

2022

Lay Perceptions of Treating Mental Illness with Psychedelic Assisted Therapy

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Recommended Citation

Barksdale, Dèjah and Pica, Emily (2022) "Lay Perceptions of Treating Mental Illness with Psychedelic Assisted Therapy," *Modern Psychological Studies*: Vol. 28: No. 1, Article 7.

Available at: <https://scholar.utc.edu/mps/vol28/iss1/7>

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Abstract

With roughly 44.7 million individuals struggling with mental health problems, it is important that new methods of treatment are explored. Currently, the primary method of treatment is Selective Serotonin Reuptake Inhibitors (SSRIs) for disorders such as: anxiety, depression, and post-traumatic stress disorder (PTSD), but there are also many detrimental side effects and they only decrease symptomology for a short period of time. The interest and enthusiasm of many researchers has led to uncovering the true benefits of utilizing psychedelic drugs as a leading treatment for mental health problems has been rising. Participants ($N = 474$) were given a questionnaire regarding their knowledge of mental illnesses (anxiety, depression, and PTSD), traditional treatment (SSRIs), perception, potential usage, and recommendations towards psychedelic drugs being used as treatment for mental illnesses. A correlation analysis revealed that participants were not being open to their personal usage of psychedelics but being more open to recommend to their loved ones. Thus, these results suggest that while society may be open to others engaging in psychedelic-assisted therapy, there is still some hesitation for self-use.

Keywords: mental health; therapy; psychedelics; psychedelic assisted therapy; perceptions of psychedelics

Lay Perceptions of Treating Mental Illness with Psychedelic Assisted Therapy

In 2016, there was an estimated 44.7 million adults aged 18 or older in the United States with a mental illness/disorder (National Institute of Mental Health, n.d.). According to the American Psychiatric Association (APA; 2018), a mental illness/disorder is a set of health conditions involving changes in behavior, emotion, and thinking and is associated with distress and/or problems functioning in family, social, or work environments. The three mental disorders that will be highlighted in this paper are anxiety, depression, and post-traumatic stress disorder (PTSD). The traditional treatments for these disorders all list Selective Serotonin Reuptake Inhibitor (SSRIs) as a leading treatment (Mayo Clinic, 2019). The problem is that these traditional treatments do not fully help treat the illness and may only decrease symptoms for a short period of time. Along with not truly solving the problem, these traditional treatments have a host of detrimental side effects such as: drowsiness, insomnia, sexual dysfunction, and many more (Mayo Clinic, 2019). They also have an increased rate of dependence after taking them for a long period of time. There is a new hope for treating mental illness, and that glimmer of hope falls under the umbrella of psychedelic drugs. With the use of psychedelic drugs in a controlled environment, we can help treat not just these illnesses, but also help alleviate the suffering of the patients and increase livelihoods. To do this, however, we must first examine how individuals perceive the use of psychedelics in treating mental illness.

According to the American Psychiatric Association (APA, 2018), anxiety is a heightened anticipation of a future concern. The most preferred form of treatment for those with anxiety disorder are SSRIs, which increase levels of serotonin in the brain. However, they are only a temporary relief that lasts up to 4-6 months of regular use. There also are side effects to this drug, which include the following: nausea, drowsiness, dry mouth, insomnia, nervousness,

dizziness, sexual problems, and an impact on appetite (Ballenger et al., 2001). Another form of treatment for anxiety is psychotherapy, which involves different forms of therapy that help an individual notice the way they feel and the underlying reasons why. Cognitive-behavioral therapy (CBT) is the main form of psychotherapeutic treatment for anxiety disorders (Anxiety, 2016). CBT focuses on shifting one's thought and behavioral patterns to gain a better sense of how these aspects are affecting their everyday decisions by providing alternative ways to cope. Depression is another common mental illness defined as a medical illness that negatively affects how people feel, think, and act (APA, 2018). Similar to anxiety, the main form of treatment for depression is SSRIs. However, there are psychotherapies for depression as well. Interpersonal (i.e., how one interacts with others can influence their sense of self), cognitive-behavioral, mindfulness-based cognitive (i.e., how one understands gratefulness for management of thoughts), and psychodynamic therapies (i.e., an in-depth travel to one's unconscious mind to relieve psychic tension) are a few that have been used when attempting to treat depression (Anxiety, 2016).

PTSD is a mental illness that is usually caused by experiencing a traumatic event and is associated with high levels of self-harm, completed suicide and co-morbidity, including anxiety, depression, and substance abuse (Sessa, 2016). There are several forms of treatment for PTSD, which fall under psychotherapy and medications. Psychotherapy includes cognitive therapy (i.e., a talk therapy that focuses on your way of thinking), exposure therapy (i.e., a behavioral therapy that has you re-enter those areas associated with the traumatic experience), and eye movement desensitization and reprocessing (EDMR), which combines exposure therapy that challenges your reaction to the traumatic experiences. As for medications, the best and only ones are serotonergic antidepressants, such as SSRIs, mood stabilizers, and antipsychotics. The cognitive

therapy that is presented is not as useful as it should be because those suffering still show impairments with: parenting, relationships, finances, employment, and socializing after treatment. According to Sessa (2016), this occurs because PTSD sufferers are often so overwhelmed by the negative memories of their trauma that it makes it difficult for them to engage in a therapy that focuses on it. There are high levels of treatment dropouts, and many would attempt suicide or self-medicate with illicit drugs or alcohol to block their feelings.

