or counseling psychologist in the US, and, (3) able to speak, read, and write English fluently. Recruitment e-mails described the study as an examination of “...perceptions of the use of psychoactive substances in psychotherapy.” During recruitment, approximately 15,000 e-mails were returned as “undeliverable.” Of those e-mails that were successfully delivered (approximately 12,866), a total of 447 were opened and led to a subsequent click of the electronic link to the survey. Of these 447 participants that we could verify they viewed the recruitment e-mail and consent document, there were 26 people that did not consent to participate and 46 consented but did not complete study questionnaires. Of the remaining 375, there were 6 participants who reported not being licensed to practice psychology and 3 were identified as duplicate responders and were thus excluded. The final sample included 366 participants (82% of those who opened the recruitment e-mail and viewed the informed consent document).

After starting the survey, participants were randomized to one of two conditions in which they were presented with a series of vignettes and corresponding questions (see description below). Following this part of
the survey, every participant completed a series of questionnaires (also described below). Given that the term psychedelics can be broadly interpreted, a specific definition of psychedelics was provided for questions related to general attitudes of psychedelics. Lastly, participants were informed that they had the option of entering a raffle for a chance to win one of ten $50 or one of five $100 electronic gift cards. Any identifying information for the raffle was separated from the study data in order to maintain anonymity. The study was deemed exempt by the Ohio State University Institutional Review Board. The full survey is available from the first author (AKD), by request.

Measures

Demographics
Twelve items were included to examine demographics, including participants’ age, biological sex, gender, level of education, years practicing as a psychologist, primary theoretical orientation, treatment setting, background in training, and geographical location (See Supplemental Table S1).

Vignettes and follow-up questions
Participants were randomized to one of two conditions in which they were presented with a series of vignettes (provided in supplemental appendix 1). Group one was presented with (1a) a vignette depicting a client with major depressive disorder who reports having a recent experience with psilocybin mushrooms that they deemed powerfully therapeutic and transformative, (2a) a vignette depicting a client with major depressive disorder who reports that they have been reading about the therapeutic benefits of going on a meditation retreat and wants to explore incorporating this in therapy, and (3a) a series of questions about medication assisted treatment (e.g., methadone or suboxone) for assisting people diagnosed with an opioid use disorder. Group two was presented with a corresponding series of vignettes: (1b) a vignette depicting a client with major depressive disorder who reports having an experience with a particularly moving spiritual/religious activity that they deemed powerfully therapeutic and transformative, (2b) a vignette depicting a client with major depressive disorder who reports that they have been reading about the therapeutic benefits of psychedelic mushrooms and want to explore incorporating this in therapy, and (3b) a series of questions about psychedelic assisted treatment for assisting people diagnosed with a substance use disorder, PTSD, depression, or anxiety. Questions probing the attitudes and beliefs about each vignette/senario (i.e., 1a/1b, 2a/2b, 3a/3b) were identical to allow for statistical comparisons.

After participants were randomized to vignette conditions and presented with the vignettes, they were presented with 7 questions for vignettes 1a/2a and 7 questions for vignettes 2a/2b (see Table 1 to 4 for items). For example, as Table 1 shows, in the first set of vignettes (for 1a/2a) items asked participants to report how likely they would be to “... further explore this client’s experience in order to learn from it?” and “... believe that this was an authentic spiritual experience?” on a 6-point scale from −3 (definitely not) to 3 (definitely). Two additional items (see Table 2) probed “How concerned would you be for the client’s safety/about possible psychosis developing?” on a 6-point scale from 0 (not at all) to 5 (extremely). In the second set of vignettes (for 2a/2b), and as Table 3 shows, examples of items included asking how likely participants were to “... explore the pros and cons of engaging in this new behavior?” and “... seek additional consultation?” on a 6-point scale from −3 (definitely not) to 3 (definitely).

