



Plant Medicine Healing! Discovering the Roots of Psychedelic-Assisted Therapy in Mental Health

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Author's contribution

The sole author designed, analyzed, interpreted and prepared the manuscript.

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ABSTRACT

Roughly over 700 million individuals suffer from a mental illness globally. In the United States alone, over 45 million individuals are afflicted with a mental disorder at any given point in their lives. It is because of this that new methods of current therapies should be considered. To date, major depression disorder (MAD), anxiety, and post-traumatic stress disorder (PTSD) are treated with Selective Serotonin Reuptake Inhibitors (SSRIs). While current treatment shows some effectiveness, there are many negative and unfavorable side effects in addition to effectiveness being short in duration. Currently, researchers have discovered the substantial benefits of utilizing psychedelic drugs under a controlled environment. Research has demonstrated favorable outcomes in the use of psychedelic-assisted psychotherapy (PAP) to treat many of these mental health disorders. PAP is the supervised use of psychedelic drugs such as MDMA, psilocybin, LSD, and Ketamine by psychiatrists to patients as part of psychotherapy. Under supervision, patients ingest a psychedelic drug consisting as part of the psychotherapeutic process. Combined with talk therapy, patients are observed for a therapeutic reaction. The three mental disorders that will be highlighted in this paper include MAD, anxiety, and PTSD. The psychedelic drugs featured in this paper include psilocybin, 3,4-Methylenedioxymethamphetamine (MDMA), ayahuasca, and lysergic

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acid diethylamide (LSD). Naturalistic psychedelic use demonstrates to have astounding and fast results in mental health disorders. A cross-sectional online survey-based study conducted confirms these findings in a cohort of psychedelic users with mental health disorders. The goal of this study is to shed light on the new and alternative treatment modalities to treat mental health illnesses. Psychedelics are the new promise to the field of psychiatry and that spark of promise falls under the umbrella of psychedelic drugs. Psychedelics serve as new tools for curtailing psychotherapy.

Keywords: Psychedelics; mental illness; mental health; assisted therapy; major depressive disorder; anxiety; post-traumatic stress disorder; alternative medicine.

1. INTRODUCTION

In more recent times, there has been a psychedelic renaissance with research indicating that a considerable number of psychedelic compounds possess promising therapeutic effects for many mental health conditions. Once considered dangerous, there has been a steady revival of psychedelic research at the forefront of psychiatry. Not only do they produce sustained therapeutic effects following a single administration, they also appear to have broad therapeutic potential, demonstrating efficacy for treating depression, post-traumatic stress disorder (PTSD), anxiety disorders, substance abuse disorder, and alcohol use disorder, among others [1].

In the 1950s, psychiatrist Humphry Osmond conceived the term psychedelic which translated to mind-manifesting. Collectively, this group of drugs induce alterations in thought, mood, and perception without affecting cognition as other stimulants do. On the other hand, drugs such as barbiturates, benzodiazepines, and ETOH tend to decelerate or accelerate the cognitive process. Psychedelics fall into a broader classification drug class known as psychoplastogens which improve the structural and functional neural plasticity in essential circuits suitable for brain health. Psychedelics are composed of natural and synthetic compounds that include lysergic acid diethylamide (LSD), ayahuasca, psilocybin, and 3,4 methylenedioxymethamphetamine (MDMA) [2].

Plant-based psychedelics have been used for hundreds if not thousands of years for holistic healing and there remains an active culture of self-medication with psychedelics for mental health [4]. While traditional treatment with SSRIs shows some improvements, the side effects and longevity of the treatment are inadequate. Unpleasant side effects include agitation, blurred vision, sexual dysfunction, insomnia, dry mouth, and dizziness to name a few. In addition, there is an increased use of dependency when used

for long periods of time. 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 [5].