The Use of Psychedelics and its Relation to Mental Health

In June 1971, President Nixon declared a “war on drugs.” He increased the size and presence of federal drug control agencies and pushed through measures, such as mandatory sentencing and no-knock warrants (Drug Policy, 2020). At a press conference in 1971, Nixon identified drug abuse as “public enemy number one in the United States” (American Enterprise Institute, 2018). However, roughly twenty years later, Nixon’s counsel and Assistant for Domestic Affairs, John Ehrlichman, let it be known to the public that Nixon had ulterior motives for his “war on drugs” campaign. Ehrlichman explained how Nixon’s previous claim of drug abuse being the public enemy of the United States was not accurate, and later explained how the Nixon administration subliminally labeled the anti-war left and African Americans as the real enemies of the United States (AEI, 2018). During this war on drugs, Nixon and his team used scare tactics to divert people from engaging in activity with these psychedelic properties. They claimed that if someone was predisposed to mental illness, psychedelics could push them over the edge, suicide, birth defects, chromosome failure, brain damage, and psychosis (Pollen, 2019).

Psilocybin. Psilocybin is the prodrug of psilocin (4-OH-dimethyltryptamine), a non-selective serotonin 2A receptor (5-HT_{2A}R) agonist and a classic ‘psychedelic’ drug. Both compounds occur naturally in the ‘psilocybe’ genus of mushrooms and are structurally related to

the endogenous neurotransmitter serotonin (5-OH-tryptamine, 5-HT; Carhart- Harris et. al., 2017). When psilocybin enters the body, it moves through the blood to enter the brain where it also binds with serotonin receptors. The brain's ability to process negative stimulation is also weakened while on the drug because the psilocybin causes the amygdala to experience a "short circuit" (Carhart-Harris et. al., 2017). Psilocybin has many positive qualities when it comes to treating mental illnesses. The psychedelic properties have been shown to safely treat psychiatric conditions such as: end-of-life anxiety, depression, alcohol and tobacco addiction, obsessive compulsive disorder (OCD), and treatment-resistant major depression (Carhart-Harris et al., 2017).

Krebs and Johansen (2013) examined whether psychedelics were linked to mental health problems and/or suicidal tendencies among roughly 19,000 respondents who claimed to have used psychedelics. Data were pulled from the annual National Survey on Drug Use and Health (NSDUH) that was collected between 2008 and 2011 (Krebs & Johansen, 2013). Krebs and Johansen found no link between lifetime psychedelic use and indicators of mental health problems; moreover, the use of psychedelics was associated with a lower likelihood of mental health problems from the previous year, such as a lower likelihood of serious psychological distress, inpatient mental health treatment, and psychiatric medication prescription use.

Carhart-Harris et al. (2016) further examined changes in improvement after two oral doses of psilocybin (10 mg and 25 mg, seven days apart) were given to 12 patients with moderate-to-severe, unipolar, treatment-resistant major depression. The study resulted in rapid and sustained psychological effects and with only a few of the patients showing acute symptoms post-psilocybin, such as a headache lasting for two days, paranoia was found in only one patient, but was mild and transient. The remaining patients had no prolonged psychotic symptoms. The

psilocybin effects reduced one's anxiety and the other's depression starting at one week and lasted for up to three months. The researchers used The Quick Inventory of Depressive Symptomatology (QIDS; Rush et al., 2003) and found that depression scores were significantly reduced from baseline to one week and three months post-treatment.

There have been other studies conducted where psilocybin was being used as treatment for those suffering from depression, and anxiety within end-of-life anxiety in cancer patients (Grob, 2010). It helps treat those suffering from end-of-life anxiety in cancer patients as it acts as an influx of serotonin in the brain. The results of these were all about the same when it came to viewing the positive effects psilocybin had on the patients' mental illnesses. Psilocybin connects to certain receptors in the brain and when the individual has a mental illness, such as depression, where their serotonin levels are significantly lower than a "normal" brain, the chemicals of psilocybin binds to the receptors and explodes a burst of serotonin within the brain to uplift one's sense of self and overall mood (Carhart-Harris et al., 2017). By using psilocybin in micro-dosages in a clinical environment, it could lead to happier and healthier individuals that have been suffering from mental illnesses.

3,4-Methylenedioxymethamphetamine (MDMA). MDMA is the active ingredient in the party drug ecstasy, which was once used to induce psychotherapeutic effects during couples therapy and/or spiritual awakenings (Ganguly, 2017). The properties within MDMA are quite effective when it comes to treating mental illnesses, more specifically PTSD. The effects involve euphoria, empathetic social interaction, and increased extroversion. Unlike Psilocybin, MDMA releases its effects through pre-synaptic 5-hydroxytryptamine at 5-HT_{1A} and 5-HT_{1B} receptors that lead to reduced depression and anxiety and increased positive mood (Ganguly, 2017). Although MDMA doesn't fully connect to the same 5-HT_{2A} receptors as Psilocybin and LSD, it

does show an increased activity with that specific receptor, which causes alterations in the perceptions of meanings that allows the individual to think about past experiences in new ways and to develop new insights. It also stimulates the release of dopamine and noradrenaline, which raises the levels of arousal that is useful in therapy (Sessa, 2016).

