

Reviewing the Therapeutic Benefits of Psychedelic Drugs

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Received: October 20, 2017; Published: November 01, 2017

Healing with hallucinogens has already begun. Surprised? Actually, investigations with controlled clinical studies into the value of medicinal therapeutic benefits from true “tripping” psychedelics (LSD, psilocybin, mescaline and ayahuasca) began with earnest in 2010. These studies were instituted to evaluate the way in which these drugs could alter the “*present circumstance*” for patients with depression, addiction (alcoholism, heroin, cocaine and smoking), schizophrenia and anxiety in terminal cancer patients. Today, worldwide interest has occurred with psilocybin being the predominant used psychedelic medicinal although lysergic acid diethylamide (LSD) appears to have similar effects.

For the patients in these studies the main adjustment through therapy is the establishment of a “*being here*” environment which eliminated the “*being before*” of past issues or “*being ahead*” regarding the future which may impact their lives. While on psychedelic drugs, people commonly experience ego dissolution (ego death), a loss of the sense of a separate self and an enhanced feeling of connectedness with the outside world. Recent neuroimaging studies have revealed that the intensity of this experience correlates with changes in brain activity as part of a default mode network (DMN) salience system in the brain that is more active at rest than during tasks. It is thought that this system is involved in, among other things, processing information related to the self. The brain or the mind during psychedelic states is in a different state of consciousness and this is reflected in how the brain behaves [1].

Using depression as an example for targeted therapy, healthcare practitioners know paranoia can strike deep. Into any life it will creep and often starts when one is afraid. Most researchers believe that the profound experiences individuals have during a trip (clinical session) is key to the drug therapeutic effect(s). It is known psychedelic drugs disrupt established networks in the brain, potentially allowing new connections to form. Individuals who allow themselves to step out of their current life and become involved through therapy with an “*in the present*” other world experience can advance forward through a sort of “reverse PTSD” (post-traumatic stress disorder). During the trip (clinical session) a major discrete event occurs that produces some alteration in neurology and perception that allows psychological dysregulation to go forward and to which people attribute positive changes that endure into the future [2].

Several neuroimaging technologies are now being used to understand the “how” and “why” of the positive psychedelic effects. One technology, fMRI or functional magnetic resonance imaging, is being used to scan the brains of healthy individuals while being treated with psychedelics. This technique can measure reduced cerebral blood flow (a proxy measure of neural activity). Another technology known as MEG or magnetoencephalography detects tiny magnetic fields generated by the electrical activity in the brain during the trip (clinical session). These approaches have revealed a correlation between decreased connectivity in the DMN (default mode network) of the brain and the subjective ratings of ego dissolution or ego death [3].

As all of the classic psychedelic drugs activate serotonin 2A (5-HT_{2A}) receptors, which play a key role in the psychedelic drug effect, more recent work has revealed that these drugs can also promote neuroplasticity (the ability to form new neuronal connections in the brain) and reduce inflammation throughout the entire body. If someone has, for example, neuro-inflammation which is causing depression, the use of the drug DOI (an amphetamine derivative psychedelic and serotonin 2A receptor agonist) causes the body to promote

the transcription of pro-inflammatory genes to reduce the inflammation [4]. With the awareness that inflammation (mediated by inflammatory agents or cytokines) is involved in neurodegenerative diseases (like Alzheimer's)... and attenuation of the neuro-inflammation is effected...it could help slow the progression of the disease [5].

Today through studies at leading worldwide psychiatric research centers, the usefulness of this awareness of "*being in the present*" through appropriate psychedelic medication approaches can lead to patient therapeutic benefit. Importantly, these medication approaches should only be completed with the guidance of specialized psychiatric physicians, healthcare professionals and the support of specialty pharmacists.

For many individuals involved in these controlled clinical studies, the therapeutic advances they experience are similar to being in a paradise with salvation...even though the disease challenge is always near.

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Volume 5 Issue 1 November 2017

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