In the last 30 years, there has been an uprise in biomedical research investigating psychedelic compounds as curative and therapeutic in the psychiatric world. There is growing evidence demonstrating the therapeutic efficacy of dosing human-grade psychedelic compounds in a controlled and supervised setting. Many countries around the world are leading this field of research including Brazil, Switzerland, Australia, New Zealand, Israel, Spain, Canada, the United Kingdom, and the United States. These countries are at the forefront of this new innovation delivering an abundance of pre-clinical and clinical trials on the use of psychedelic drugs for mental health [6].

Research indicates that naturalistic psychedelic use produces therapeutic mental health benefits through observed clinical trials and survey-based studies. Current research reports from John Hopkins have demonstrated that patients suffering from cancer-related depression and anxiety have had shown relief of their symptoms for up to half a year from a single dose of psychedelic compound. Within the last decade, novel academic and clinical studies have demonstrated that psychedelics when administered under the guidance of psychiatric physicians with psychotherapeutic support, generate extraordinarily fast and outstanding improvements in an array of psychiatric and addictive disorders. Our study encompasses 2,500 participants with psychiatric disorders that are not relieved with SSRIs. Current research demonstrates how psychedelics are becoming tools of healing rather than a threat to the social order. These studies provide convergent support for findings from clinical trials, including that psychedelic use (either lifetime or prospective) is associated with increased emotional well-being and reduced harmful substance use/misuse [7].

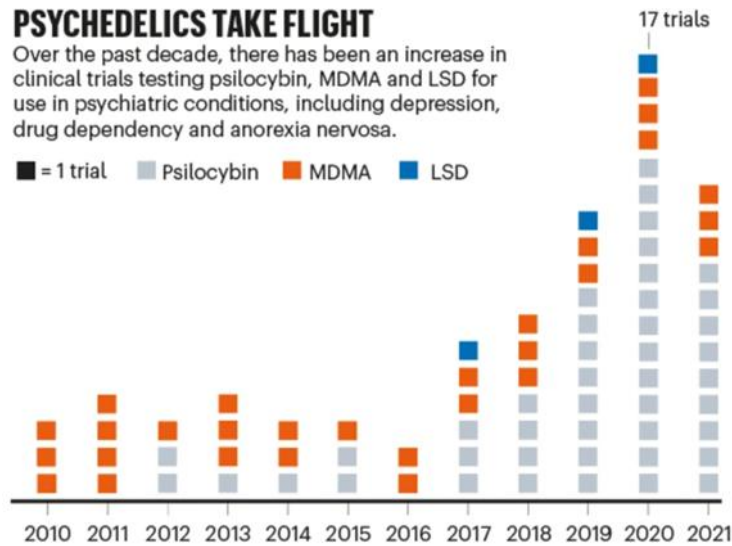


Fig. 1. Psychedelics take flight (Tullis, 2021) [3]

Recent clinical research on the use of psychedelics in mental health is bringing forth compelling outcomes in a multitude of clinical diagnoses when psychedelic-assisted psychotherapy is administered to suitably screened participants under a controlled environment.

1.1 Content of the Problem

According to the American Psychiatric Association, anxiety is a heightened anticipation of future concerns. The most preferred form of treatment for those with anxiety disorder is 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 adverse effects of this drug which can be detrimental [8]. Currently, the use of psychotherapy and cognitive behavioral therapy (CBT) were the only forms of psychotherapeutic treatment for anxiety disorder. Similar to anxiety, major depressive disorder (MAD), has as the primary treatment the use of SSRIs. Just like in anxiety, MAD has its own definitive forms of psychotherapy. These include interpersonal, CBT, mindfulness-based cognitive, and psychodynamic therapy. Post-traumatic Stress Disorder (PTSD) is a mental illness triggered by a specific terrifying event in one's life and has associations with suicide, anxiety, substance use, and depression. PTSD is also currently treated with SSRIs, antipsychotics, and psychotherapy. Eye movement therapy and CBT are the preferred psychotherapy modalities in these individuals but just like in anxiety and

depression, there are still some impairments and thus why psychedelic drugs show promising outcomes when used in individuals with any of these mental illnesses.