The first MDMA-assisted psychotherapy study was conducted in 1970 and was used with patients suffering from PTSD in psychotherapeutic settings to serve as a new form of treatment (Mithoefer, 2011). This study consisted of two therapists (male and female), eight and sixteen weeks of psychotherapy sessions, with only about two to three of the weeks being MDMA assisted (Mithoefer, 2011). Each participant was screened prior to the experiment and was educated on how the drug works, the expected effects and risks, and what would happen during the psychotherapy. Participants began with the initial dose of 125 mg and were told to recollect their traumatic memories while wearing eyeshades. The therapist played music in the background to enhance the MDMA experience by spreading more of an emotional response.

Two hours after receiving the initial dose of MDMA, the patient could potentially be offered a further supplemental dose of half the original dose (62.5 mg MDMA), to prolong the effects of the drug and allow for further time for psychotherapy (Mithoefer, 2011). While the patient is undergoing psychotherapy, the therapist is communicating with them by asking about the traumatic memories. Typically, the sessions will last about eight hours and the patient may receive two doses, one at the initial dose and the other cut in half. The results showed a decrease in subjective fear responses and a decrease in connectivity between the prefrontal cortex and increases between the amygdala and hippocampus (Carhart-Harris et al., 2013). Results have been so striking that the FDA approved MDMA as a “breakthrough therapy” for PTSD in 2017 (Massive Science, 2017).

Lysergic Acid Diethylamide (LSD). LSD connects to a specific type of human serotonin called 2A receptor (5-hydroxytryptamine (5-HT_{2A}R)) that primarily mediates the hallucinogenic effects. As a result of the neurons tightly binding to the receptor, the drug itself disrupts the normal signaling pathways in which these receptors play a role in mediating proper communication between neurons (Rickli et al., 2016). They will also masquerade themselves as serotonin, where the drug will bind tightly to the 5-HT_{2A} receptor in synapses primarily in the prefrontal and visual cortices that causes nearby cell populations to speed up and slow down their usually regular firing (Bell, 2017). Not only does LSD have a deeper connectivity with the 5-HT_{2A} receptor, it also may indirectly enhance dopamine neurotransmission without any assistance from the D₂ receptor. The serotonergic hallucinations have been shown to produce overall acute subjective results and potential therapeutic effects (Hollister & Hartman, 1962; Wolbach et al., 1962)

Since the 1960's, LSD has been prohibited from not only recreational usage, but also from medical usage in the United States. However, there are still studies being conducted, outside of the United States, on the beneficial effects of the drug and how if micro-dosed, could lead to a promising future to those dealing with severe anxiety and depression. In Switzerland, an LSD dosage of 200µg is being used in LSD-assisted psychotherapy, which was found to produce greater feelings of closeness to others, happiness, openness, and trust more than with a 100µg (Gasser et al., 2014, 2015).

LSD-induced altered states of consciousness present increases in global connectivity, particularly in the temporo-parietal junction and insular cortex, correlated with feelings of 'ego dissolution' that were produced by LSD (Tagliazucchi et al., 2016). 'Ego dissolution' is the disintegration of the sense of possessing a 'self' or identity that is distinct from others and from

the environment (Preller et al., 2016; Tagliazucchi et al., 2016). The great thing about ego dissolution is its connectivity with the brain neurons that result in obtaining full awareness and connectiveness to the outer world. Throughout this experience of dissolution, it could re-shape those suffering from mental illnesses by altering their cognitive processing for the better and even adjusting their outlook on life from a deeper viewpoint. However, research involving new treatment for mental illnesses with LSD is quite limited. With the information that has been presented, we could provide answers for those suffering from anxiety, depression, and many other illnesses.

Perceptions of the Use of Psychedelics

During the 1970's, Nixon's war on drugs may have led to society believing that these substances will cause an individual to commit suicide, have birth defects, brain damage, and psychosis. This strong claim caused many scientists and researchers to dive deep into Nixon's claim, which was found to be inaccurate (Drug Policy, 2020). However, it was already engraved into societies' mind that psychedelic drugs were the root of all evil and it would send them on a psychotic path if consumed. Since the 70's and even now, people's perceptions of psychedelic drugs have been stagnant. While there is plenty of past and on-going research regarding the benefits of these psychedelic properties, the perceptions are continuing to remain stagnant amongst the majority (Drug Policy, 2020).

While there is a plethora of research examining perceptions of the use of drugs in general, it is important to understand how people perceive the use of psychedelics when treating mental illness. Carhart-Harris and Nutt (2010) conducted a web-based questionnaire study in the United Kingdom to gather information on the perceptions of the benefits and harms of hallucinogenic drug use with some participants reporting having been diagnosed with anxiety, depression, and

PTSD. Both LSD and psilocybin were ranked as having positive impacts on one's well-being and having the least negative impact on both physical and mental health. While participants did acknowledge negative side effects with prolonged use, it is important to note that psychedelic assisted therapy uses *micro*-dosing in a therapeutic setting, as such, prolonged exposure of high amounts would not be possible. Participants also noted that these negative effects were moderate in comparison to the higher dangers associated with cannabis and alcohol use (Carhart-Harris & Nutt, 2010).