Acceptability of medication/psychedelic assisted therapy
A modified version of the Treatment Acceptability Rating Form-Revised (TARF-R) (Reimers, Wacker, and Cooper 1991) was used to measure participants’ level of acceptability of psychedelic or medication-assisted therapies (for vignettes 3a/3b). This measure was modified so that the language was uniform and response options were standard across items (e.g., changing “How clear is your understanding of this treatment” to “I have a very clear understanding of psychedelic-assisted therapy”). The response options were also modified to fit the newly formatted questions. Specifically, participants were asked to rate their agreement with each statement on a 5-point Likert scale ranging from −2 (Strongly disagree) to 2 (Strongly agree). The final seven items were used as single item measure for each aspect of treatment acceptability in data analyses. See Table 4 for a list of items.

Safety and therapeutic potential of psychoactive drugs
We created 10 items to assess the safety and therapeutic potential of five different types of psychoactive drugs (alcohol, cannabis, psychedelics, cocaine, and opiates). Safety questions were rated on a 6-point scale from −3
(extremely unsafe) to 3 (extremely safe). Therapeutic potential questions were rated on a 5-point scale from 0 (no therapeutic potential) to 4 (very strong therapeutic potential).

**Psychedelic-related beliefs, attitudes, and experiences**
Seven items from a prior study on attitudes of psychiatrists (Barnett, Siu, and Pope 2018) were used to assess the general perceptions of psychedelics among participants (e.g., the use of psychedelics increases the risk for subsequent psychiatric disorders, the use of psychedelics should be illegal for recreational purposes, shows promise in treating psychiatric disorders) on a 5-point Likert scale from –2 (strongly disagree) to 2 (strongly agree). We also created 7 additional items to assess background characteristics related to perceptions and experiences related to psychedelics, 1) “How knowledgeable are you about the risks and benefits associated with psychedelic use?” (from not at all (1) to extremely (5)), 2) “Have you ever used psychedelics in the past?” (yes/no), 3) If yes to question #2 then “Overall, was your experience negative or positive?” (from very negative (–2) to very positive (2)), 4) “Do you have any friends or relatives who have had a positive experience with psychedelics?” (yes/no), 5) If yes to question #4 then “If yes, how positive was it?” (from mildly positive (1) to life transforming (5)), 6) “How many patients have you worked with that talked about a psychedelic experience during treatment” (from 0 to more than 50), and 7) “Michael Pollan wrote a book called, ‘How to Change Your Mind’ about the potential therapeutic benefits of psychedelics. Have you read this book?” (yes, no, I’ve read some of it), and “How knowledgeable are you about the risks and benefits associated with psychedelic use?” (not at all, somewhat, a good amount, very, extremely).

**Data analysis**
First, descriptive statistics were calculated to examine all demographic variables in the overall sample and within each randomized vignette group. A series of chi-square and t-test analyses were then conducted to examine whether there were any significant differences in demographic characteristics between groups. Next, a series of independent t-tests were conducted to analyze whether there were differences in responses to questions following each of the vignette conditions (1a/1b; 2a/2b; 3a/3b) between groups. Cohen’s d was calculated to assess the effect size of any between group differences. Using the entire sample as one group, repeated measures ANOVAs were conducted to examine whether there were differences in mean ratings of the perceived safety of five different drugs (alcohol, cannabis, psychedelics, cocaine, opioids). Then, a second series of repeated measures ANOVAs were conducted to examine whether there were differences in ratings of the perceived therapeutic value of five different drugs (alcohol, cannabis, psychedelics, cocaine, opioids). We followed each significant repeated measures ANOVA with post-hoc tests of mean pairwise comparisons to explore which mean ratings were different from one another. Partial eta squared was calculated to assess the main effect size in each ANOVA. A p-value of .05 was used to determine statistical significance. All analyses were conducted in SPSS v.27.

