Psychedelic-Assisted Therapy: Magical Thinking or a Meaningful Treatment for Mental Illness

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Abstract

Psychedelics are psychoactive substances that are known to alter perception, alter mood, and affect numerous cognitive processes. Throughout history, psychedelics were utilized in ceremonies and rituals, and in the 20th century, their utilization in psychiatry began. In the 1960s they became a banned substance and are only recently being revisited for their benefits. The main forms of psychedelic substances being studied today are Lysergic acid diethylamide (LSD) for addiction therapy, Psilocybin for palliative care, and 3,4-Methylenedioxymethamphetamine (MDMA) for post-traumatic stress disorder (PTSD). This paper focuses on the benefits of utilizing psychedelics for specific psychiatric conditions and is meant to encourage further research into this domain of Psychiatry.

Psychedelics used to be considered as this gateway to connect communities with nature, heal a troubled mind, or even "generate the god within" in some cases[1,2]. They have been utilized in various cultures throughout history for spiritual, medicinal, and religious reasons[1]. Praised in Indian Vedic hymns, incorporated in Greek ceremonies, and given during Mayan religious rituals - there are countless accounts of the usage of psychedelics throughout history[1,2]. Then, from 1960-2000, the perception of psychedelic drugs shifted - it became this extremely toxic substance associated with "scrambling" chromosomes, psychotic breaks, and suicide[2]. Despite initial clinical success, psychedelics were cast as illegal substances with no medicinal use due to their misuse by the public and the political climate at the time[1,3].

Psychedelics, otherwise known as serotonergic hallucinogens, are psychoactive substances that alter perception, alter mood, and affect numerous cognitive processes[1]. Psychedelics are agonists or partial agonists at brain serotonin 5-hydroxytryptamine 2A receptors, with particular importance on those expressed on apical dendrites of neocortical pyramidal cells in layer V of the brain cortex[1]. The main forms of psychedelics seen today are (a) Lysergic acid diethylamide (LSD), a chemically synthesized hallucinogen, developed from ergot, a kind of mold that grows on rye grains[1,2], (b) Dimethyltryptamine (DMT), a natural occurring psychedelic found in the bark and nuts of certain trees from Central and South America[1,2], (c) Mescaline, a naturally occurring psychedelic substance found in certain species of cactus[1,2], (d) Ololiuqui, a naturally occurring psychedelic that is found in the seeds of the morning glory flower[1,2], (e) Psilocybin, a psychedelic substance found in certain fungi, sometimes referred to as magic mushrooms[1,2], and (f) 3,4-Methylenedioxymethamphetamine (MDMA), a chemically synthesized stimulant with mild psychedelic properties that was originally synthesized as a bleeding-control medication[1,2].

Many of these psychedelics continue to be utilized as a part of spiritual practice and some have even been introduced into modern Western medicine[2]. The usage of psychedelics for medicinal use was initially halted in the 1960s after the 'War on Drugs' campaign deemed them as harmful substances illegal for ingestion[2,3]. However, this is a misclassification: unlike other illegal drugs, psychedelics are not addictive substances and can be utilized in therapy for certain psychiatric conditions[1]. The remainder of this paper focuses on the benefits of utilizing psychedelics for specific psychiatric conditions and is meant to encourage further research into this domain of psychiatric care. MDMA, Psilocybin, and LSD are the main psychedelics being researched today for having medical benefits in psychiatric patients[2,3].

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First synthesized in the early 20th century, MDMA may be one of the first psychedelic drugs to be relegalized for clinical usage[3,4]. MDMA's mechanism of action varies from its other psychedelic siblings as it does not target serotonin receptors, rather it works as an amphetamine and influences levels of dopamine and norepinephrine[1]. MDMA can take people to dark, avoidant memories and remove the fear and anger associated with those memories/feelings[3]. This makes it an ideal drug to use in post-traumatic stress disorder (PTSD) and phobias therapy[5]. The gold standard for treating fear-related disorders is extinction-based exposure therapy (ET), a therapy based on exposing the fears/triggers of a person in a safe environment to help them become acclimatized to them, but this is shown to be ineffective for up to 35% of subjects[5]. This prompted some psychiatrists to turn to psychedelics as an addition to ET[5,6,7,8]. By reducing activation in brain regions implicated in the expression of fear and anxiety-related behaviors (e.g., the amygdala), MDMA may allow for the reprocessing of traumatic memories and generate a healthier emotional engagement with therapeutic processes[6]. Many people who have described their experience with MDMA report that it improves their ability to revisit memories and develop an acceptance of their trauma[3]. Veterans who would demonstrate debilitating responses to aspects of daily life would use MDMA and would no longer find these aspects triggering[2]. The data from various studies do suggest that when used in safe clinical settings MDMA can help individuals combat their PTSD and phobias.