These results were further supported when Carhart-Harris and Nutt (2013) specifically examined participants' perceptions who reported using psychedelic drugs to view how it affected their lives positively. Participants actually ranked MDMA, LSD, and psilocybin in the top four brackets for benefits and bottom four for harm, thus suggesting that participants who use these drugs recreationally find them to have more benefits than not. Pertinent to the current study, one reason for why they found these drugs were rewarding was because of their therapeutic properties, which supports prior research examining perceptions in clinical settings (e.g., Grob et al., 2011). Twenty respondents ranked MDMA as having the greatest potential for benefit. They also emphasized MDMA's empathogenic effects: it can help people open-up, which may be useful in psychotherapy. Sixteen respondents ranked LSD as having the greatest potential for benefit. They emphasized LSD's capacity to facilitate insight and self-understanding. Seven respondents ranked psilocybin as having the greatest potential for benefit; similar to LSD, their reasons centered on improved well-being and self-understanding (Carhart-Harris et al., 2016).

Mason and Kuypers (2018) conducted a web-based questionnaire to determine whether self-medication using psychedelics was more efficient than the prescribed drugs from their doctors (such as cognitive behavioral therapy, psychiatric drugs, such as antidepressants or

anxiolytics). The participants were asked if they have or currently use one of the following drugs: alcohol, nicotine, cannabis, MDMA/Ecstasy, psilocybin, LSD, or ayahuasca. The participants were then asked to describe their uses of these drugs and whether or not they have and/or had any mental and/or physical health issues (Mason & Kuypers, 2018). Roughly half of the participants indicated that they have suffered or were currently suffering from a mental health disorder; three-quarters were diagnosed by a medical professional. Roughly 80% of participants were offered some form of medication prescribed by the medical professional, however, three-quarters took their treatment into their own hands by searching for alternatives outside of the medical professional's recommendation, 81% answered that they have used psychedelics to treat or cure their symptoms (Mason & Kuypers, 2018). Of those who used psychedelics as a treatment, 81% reported they felt the treatment had worked, 72% reported their symptoms had disappeared, and 87% reported an improvement in quality of life. Compared to using the treatment recommended by the medical professional, 49% reported the treatment to worked in treating the disorder, 48% reported their symptoms disappeared to an extent at which daily functioning was not compromised any longer, and 54% reported their quality of life had improved (Mason & Kuypers, 2018).

The Current Study

One thing the aforementioned studies have in common is that participants were self-reported psychedelic users. It is important to understand how non-psychedelic users may perceive the use of these drugs in place of traditional psychiatric medications. With more and more clinical trials occurring throughout the world, and most notably in the United States, it is important to understand whether the public would be supportive in these endeavors. Based on previous research, we predicted that those who scored higher on the anxiety, depression, and

PTSD scales (i.e., having high symptomology) will perceive the use of psychedelics more positively than those who scored lower (i.e., having little to no symptomology). Additionally, we predicted those who report that these problems make life difficult would be more accepting of the use of psychedelics than those that reported little to no difficulty. In regard to medication, we predicted that those who currently take psychiatric medication would be more accepting than those not currently taking psychiatric medication. Lastly, we predicted that those who are more knowledgeable about psychedelics would be more open and/or favorable to using psychedelics to treat both their own mental illness and recommend to others for their mental illness compared to those who report little knowledge.

Method

Participants

Participants included members from the community and a university in the southeastern United States ($N = 474$; 44.7% female); participants' ages ranged from 15-years-old to 57-years-old ($M = 24.73$, $SD = 7.40$). The ethnic breakdown of participants included: non-Hispanic White (74.7%), Black (7.4%), Latinx/Hispanic (9.1%), Asian (3.0%), Middle Eastern (0.6%), Native American (0.8%), Pacific Islander (0.6%), and those that identified as other (3.8%). A little over half of participants were students (57.2%).

Measures

A numerical rating scale survey was created that examined participants' perceptions of the severity of anxiety, depression, and PTSD, their knowledge regarding each disorder, the participants' knowledge of psychedelic drugs, and referrals to themselves or others with these disorders to use psychedelics. Participants answered these questions on Likert-type scales ranging from 1 (*not at all*) to 4 (*very often*). Participants also were presented with eight questions

on a numerical rating scale ranging from 1 (*not at all*) to 4 (*very often*) asking if the participant has experienced any of the listed symptoms. The remaining five questions were yes/no and asked the participant whether they have engaged in therapy and/or received psychiatric medication. Lastly, they were asked how knowledgeable they felt about psychedelic drugs and how likely they would be to self-use or refer a friend to use them for treatment modalities.

Procedure

Data were collected using the online survey tool Qualtrics. Participants were first presented with the informed consent form, and those that agreed to participate first answered a series of questions concerning their symptoms (or lack thereof) of depression, anxiety, and PTSD. They were then directed to answer questions concerning their knowledge of psychedelics as well as their perceptions of using these psychedelics as an alternative form of psychiatric medication. Once the study finished, participants were debriefed and thanked for their time.