**Results**
As Supplemental Table S1 shows, participants were primarily middle-aged (M = 50.3, SD = 13.6) female (69%) psychologists with a PsyD or PhD degrees (95%). Most of the participants reported practicing Cognitive Behavioral Therapy (74%), followed by psychodynamic/analytic (31%) and humanistic/person-centered (28%) therapies. The participants reported practicing psychology for an average of 17.4 (SD = 12.8) years, and most reported working in a private practice setting (43%) in various regions of the US. Approximately half of the sample reported belonging to an Abrahamic religious group (51%), and one-fifth (21%) indicated that they were not religiously affiliated. The two vignette groups did not statistically differ on any demographic variable.

Tables 1 and 2 presents responses to vignettes 1a/1b describing a hypothetical client with major depression reporting having a recent experience with (1a) psilocybin mushrooms or (1b) a spiritual/religious activity. Nearly all respondents indicated they would be very likely to probe further about the reference experience regardless of the type of experience reported by their client: psilocybin (95.1%) or spiritual/religious activity (97.3%). The most pronounced and statistically significant difference between the groups emerged in response to the question about the likelihood of admonishing the client against the risks of engaging in the reference behavior. Approximately three-quarters (76.2%) of respondents indicated that they would be likely to or definitely warn their clients about the risks associated with psilocybin use compared with only one-quarter (23.8%) reporting they would be likely to or definitely warn about the risks associated with a spiritual/religious activity (Cohen’s d = 1.37). As shown in Table 2, five and eight times as many participants, respectively, indicated they
Table 1. Comparison of responses to vignette questions as a function of vignette condition (Group 1a: MDD and psilocybin vs Group 1b: MDD and spiritual event).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unlikely or Definitely not (Psilocybin group) %</th>
<th>Likely or Definitely (Psilocybin group) %</th>
<th>Vignette Group 1a N = 181 M(SD)</th>
<th>Unlikely or Definitely not (Spiritual Event group) %</th>
<th>Likely or Definitely (Spiritual event group) %</th>
<th>Vignette Group 1b N = 185 M(SD)</th>
<th>t-test value</th>
<th>Effect size: Cohen's d</th>
</tr>
</thead>
<tbody>
<tr>
<td>How likely would you be to further explore this client’s experience in order to learn from it?</td>
<td>3.9%</td>
<td>95.1%</td>
<td>2.4 (1.1)</td>
<td>2.7%</td>
<td>97.3%</td>
<td>2.4 (0.9)</td>
<td>−.92</td>
<td>−</td>
</tr>
<tr>
<td>How likely would you be to believe that this was an authentic spiritual experience?</td>
<td>26.1%</td>
<td>73.9%</td>
<td>0.9 (1.6)</td>
<td>17.8%</td>
<td>82.2%</td>
<td>1.2 (1.4)</td>
<td>−2.25*</td>
<td>.24</td>
</tr>
<tr>
<td>How likely would you warn against the risks of engaging in this behavior again?</td>
<td>23.8%</td>
<td>76.2%</td>
<td>1.1 (1.7)</td>
<td>76.2%</td>
<td>23.8%</td>
<td>−1.1 (1.5)</td>
<td>13.12***</td>
<td>1.37</td>
</tr>
<tr>
<td>How likely do you think this experience is to be beneficial to the client?</td>
<td>16.0%</td>
<td>84.0%</td>
<td>1.1 (1.4)</td>
<td>7.6%</td>
<td>92.4%</td>
<td>1.5 (1.1)</td>
<td>−2.76**</td>
<td>.29</td>
</tr>
<tr>
<td>How likely would you be to get consultation relating to this case?</td>
<td>29.3%</td>
<td>70.7%</td>
<td>1.0 (1.8)</td>
<td>44.9%</td>
<td>55.1%</td>
<td>0.2 (1.7)</td>
<td>4.84***</td>
<td>.51</td>
</tr>
</tbody>
</table>

Range of scores are −3 (definitely not) to +3 (definitely).