1.2 Psychedelics Used in Mental Health

1.2.1 Psilocybin

Psilocybin is the main psychoactive property of the hallucinogenic mushroom. It is a naturally occurring alkaloid, classically similar to lysergic acid diethylamide (LSD). Used under the care of a psychiatrist and in a controlled environment, evidence shows that it does not lead to dependency and works remarkably for depression and anxiety. Recent work demonstrates psilocybin's potential to increase the subjective sense of well-being because of its novel mechanism of 5-HT_{2A} serotonin receptor agonism [9]. Psilocybin's psychopharmacological action is to bind serotonergic 5-HT₂ receptors together. The downregulation of these binding receptors is responsible to have an anti-anxiety and anti-depressant effect on the brain.

1.2.2 MDMA

3,4-Methylenedioxymethamphetamine is a phenethylamine similarly structured as methamphetamine. Its effects are characterized by its unique subjective effects, including euphoria, a feeling of love for others, and a sense of being at peace with the world, while not significantly affecting visual perception or cognition [10]. Its peculiar effects when coupled

with psychotherapy, demonstrate therapeutic outcomes for several psychiatric disorders including PTSD.

1.2.3 Ayahuasca

A decoction with psychoactive properties, ayahuasca is derived in the Amazonian jungles from the bark of the *Banisteriopsis caapi* vine (containing beta-carboline alkaloids) and the leaves of the *Psychotria Viridis* bush (supplying the hallucinogenic N, N-dimethyltryptamine, DMT). Current research indicates the medical use of ayahuasca in the treatment of addictions, depression, and anxiety. A study was performed a small study comparing 15 ayahuasca users versus 15 matched controls as a part of their Hoasca Project. They found that among the ayahuasca users, all alcohol, depressive, and anxiety disorders were remitted after ingesting the plant [11].

1.2.4 LSD

LSD falls under the classical hallucinogenic and psychedelic pharmacological group as psilocybin. Classical hallucinogens are psychoactive substances that are believed to mediate their effects mainly through an agonist activity in the serotonin 2A receptor (5-HT_{2A}). Experimental studies have previously shown that the use of 5-HT_{2A} antagonists attenuates the main effects of these substances [12]. Studies have shown that under the supervision of a psychiatric physician, LSD can reduce anxiety, depression, and psychosomatic diseases and addictions.

2. METHODS

A cross-sectional online survey-based study was conducted using 2,500 adult participants who suffer from mental health illnesses and have used psychedelic drugs as a treatment modality under the care of their physician. Participants were recruited using free online platforms such as social media, email marketing, postcards, and flyers. Using psychedelic-specific hashtags on social media, recruiters enlisted participants to visit their website and answered specific questions such as age and prior use of psychedelic drug use. Those participants who did not meet these specific requirements (under the age of 18 or with no prior use of supervised psychedelic use) were excluded. Those participants that met the specific criteria, were given access to an online consent form that gave

detailed explanations about the study, its purpose, and its design. Other information given to these participants were the ethical standards and risks/benefits. The participants were randomly selected without determination of sex, age, and educational status.

A cross-sectional survey tool called the Psychedelic and Wellness Study (PAWS) was used to obtain the participant's viewpoints on the mental health effects of psychedelic drug use for conditions such as anxiety, depression, PTSD, and substance abuse. The survey was formulated using definitive sections for each mental health disorder surveyed: anxiety, depression, and PTSD. Participants answered the section that was exclusive to them. They would rate their mental well-being before their psychedelic use (with traditional SSRI or psychotherapy), and then would rate their mental well-being after their supervised psychedelic use. Depressive symptoms were evaluated using a 9-item Patient Health Questionnaire. Anxious symptoms were evaluated using a 7-item Generalized Anxiety Disorder Questionnaire. Well-being was evaluated using the HERO Wellness Scale. Additionally, participants answered another series of questions consisting of 26 items called the Psychedelic Change Questionnaire. The goal of this questionnaire was to determine the effect of the psychedelic drug on their well-being.