Results

Scoring

In order to determine whether participants met the criteria for depression, anxiety, and/or PTSD, composite scales were created with higher numbers indicating participants were likely to have the mental health issue. The screening questions were from Mental Health America, and they are scored on their own rating scale, which is 1-4 = minimal, 5-9 = mild, 10-14 = moderate, 15-19 = moderately severe, and 20-27 = severe for anxiety, depression, and PTSD. The questions asked were different based on the specific disorder, yet the overall score was ranged from 1 to 27, which include it being minimal to severe. These scores are based on the answers to the questions that are being asked. Upon examination of scores, depression scores ranged from 9 to 35 ($M = 21.78$, $SD = 5.15$), anxiety scores ranged from 5 to 20 ($M = 12.87$, $SD = 3.10$, and PTSD

scores ranged from 4 to 16 ($M = 8.76$, $SD = 3.02$). See Table 1 for those who have been clinically diagnosed with one of the aforementioned mental health disorders, engaged in therapy, and have been prescribed medication.

In order to examine whether there was a relationship between those who scored higher on the scales and acceptance of the use of psychedelics for self and others, a correlation analysis was conducted. There were no relationships observed for those who scored high on depression. However, there was a relationship between total anxiety scores and whether participants would refer their friends to try psychedelics, $r(472) = -.11$, $p = .01$. There also was a relationship between total PTSD scores and whether participants would refer their friends to try psychedelics, $r(448) = .11$, $p = .02$. There were no relationships observed for taking psychedelics themselves. We then wanted to examine whether the severity of participants' depression, anxiety, and PTSD influenced their perceptions of the use of psychedelics, as such, correlation analyses were conducted. Only one significant relationship was found, participants who found depression more debilitating were more likely to be accepting of using psychedelics for treating their own depression, $r(442) = .14$, $p = .003$.

We also wanted to determine whether those who had been clinically diagnosed with each of the disorders would be more accepting. A point biserial correlation was conducted (1 = yes, 2 = no for diagnosis) and only a relationship between a clinical diagnosis of PTSD and whether participants would take psychedelics themselves emerged, $r(449) = -.13$, $p = .005$, suggesting that those who had not been diagnosed with PTSD were less accepting of using psychedelics for treating their own PTSD. No other relationships emerged. When examining whether there was a relationship between those already prescribed medication and their acceptingness (or lack

thereof) toward using psychedelics, an additional point biserial correlation was conducted and no relationships were observed.

Lastly, and most importantly, we wanted to examine whether those who were knowledgeable about psychedelic drugs would be more likely to refer friends to using them as treatment as well as using them themselves for treatment. Those who were knowledgeable about psychedelics in general, as well as the use of psychedelics, were more likely to want to refer people they knew to use them as treatment as well as use them as treatment themselves (see Table 2).

Discussion

Given the high prevalence of anxiety, depression, and PTSD in society, the current study sought to examine perceptions of the use of psychedelics to help treat these mental illnesses. The majority of research examining this topic has focused on clinical trials determining whether these substances are effective at reducing symptomology. While this is important, it also is of importance to determine how society perceives these treatments as well as whether they would participate in them.

Pahnke (1963) conducted a classic psychedelic research study, which he called “The Good Friday Experiment.” Pahnke administered psilocybin to twenty students in a theological school seminary in hopes to see whether the drug would enhance a mystical experience. The majority of participants benefited from this study and had results of a deepened appreciation of life and nature, enhanced joy and appreciation for unusual experiences and emotions, which are profound for those with depression who are needing boosts of serotonin and to balance out their chemical imbalances. Doblin (1991) followed-up with participants between 24 and 27 years later

to see whether the effects were still present. Participants maintained that their experience in the original study had a positive impact on their spiritual lives.

Grob and colleagues (2011) furthered this work through their examination of the effects of psilocybin on treating anxiety and depression in advanced-stage cancer patients. Compared to the placebo group, participants who were dosed with psilocybin reported a decrease in their anxiety and depression over a course of six months. (Carhart-Harris et. al, 2017) conducted a study to examine how the brain functions both before and after a participant with treatment-resistant depression is given a dosage of psilocybin. After the measures were analyzed and the study was complete, it resulted in the participants feeling the “after-glow” affect, which is characterized by mood improvements and stress relief, which are beneficial for those suffering with depression, anxiety, and PTSD (Pollan, 2017). Moreover, participants showed sustainable benefits whereby they reported a decrease in depressive systems after one week of treatment, and this typically lasted for up to five weeks (Carhart-Harris et. al, 2017).

A common theme among these clinical trials is that they typically begin with surveys to get a glimpse on where the participant is at mentally, then it is followed with entering the comfortable environment, and proceeding with the low dosage of the psychedelic drug associated with the mental illness presented. We believe that post-participation of these clinical trials, these individuals will be able to walk freely into a new world where their mental health has been altered for a more fulfilled life, while the researchers are at peace with helping the participants and gathering the outstanding results to be published for the public.

The importance of a clinical trial is where the focal point of the research truly begins. Once you collect the results of the survey, the researchers are given a base-level view of where their participants mental state is, and they can proceed on putting the specific psychedelic drug to

the test. This survey serves as the blueprint for the clinical trial because it sets the tone for the procedure by making sure each participant gets their correct dosage as well as being comfortable within the environment.

In the current study, we predicted that those who had high symptomology of the three mental illnesses examined would be more supportive and accepting of the use of psychedelics for treatment. This hypothesis was partially supported. While no effect was observed for depression, we did find that those who had more anxiety symptoms were *less* likely to refer their friends to use psychedelics for treatment. However, those that had more PTSD symptoms were *more* likely to refer their friends to use psychedelics for treatment. We speculate that the reason for those who had more anxiety symptoms being *less* likely to refer to their friends for the use of psychedelics, but *more* likely to refer psychedelics for those PTSD symptoms is because of the negative history of psychedelics and the effect of how society views the use of these drugs. The history of psychedelics was brought upon to strike fear in society's eyes and tag a negative connotation to the concept. This left those unwilling to refer to their friends who are suffering from a mental illness due to the lack of accurate information on the benefits, and the subconscious fear that was planted in their minds regarding psychedelics as a whole. Another part to this is the societal view on mental illnesses, which is the way individuals prioritize one's mental health.