*p < .05, **p < .01, ***p < .001

Table 2. Comparison of responses to vignette questions as a function of vignette condition (Group 1a: MDD and psilocybin vs Group 1b: MDD and spiritual event).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Not at all (Psilocybin group) %</th>
<th>Very or Extremely (Psilocybin group) %</th>
<th>Vignette Group 1a N = 181 M(SD)</th>
<th>Not at all (Spiritual Event group) %</th>
<th>Very or Extremely (Spiritual Event group) %</th>
<th>Vignette Group 1b N = 185 M(SD)</th>
<th>t-test value</th>
<th>Effect size: Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td>How concerned would you be for the client’s safety?</td>
<td>5.5%</td>
<td>20.5%</td>
<td>2.4 (1.3)</td>
<td>15.1%</td>
<td>3.8%</td>
<td>1.7 (1.1)</td>
<td>6.11***</td>
<td>.64</td>
</tr>
<tr>
<td>How concerned would you be about possible psychosis developing?</td>
<td>14.4%</td>
<td>15.5%</td>
<td>2.0 (1.3)</td>
<td>11.9%</td>
<td>2.2%</td>
<td>1.6 (1.0)</td>
<td>3.10**</td>
<td>.33</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01, ***p < .001

Range of scores are 0 (not at all) to 5 (extremely).

Note. Ratings for “slightly” and “moderately” are not included in this table but are available upon request from the corresponding author.

Table 3. Comparison of responses to vignette questions as a function of vignette condition (Group 2a: Depression and meditation retreat vs Group 2b: depression and psilocybin).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unlikely or Definitely not (Psilocybin group) %</th>
<th>Likely or Definitely (Psilocybin group) %</th>
<th>Vignette Group 2a (meditation retreat group) M(SD)</th>
<th>Unlikely or Definitely not (meditation retreat group) %</th>
<th>Likely or Definitely (meditation retreat group) %</th>
<th>Vignette Group 2b (psilocybin group) M(SD)</th>
<th>t-test value</th>
<th>Effect size: Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td>How likely are you to explore the pros and cons of engaging in this new behavior?</td>
<td>9.2%</td>
<td>90.8%</td>
<td>2.4 (1.2)</td>
<td>4.4%</td>
<td>95.6%</td>
<td>2.1 (1.4)</td>
<td>2.71**</td>
<td>.28</td>
</tr>
<tr>
<td>How likely are you to seek additional consultation?</td>
<td>15.7%</td>
<td>84.3%</td>
<td>−0.3 (1.9)</td>
<td>55.2%</td>
<td>44.8%</td>
<td>1.5 (1.5)</td>
<td>−10.41***</td>
<td>1.09</td>
</tr>
<tr>
<td>How likely are you to refer them to another clinician should they choose to engage in these activities?</td>
<td>60.0%</td>
<td>40.0%</td>
<td>−1.9 (1.2)</td>
<td>91.7%</td>
<td>8.3%</td>
<td>−0.4 (1.9)</td>
<td>−9.29***</td>
<td>.97</td>
</tr>
<tr>
<td>How likely are you to warn them about potential risks?</td>
<td>7.6%</td>
<td>92.4%</td>
<td>−0.4 (1.8)</td>
<td>57.5%</td>
<td>42.5%</td>
<td>2.0 (1.2)</td>
<td>−14.57***</td>
<td>1.53</td>
</tr>
<tr>
<td>How likely are you to warn them against trying it?</td>
<td>57.3%</td>
<td>42.7%</td>
<td>−2.0 (1.0)</td>
<td>94.5%</td>
<td>5.5%</td>
<td>−0.2 (1.6)</td>
<td>−12.64***</td>
<td>1.32</td>
</tr>
<tr>
<td>How likely are you to help them identify additional ways they can educate themselves?</td>
<td>5.4%</td>
<td>94.6%</td>
<td>1.6 (1.4)</td>
<td>10.5%</td>
<td>89.5%</td>
<td>2.3 (1.0)</td>
<td>−5.29***</td>
<td>.56</td>
</tr>
<tr>
<td>How likely are you to ask them to wait to try this until you further discuss it in therapy?</td>
<td>26.5%</td>
<td>73.5%</td>
<td>−0.8 (1.6)</td>
<td>69.6%</td>
<td>30.4%</td>
<td>1.1 (1.7)</td>
<td>−10.58***</td>
<td>1.11</td>
</tr>
</tbody>
</table>

Range of scores are −3 (definitely not) to +3 (definitely).