It is important to consider therapy as more than just a solution to illness/problem, but instead, as a method to improve the quality of one's life; this is extremely useful for end-of-life care in cancer patients[9]. Of all the psychedelic drugs, psilocybin is reported to have the most favorable safety profile and has been used in studies with cancer patients[9,10]. In 2019, Usona Institute received US Food and Drug Administration "breakthrough therapy" status for using psilocybin in major depressive disorder (MDD), and since then its usage alongside chronic conditions has been examined[10]. Terminal-stage cancer can be a heartbreaking experience for a patient and their family; not being able to accept death can make the final days an extremely painful time[10]. In various randomized studies and follow-up studies of psilocybin usage in cancer patients who experienced anxiety and depression, the usage of psilocybin was considered beneficial[9,11,12]. In one study, at the 6.5-month follow-up, psilocybin was associated with enduring anxiolytic and antidepressant effects and improved patient attitudes toward death[12]. Psychedelics such as psilocybin help break down the defense mechanisms of an individual in a healthy way - this is why it is considered a "cure-all" for mood disorders (anxiety, depression, and obsessive compulsive disorder)[2,10]. One patient stated that psilocybin made them "lose their fear of death" and improved their end-of-life experience[1]. Providing these relieving therapies to patients with cancer is important for their mental health and might represent a valuable addition to palliative care.

A final usage of psychedelics is in addiction therapy. LSD has developed the worst reputation of all the psychedelics in the Western world but over the past few decades, research into microdosing with LSD has begun again[3]. Microdosing is administering small doses of a drug into one's system to test or experience mild effects and benefits while minimizing adverse reactions that might be experienced with higher doses[13]. Like other psychedelics, LSD alters people's perception of the world and increases their openness to try new things[1,13]. In the case of addiction, LSD's alteration of people's perception makes them more malleable and open to letting go of their addictions[1,2]. In a recent paper, subjects willingly took LSD in a non-medical setting and proceeded to quit smoking by claiming that withdrawal effects felt less severe than past attempts[14]. Such a study would have to be replicated in more controlled settings with appropriate dosing of LSD to be more rigorous; however, this study is promising and implies that LSD may be used in other addiction studies. It is an advertised fact that Bill Wilson, the co-founder of Alcoholics Anonymous, claimed that he was able to combat his addiction to alcohol after he used LSD[15]. He came to believe that LSD could help "cynical alcoholics" achieve a "spiritual awakening" and start on the path to recovery[15]. Thus, further investigation of microdosing with LSD as a treatment for persistent addictions is needed.

Despite all its clinical success, the usage of psychedelics can sometimes have adverse effects. When used in an unsupervised environment there have been reports that people feel like they can fly or can jump off buildings with no consequences[2]. Reports of peyote have been indicated to cause tachycardia and psychosis with threatening hallucinations[1]. High doses of psilocybin have been involved with vascular problems

and rhabdomyolysis[1]. Rhabdomyolysis has been further reported with high doses of LSD[1]. Rare cases of fatal overdoses have occurred with the psychedelic phenethylamine 2,5-dimethoxy-4-bromoamphetamine in the past[1]. Cases of addiction have been mentioned in the sense that people enjoy the level of spiritual elevation they achieve while on these substances, but no accounts of true dependence or addiction have been mentioned[1,2,3]. Other instances of injuries with psychedelic usage are extremely rare[1]. They are one of the safest known classes of CNS drugs as they do not cause addiction, and, importantly, no cases of fatalities have occurred after ingestion of typical doses of LSD, psilocybin, or mescaline[1].

As a future medical practitioner, I believe that the usage of psychedelics in psychiatric therapy should be encouraged. Psychedelics are useful for many therapies as they create a sense of openness in people, which helps them accept feelings and come to terms with past traumatic experiences. Psychedelic usage may be an extremely beneficial therapy for psychiatric patients who do not show improvement with standard psychiatric care or treatments. LSD, Psilocybin, and MDMA are currently being researched as therapeutic aids in several regions of the world and Ireland should be involved as well. Psychedelics are the future of psychiatry, and we must begin their legalization process for medicinal usage.

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