PTSD is commonly associated with war and veteran; moreover, people view PTSD as more detrimental than anxiety and depression. However, anyone can experience a traumatic event in their life (i.e., witnessing a death, abuse survivor). Furthermore, participants in the current study also stated they would not be likely to take psychedelics to treat their own mental illness. Our findings do deviate from those found by Carhartt-Harris et al. (2016) and Mason and

Kuypers (2018), such that participants in those studies were more likely to engage in the use of psychedelic assisted therapy for their own mental illness. Additionally, participants in these studies were more likely to prescribe themselves with their psychedelic of choice and this resulted in 81% showing massive improvement (Mason & Kuypers, 2018). Participants in the aforementioned studies were older in age, more educated on their mental illnesses, as well as long-term users of psychedelics, which could help explain the high percentage of self-prescribing in their studies and the low agreement of using it themselves in the current study.

When examining whether the severity of one's anxiety, depression, or PTSD had an influence on their perception of psychedelic drugs, only those with severe depression showed a strong relationship with using psychedelic drugs for themselves. Compared to our first hypothesis, those who found depression to be more of an inconvenience in their lives were more open to using psychedelic drugs as treating their own illness. Anxiety and depression showed stronger relationships with the use of psychedelic drugs more than PTSD. Those that have been clinically diagnosed with PTSD or those that know individuals with PTSD all reported a weak relationship in referring the use of psychedelic drugs as well as using psychedelic drugs themselves. We believe that the reason for this comes from lack of accurate information on the drugs itself, the benefits, and a lack of having a safe and calm environment.

Psychedelics are quite potent, which is why micro-dosing is so important because it is controlled and not as intense as it would be if it were given at its full potential (Anderson et al., 2019). These drugs are finally being studied more in-depth, which is bringing more light to the mental health community, as well as the dissemination of more accurate information. Many individuals may not be ready or even willing to deal with the core root of themselves and their mental illness, so the thought of utilizing these drugs for their mental illness may instill more

fear and anxiety into the individual. It could be difficult to refer a high-potency form of drug to someone that you care about deeply suffering from a mental illness, especially with not knowing every piece of information about the drug or qualities within it. This is why the research concerning perceptions of the use of psychedelics is an important first step; we need to know whether individuals would even be willing to utilize them. Specifically, this perception study being paired with the prior research that has been conducted will further shed light on the beginning stages of finding the “why” and “if” of individuals considering psychedelics as potential treatment.

We also wanted to examine whether those who have been diagnosed with each of the disorders would be more accepting to the usage of psychedelic drugs. Those that were diagnosed with PTSD were more likely to accept the use of psychedelic drugs than those who have not been diagnosed with PTSD. In continuation of the prior hypotheses, it leads to our most important finding of examining whether those who were knowledgeable about psychedelic drugs would be more likely to refer to friends to using them as treatment as well as using them as their own treatment. We did find that those who were knowledgeable about psychedelics in a general sense, as well as their benefits with using, were more likely to refer people they knew to use them as treatment as well as for themselves in the form of treatment. Mason and Kuypers (2018), set out to examine the public’s experience with micro-dosing themselves for treatment of their own mental illnesses. It resulted in 21% of respondents reporting positive effects for their depression, 7% for anxiety, 9% for other mental illnesses, and 2% for the decreasing of substance use. 44% reported that by micro-dosing, their mental health showed a strong improvement. In relation to the current study, a prominent finding was made due to individuals knowledgeable about psychedelics being more open to using them for self-treatment and as a

recommendation to others; Mason and Kuypers (2018) shared similar results with having individuals showcasing their interest as well as actions in self-treatment of psychedelic use.

In comparison to these studies, Savage et al. (1966) conducted LSD-assisted psychotherapy involving participants that were experiencing a lack of purpose in their lives. Participants were given a dosage of LSD in a controlled environment and were later asked to complete a self-actualization survey of their well-being. Post-LSD dose, the participants took the self-actualization survey and scored high on the concepts of feeling more connected with their meaning or purpose in life, wholeness in oneself, a boost of confidence, assertiveness, as well as showing a decreased need of material gains and social status (Savage et al., 1966). These results showed a positive change in the participants life for a couple of months post-treatment. Griffiths et al. (2006) and MacLean et al. (2011) both conducted quite similar studies involving administering their participants an effective dose of psilocybin in a supervised and controlled environment. The participants from both studies reported having a deep mystical experience that included an increase in well-being, positive behavioral changes for themselves and others, as well as a sense of unity, transcendence of space and time, and a positive mood. Specifically, in Griffiths et al., with a 14-month follow-up, 58% said the experience was a top-five influential moment, 67% said it was very spiritual, and 64% said it gave them an increase in sense of well-being and life satisfaction (Griffiths et al., 2008).