*p < .05, **p < .01, ***p < .001
would be “very” or “extremely” concerned about the client’s general safety (20.5% vs 3.8%) and their risk of developing psychosis following psilocybin (15.5% vs 2.2%), compared with a spiritual/religious activity (Cohen’s $d = 0.33–0.64$). Interestingly, despite the large proportion of participants likely to warn clients about the risks of psilocybin, an approximately equal proportion also reported that they would consider the client’s experience to be psychologically beneficial (84.0%) and genuinely spiritual in nature (73.9%).

There were several between-group differences in response to vignettes 2a/2b (see Table 3), which described a hypothetical client interested in seeking out either a (2a) psilocybin mushroom experience or a (2b) meditation retreat to cope with depression related to a life-threatening illness. Twice as many participants reported that they would warn their client about potential risks of psilocybin use (92.4%) and indicated a need to seek out additional consultation (84.3%) compared to participants in the meditation retreat group (42.5% and 44.8% respectively). Four to eight times as many participants also indicated that they would refer their client to another clinician (40.0% vs 8.3%) and to warn them against trying psilocybin (92.4% vs 42.5%), compared to those participants in the meditation retreat group (Cohen’s $d$ range = 0.97–1.53). There were large, and similar, proportions of participants who indicated that they would be very likely to help their client identify additional ways to educate themselves about the selected approach (94.6% and 89.5%), and to explore the pros and cons of engaging in the activity (90.8% and 95.6%) (Cohen’s $d$ range = 0.28–0.56), across both groups.

For the next section, participants were asked about general attitudes regarding acceptability and perceived effectiveness of either psychedelic-assisted treatment for treating a substance use disorder, PTSD, depression, or anxiety (3a), or medication-assisted treatment (e.g., methadone or suboxone) for treating an opioid use disorder (3b). As Table 4 shows, the proportions of participants who indicated that they would be open to or favorably disposed toward the reference treatment, was significantly lower for the psychedelic-assisted therapy group (22.2%) compared to the medication-assisted treatment group (74.5%) (Cohen’s $d = 1.26$). Similarly, participants indicated psychedelic-assisted treatment as an acceptable approach less often (22.2%) than indicated medication-assisted treatment (76.3%) (Cohen’s $d = 1.23$). Participants also rated psychedelic-assisted treatment as less reasonable (28.1%) compared to medication-assisted treatment (80.1%; Cohen’s $d = 1.86$) and were less confident in the effectiveness of psychedelic-assisted treatment (8.7%) than medication-assisted treatment (39.8%; Cohen’s $d = 1.08$).