3. RESULTS AND DISCUSSION

The Patient Health Questionnaire (PHQ-9) consisted of 9 questions and points were assigned to each question ranging from 0 to 27 points. A score of 10 or above demonstrated sensitivity and specificity for MAD. The 7 questions on the Generalized Anxiety Disorder Questionnaire (GAD-7) obtained data on the severity of anxiety. Questions were assigned a value of 1-7 with 1 being feeling calm and 7 being difficulty relaxing. Scores of 10 or greater indicated Generalized Anxiety Disorder. The Hero Wellness Scale consisted of 5 constructs ranging from happiness, resilience, and enthusiasm to well-being. Scores were assigned from 0 to 10 with 0 being not at all and 10 being extremely. The 26 questions on the Psychedelic Change Questionnaire were tailored specifically for this cross-sectional study. The questions were constructed to understand the mental well-being of the participants before psychedelic use and after the administration of psychedelic drugs by their physicians. The information was

collected, and data was transcribed to obtain the results. Reports from the results yielded that the respondents felt that the use of psychedelic drugs had a compelling increase in their emotional and mental well-being. Those that were either depressive, anxious, or suffered from PTSD felt reductions in their anxiety, depression, or experienced fewer flashbacks of traumatic events after the administration of the psychedelics. Based on the self-reports collected, PHQ-9 and GAD-7 scores dropped, and the HERO Wellness increased significantly. These values were representative of their experiences with their mental well-being before and after psychedelic use. Results from the PCQ-26 questionnaire indicated that 91.7% of the 2,500 respondents reported improvements in their emotional and mental well-being after using psychedelic drugs.

4. CONCLUSION

The results of this cross-sectional study indicate that there is a successful interrelationship between past use of supervised and monitored psychedelic drug use and an increase in mental well-being. Therefore, compelling the hypothesis that psychedelic-assisted therapy in mental health is astonishing for the field of psychiatry. The objective of this study was to demonstrate how the use of psychedelic drugs under supervision and a controlled environment is beneficial for anxiety, depression, and PTSD. Based on the cross-sectional study performed, we have concluded that the use of psychedelic drugs for patients with underlying psychiatric disorders is beneficial and has a therapeutic effect. The current drug regimen with SSRIs is not as effective or long-lasting as are psychedelics. With more and more clinical trials taking place globally, especially in the United States, the use of psychedelics in medicine continues to soar to new heights and gain superiority and precedence over traditional SSRIs. Given the immense prevalence of anxiety, depression, PTSD, and substance addiction in society, psychedelics will aid in reducing symptomology. Most clinical trials currently undergoing psychedelic use involve surveys to understand where participants are mentally and emotionally before and after supervised psychedelic drug use. This cross-sectional study was an excellent indicator of the benefits psychedelics has on mental well-being. Psychedelic research is fairly a newer concept in modern medicine and for the purpose of this study, a scoping review was pursued. This paper

ventured into a fascinating topic in the psychiatric field that is exciting and shows many promises.

5. LIMITATIONS AND FUTURE PROSPECT

The main limitation of this cross-sectional study is that the online survey was focused on social media platforms such as Facebook, Instagram, and Tik Tok. The problem with this is that it categorizes participants into one age group for the most part. Future research should consider including qualitative responses in the surveys to help researchers with more in-depth thematic analysis and better understand the mindset of the participants. Additionally, qualitative responses would help in extrapolating any preconceived or biased beliefs the participants may already have. We need to continue identifying those gaps that exist in current psychedelic research and highlight those areas that require further inquiry. We suggest a collaborative approach in which researchers can concentrate on fundamental responses to safeguard that the field of psychiatry will have enough data from clinical trials. Furthermore, we propose that participants in a supervised setting can account for their subjective reactions to the use of psychedelics to aid us in further predicting improvements amid targeted conditions and well-being.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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