Limitations and Future Directions

The current study does have limitations that should be discussed. The current study utilized an online research study the sample of this study is both a limitation and a strength because it resulted in a recruitment of individuals from a college campus and online forums, such as Reddit. Recruiting participants from a college campus represented a large community of

a similar age range, of all races, genders, and thought processes. The limitation with this sample size was the authenticity of the feedback, since a few academic professors offered an incentive for completing this research study, which could have resulted in them only participating for extra credit in their course or even lying on the survey. Sampling from an online forum, such as Reddit, had strengths of providing such an overload of willing participants. A limitation here was a being unaware of the individuals taking the survey. Additionally, future researchers may want to incorporate qualitative responses to help better understand participants' responses on why they would or would not recommend the use of psychedelics. Additionally, the current study utilized university students as opposed to community members which could have influenced our results.

The current study provides a starting point for future researchers to examine the acceptance of psychedelic-assisted therapy. The results of the current study suggest that people may be more likely to recommend the use of psychedelics to others than for themselves. As mentioned previously, this could be due to the lack of knowledge about the benefits of psychedelics in helping treat mental health issues.

References

- Anderson, T., Petranker, R., Christopher, A., Rosenbaum, D., Weissman, C., Williams, L. D., Hui, K., & Hapke, E. (2019). Psychedelic micro dosing benefits and challenges: an empirical codebook. *Harm Reduction Journal*, *16*, 43. <https://doi.org/10.1186/s12954-019-0308-4>
- Anxiety and Depression Association of America. (2010). *Medication*, 2010. Retrieved from <https://adaa.org/finding-help/treatment/medication>
- American Psychiatric Association. (2018). Retrieved from <https://www.psychiatry.org/patients-families/what-is-mental-illness>
- American Enterprise Institute. *The shocking story behind Richard Nixon's 'War on Drugs' that targeted blacks and anti-war activists*. Retrieved from <https://www.aei.org/carpe-diem/the-shocking-and-sickening-story-behind-nixons-war-on-drugs-that-targeted-blacks-and-anti-war-activists/>
- Ballenger, J.C. (2001). Overview of different pharmacotherapies for attaining remission in generalized anxiety disorder. *Journal of Clinical Psychiatry*, *62*, 11-19.
- Bell, B. (2017) The Dawn of Psychedelics. Retrieved from <http://massivesci.com/reports/drugs/dawn-of-psychedelics/>
- Carhart-Harris, R.L., Kaleen, M., & Bolstridge, M. (2016). The paradoxical psychological effects of lysergic acid diethylamide (LSD). *Psychological Medicine*, *46*, 1379-1390 <https://doi.org/10.1017/S0033291715002901>
- Carhart-Harris, R.L., Roseman, L., & Bolstridge, M. (2017). Psilocybin for treatment-resistant depression: fMRI-measured brain mechanisms. *Scientific Reports*, *7*, 1-7 <http://dx.doi.org/10.1038/s41598-017-13282-7>

- Carhart-Harris, R.L., Bolstridge, M., Rucker, J., Day, C.M.J., Erritzoe, D., Kaelen, M., Bloomfield, M., Rickard, J.A., Forbes, B., Feilding, A., Taylor, D., Pilling, S., Curran, V.H., & Nutt, D.J. (2016). Psilocybin with psychological support for treatment-resistant depression: an open-label feasibility study. *The Lancet Psychiatry*, 3, 619-627
[https://doi.org/10.1016/S2215-0366\(16\)30065-7](https://doi.org/10.1016/S2215-0366(16)30065-7)
- Carhart-Harris, R.L., & Nutt, D.J. (2010). User perceptions of the benefits and harms of hallucinogenic drug use: A web-based questionnaire study. *Journal of Substance Use*, 15(4): 283-300.
- Carhart-Harris, R.L., & Nutt, D.J. (2013). Experienced drug users assess the relative harms and benefits of drugs: a web-based survey. *Journal of Psychoactive Drugs*, 45(4): 322-328.
<https://doi.org/10.1080/02791072.2013.825034>.
- Doblin, R. (1991). Pahnke's "good Friday experiment": A long-term follow-up and methodological critique. *The Journal of Transpersonal Psychology*, 23(1), 1-28.
- Drug Policy. (2020). *A Brief History of the Drug War*. Retrieved from
<https://drugpolicy.org/issues/brief-history-drug-war>
- Ganguly, P. (2016). *The dawn of psychedelics*. Retrieved from
<http://massivesci.com/reports/drugs/dawn-of-psychedelics/>
- Gasser, P., Holstein, D.H., Michel, Y., Doblin, R., Yazar-Klosinski, B., Passie, T., & Brenneisen, R. (2014). Safety and efficacy of Lysergic Acid Diethylamide-Assisted psychotherapy for anxiety associated with life-threatening diseases. *The Journal of Nervous and Mental Disease*, 202, 513 - 520.