Table 4. Acceptability and perceived effectiveness of either psychedelic-assisted treatment for assisting people diagnosed with a substance use disorder, PTSD, depression, or anxiety (3a), or medication-assisted treatment (e.g., methadone or suboxone) for assisting people diagnosed with an opioid use disorder (3b).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Disagree (MAT)</th>
<th>Neutral (MAT)</th>
<th>Agree (MAT)</th>
<th>Vignette Group 1 N = 181</th>
<th>Disagree (PAT)</th>
<th>Neutral (PAT)</th>
<th>Agree (PAT)</th>
<th>Vignette Group 2 N = 185</th>
<th>t-test value</th>
<th>Cohen’s $d$</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have a very clear understanding of (medication or psychedelic) assisted treatment</td>
<td>23.8%</td>
<td>23.7%</td>
<td>52.5%</td>
<td>0.4 (1.1)</td>
<td>64.9%</td>
<td>15.6%</td>
<td>19.5%</td>
<td>-0.7 (1.1)</td>
<td>8.99***</td>
<td>.94</td>
</tr>
<tr>
<td>I find (medication or psychedelic) assisted treatment to be very acceptable</td>
<td>3.9%</td>
<td>19.8%</td>
<td>76.3%</td>
<td>1.0 (0.8)</td>
<td>30.3%</td>
<td>47.5%</td>
<td>22.2%</td>
<td>-0.1 (1.0)</td>
<td>11.82***</td>
<td>1.23</td>
</tr>
<tr>
<td>I am very open to my clients engaging in (medication or psychedelic) assisted treatment</td>
<td>4.4%</td>
<td>21.1%</td>
<td>74.5%</td>
<td>1.0 (0.8)</td>
<td>39.5%</td>
<td>38.3%</td>
<td>22.2%</td>
<td>-0.2 (1.1)</td>
<td>12.11***</td>
<td>1.26</td>
</tr>
<tr>
<td>If I were working with a client with an opiate use disorder, I think (medication or psychedelic) assisted treatment would be a very reasonable treatment approach</td>
<td>2.8%</td>
<td>17.1%</td>
<td>80.1%</td>
<td>1.1 (0.8)</td>
<td>57.3%</td>
<td>28.1%</td>
<td>14.6%</td>
<td>-0.7 (1.1)</td>
<td>17.83***</td>
<td>1.86</td>
</tr>
<tr>
<td>I think it is very likely that there might be disadvantages of (medication or psychedelic) assisted treatment</td>
<td>14.4%</td>
<td>32.6%</td>
<td>53.0%</td>
<td>-0.4 (0.8)</td>
<td>2.2%</td>
<td>21.6%</td>
<td>76.2%</td>
<td>-0.9 (0.7)</td>
<td>6.17***</td>
<td>.65</td>
</tr>
<tr>
<td>If I had a client with an opiate use disorder, I think it is very likely that (medication or psychedelic) assisted treatment could make permanent improvements in their life</td>
<td>6.6%</td>
<td>30.4%</td>
<td>63.0%</td>
<td>0.7 (0.8)</td>
<td>22.2%</td>
<td>52.4%</td>
<td>25.4%</td>
<td>0.0 (0.9)</td>
<td>7.74***</td>
<td>.81</td>
</tr>
<tr>
<td>If I had a client with an opiate use disorder, I am very confident that (medication or psychedelic) assisted treatment would be effective for them</td>
<td>8.8%</td>
<td>51.4%</td>
<td>39.8%</td>
<td>0.4 (0.7)</td>
<td>48.1%</td>
<td>43.2%</td>
<td>8.7%</td>
<td>-0.5 (0.9)</td>
<td>10.35***</td>
<td>1.08</td>
</tr>
</tbody>
</table>

Range of scores are −2 (strongly disagree) to +2 (strongly agree).

*p < .05, **p < .01, ***p < .001
a significant main effect for drug type in the question examining the perceived safety of different drugs, F(3.2, 1153.8) = 309.65, p < .001, partial eta squared = .46. Post-hoc tests of mean pairwise comparisons revealed that psychedelics (M = −0.2, SD = 1.6) and alcohol (M = −0.5, SD = 1.5) were rated to be comparable in safety, followed by opioids (M = −1.0, SD = 1.5) and cocaine (M = −2.1, SD = 1.0). Cannabis (M = 1.0, SD = 1.3) was perceived to be the safest of all drugs. Additionally, there was a significant main effect for drug type in the question examining the perceived therapeutic value of different drugs, F(3.1, 1104.8) = 383.98, p < .001, partial eta squared = .52. Post-hoc tests of mean pairwise comparisons revealed that participants rated cannabis (M = 2.0, SD = 0.9) and psychedelics (M = 1.9, SD = 1.1) to be roughly equivalent in therapeutic value, followed by opioids (M = 1.3, SD = 1.0), alcohol (M = 0.5, SD = 0.6), and cocaine (M = 0.4, SD = 0.6), the latter two were rated equivalently and as least therapeutic of all drugs.

Another set of questions modeled after the survey used by Barnett, Siu, and Pope (2018) assessed perceptions of the risks and clinical applications of psychedelic-assisted therapy (see Supplemental Table S2). A large proportion of participants indicated that they believe the use of psychedelics increases the risk of subsequent psychiatric (47.9%) or neurocognitive impairment (34.6%) and should remain illegal for recreational use (30.7%). On the other hand, a large percentage of participants specified that they believed that medically supervised use of psychedelics is not unsafe (55.4%), deserves further scientific inquiry (84.7%), and should not be illegal (30.2%).

The last set of questions assessed participants’ personal use of psychedelics and that of their peers. Slightly less than one-third (29.4%) of participants reported they had a personal experience with psychedelics in the past, and most of these participants rated the experience, on average, as somewhat (40.6%) or very (39.6%) positive. Approximately one-half (55.1%) of participants reported their friends or relatives had at least one prior positive experience with psychedelics. Overall, 68.5% of participants reported they had worked with a client who had experiences with psychedelics. Interestingly, only 3% of participants had read Michael Pollan’s (2018) popular book on the science of psychedelics. Lastly, most (43.5%) participants indicated they were only “somewhat” knowledgeable about the risks and benefits of psychedelic use.

Discussion
A quasi-experimental internet survey study among 366 psychologists was conducted in order to assess attitudes and beliefs about psychedelics and more specifically the use of psilocybin among clients with depression. Participants tended to express cautiously favorable attitudes toward psychedelic experiences but indicated concern about their possible psychiatric and neurocognitive risks. The broad spectrum of responses to our survey is congruent with findings of two recent studies assessing views of psychiatrists and palliative care clinicians toward psychedelics (Barnett, Siu, and Pope 2018; Beausant et al. 2020). Our sample of psychologists exhibited marginally more favorable views regarding risk-adjusted therapeutic value of psychedelic use compared to Barnett’s (2018) population. For example, 17% of the participants in our study, compared with 25% of psychiatrists in Barnett and colleagues’ (2018) study, reported beliefs about psychedelics being unsafe even under controlled medical supervision. An overwhelming majority (81–85%) in both populations reported they believed psychedelic-assisted interventions deserve further research, although less than half (43–47%) agreed it “shows promise in treating psychiatric disorders.” Together, these findings suggest that although psychologists are interested in the potential of psychedelics for mental health treatment, this class of interventions is not yet widely accepted.

It is unsurprising that participants in this study were twice as likely to report they would warn a potential client about risks associated with psilocybin than they would regarding a meditation retreat and is likely reflective of stigma associated with psychedelics. The large body of research on meditation has mostly centered on its putative benefits for mental and physical health/well-being. However, a growing number of reports indicate that psychologically harmful events can occur in the context of meditation practice. Evidence suggests that the prevalence of long-term psychiatric adverse events that occur in the context of meditation (Farias et al. 2020; Van Dam et al. 2018) are roughly equivalent to the rates associated with the naturalistic use of psychedelics (Carhart-Harris and Nutt 2010; Johansen and Krebs 2015) and range up to 8–11%. Interestingly, these rates are not dissimilar from those reported for psychotherapy practice in general (Crawford et al. 2016; Schermuly-Haupt, Linden, and Rush 2018).