- Gasser, P., Kirchner K, & Passie, T. (2015). LSD-assisted psychotherapy for anxiety associated with a life-threatening disease: a qualitative study of acute and sustained subjective effects. *Journal of Psychopharmacology* 29, 57–68
- Griffiths, R.R., Richards, W.A., McCann, U., & Jesse, R. (2006). Psilocybin can occasion mystical-type experiences having substantial and sustained personal meaning and spiritual significance. *Psychopharmacology*, 187, 268-283.
<https://doi.org/10.1007/s00213-006-0457-5>
- Grob S.C., Danforth, A.L., & Chopra S.G. (2011). Pilot study of psilocybin treatment for anxiety in patients with advanced-stage cancer. *Arch Gen Psychiatry*, 68, 71-78.
- Hollister L.E., & Hartman A.M. (1962). Mescaline, lysergic acid diethylamide and psilocybin comparison of clinical syndromes, effects on color perception and biochemical measures. *Comprehensive Psychiatry* 3, 235–242
- Krebs, T.S, & Johansen P. Ø. (2013). Over 30 million psychedelic users in the United States. <https://doi.org/10.12688/f1000research>. PMID: 24627778; PMCID: PMC391765.
Retrieved from <https://pubmed.ncbi.nlm.nih.gov/24627778/>.
- Mason, N.L, & Kuypers, P.C. (2018). Mental health of a self-selected sample of psychedelic users and self-medication practices with psychedelics. *Journal of Psychedelic Studies* 2, 45-52. <https://doi.org/10.1556/2054.2018.006>
- MacLean, K. A., Johnson, M. W., & Griffiths, R. R. (2011). Mystical experiences occasioned by the hallucinogen psilocybin led to increases in the personality domain of openness. *Journal of psychopharmacology*, 25(11), 1453–1461.
<https://doi.org/10.1177/0269881111420188>

National Institute of Mental Health. (n.d.). *Mental Illness, 2017*. Retrieved from

<https://www.nimh.nih.gov/health/statistics/mental-illness.shtml>

Pahnke, W.N. (1963). *Drugs and mysticism: An analysis of the relationship between psychedelic drugs and the mystical consciousness*. Harvard University.

Preller, K.H., Razi, A., Zeidman, P., Stampfli, P., Friston, K.J., & Vollenweider, F.X. (2016).

Effective connectivity changes in LSD-induced altered states of consciousness in humans. *Proceedings of the National Academy of Sciences of the United States of America*, 7, 2743-2748. <https://doi.org/10.1073/pnas.1815129116>

Pollan, M. (2019). *The Mind Explained: Psychedelics* [Television series]. Netflix

Rickli A., Moning, O.D., Hoener, M.C., & Liechti, M.E. (2016). Receptor interaction profiles of novel psychoactive tryptamines compared with classic hallucinogens. *European Neuropsychopharmacology*, 26, 1327-1337

Rush, A.J., Trivedi, M.H., Ibrahim, H.M.... Keller, M.B. (2003). The 16-item Quick Inventory of Depressive Symptomatology (QIDS), clinician rating (QIDS-C), and self-report (QIDS-SR): A psychometric evaluation in patients with chronic major depression. *Biological Psychiatry* 54, 573–583.

Savage, C., Fadiman, J., & Mogar, R. (1966). The effects of psychedelic (LSD) therapy on values, personality, and behavior. *International Journal of Neuropsychiatry*, 2(3), 241–254.

Sessa, B. (2016). MDMA and PTSD treatment: From novel pathophysiology to innovative therapeutics, *Neuroscience Letters*, 649, 176-180.

Tagliazucchi, E., Roseman, L., Feilding, A., Nutt, D.J., & Carhart-Harris, R. (2016). Increased global functioning connectivity correlates with LSD-induced ego dissolution. *Current Biology* 26, 1043-1050.

The Mayo Clinic. (2019). *Selective serotonin reuptake inhibitors (SSRIs)*, 2019. Retrieved from <https://www.mayoclinic.org/diseases-conditions/depression/in-depth/ssris/art-20044825>

Wolbach, A.B. Jr., Miner, E.J., & Isbell, H. (1962). Comparison of psilocin with psilocybin, mescaline and LSD-25. *Psychopharmacologia*, 3, 219-223.

Table 1

Percentage of participants who have been clinically diagnosed, engaged in therapy, and prescribed psychiatric medication.

	Clinical Diagnosed	Engaged in Therapy	Prescribed Medication
Depression	41.8% (<i>n</i> = 198)	38.2% (<i>n</i> = 181)	36.5% (<i>n</i> = 173)
Anxiety	37.8% (<i>n</i> = 179)	30.0% (<i>n</i> = 142)	30.0% (<i>n</i> = 142)
PTSD	11.0% (<i>n</i> = 52)	10.5% (<i>n</i> = 50)	5.30% (<i>n</i> = 25)

Table 2

Relationships between knowledge and referring psychedelic assisted therapy to self and others.

	Knowledge Psychedelics	Knowledge of Use of Psychedelics	Refer for Depression	Refer for Anxiety	Refer for PTSD	Self-Use for Depression	Self-Use for Anxiety	Self-use for PTSD
Knowledge Psychedelics	1		0.62	0.55	0.52	0.63	0.56	0.44
Knowledge of Use of Psychedelics	-	1	0.64	0.62	0.56	0.61	0.56	0.46
Refer for Depression	-	-	1	0.78	0.79	0.68	0.76	0.58
Refer for Anxiety	-	-	-	1	0.73	0.73	0.63	0.53
Refer for PTSD	-	-	-	-	1	0.62	0.64	0.66
Self-Use for Depression	-	-	-	-	-	1	0.78	0.61
Self-Use for Anxiety	-	-	-	-	-	-	1	0.59
Self-Use for PTSD	-	-	-	-	-	-	-	1

Note. All correlations are significant at $p < .001$.