Though psychedelics may be perceived as dangerous, evidence suggests that they are actually very safe. In contemporary clinical trials with psychedelics, there have been no reports of any serious adverse events including prolonged psychosis, injurious behaviors, or persistent perceptual changes (dos Santos et al. 2018; Studerus et al. 2011).
There are previous reports, although rare, of psychiatric harms following controlled administration of psychedelics in the 1950s and 1960s (Larsen 2016; Ludwig et al. 1969). It is likely, however, that such events were attributable to inadequate screening procedures, intentional neglect of contextual variables related to participants’ psychological mind-sets and environmental setting (“set” and “setting”), or mistreatment by investigators (Carhart-Harris et al., 2018; Johnson, Richards, and Griffiths 2008). Given the influence of contextual factors, clinical trials have emphasized the importance of cultivating a therapeutically conducive set and setting to maximize safety and reduce the likelihood of adverse reactions (Johnson, Richards, and Griffiths 2008). Highly challenging experiences can arise under the influence of a psychedelic such as long-held or unprocessed grief and trauma-related memories (Belser et al. 2017; Swift et al. 2017; Watts et al. 2017). At the same time, there is evidence that challenging experiences can be therapeutically beneficial (Barrett et al. 2016; Carbonaro et al. 2016), perhaps because they may result in opportunities for personal insight or emotional processing.

These results highlight a need to better educate psychologists on the relative safety profiles of psychedelics compared to traditional pharmaceutical agents and other consciousness-altering substances. Most participants indicated they lack an understanding of the full range of psychedelic effects and would need to seek out consultation about these concerns. Additionally, participants in our study judged psychedelics and alcohol to be comparable in safety, followed by opioids and cocaine, and rated cannabis as the safest of all drugs. Epidemiological data indicate rates of adverse effects related to psilocybin use are very low relative to the adverse effects of other psychoactive drugs. Results are consistent across studies in identifying that alcohol is the most harmful substance (i.e., physical harm, social harms, addiction potential) followed by heroin and crack cocaine; serotonergic psychedelics such as psilocybin and LSD are determined to be the least harmful (Morgan et al. 2010; Nutt, King, and Phillips 2010; Nutt et al. 2007). For example, although cannabis has been reported as 3.6 times less harmful than alcohol on indices of harm potential, it has also been reported as 3.3 times more harmful than psilocybin or LSD (Nutt, King, and Phillips 2010). Additionally, in population-data research, lifetime psychedelic use has not been associated with any significant psychiatric symptom indicators (odds ratio range 0.8–1.1) and two studies actually associated psychedelic use with significantly reduced odds of mental health problems (Carhart-Harris and Nutt 2010; Johansen and Krebs 2015). These data demonstrate misinformation about psychedelics and a lingering cultural stigma even amongst highly educated mental health professionals.

As a survey study, this study suffers from a number of limitations. There is the possibility of sampling bias due to low percentages of psychologists who were invited and completed the survey. However, our rates of completion are not dissimilar to other online surveys (Barnett, Siu, and Pope 2018). Results are self-report and possible issues of social desirability and stigma relating to psychedelics may have influenced results. In addition, it is important to note these results relate to psychologists and may not generalize to other professional groups. Finally, multiple statistical tests may have increased Type I error. At the same time, the sample size was adequate for a study of this type and allowed for excellent statistical power to detect between group differences. It was also an adequate sample size to result in relatively stable parameter estimates (Schönbrodt and Perugini 2013).

Clinical trials of psychedelic-assisted psychotherapy are on the rise, with clinicians and researchers actively demonstrating the viability of psychedelics as effective therapeutic agents. Given the growing clinical evidence base, regulatory support, and cultural momentum surrounding this movement, many individuals are pursuing psychedelic experiences outside of medical settings for psychological or spiritual exploration. Clinicians who are perhaps not interested in administering psychedelic interventions in the future could still benefit from learning about their complex effects as interest among the general public rises. Given their sensitivity to and experience working with mental health issues, we believe psychologists are uniquely qualified to support clients in processing or integrating psychedelic experiences and to encourage vital harm reduction practices, as well as helping to guide the ethical implementation of these treatments into clinical and research settings.

**Data availability**

Upon request from the corresponding author.

**Disclosure statement**

Dr. Davis is a board member of Source Research Foundation. This organization was not involved in the design/execution of this study or the interpretation or communication of findings.
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Ethical statement

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

References


