

Lysergic acid diethylamide (Lsd) research paper

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Introduction

Lysergic acid diethylamide or LSD refers to a semisynthetic psychedelic drug belonging to the ergoline family. The drug is well known for the psychological effect. These psychological effects include altered thinking, synesthesia, closed- and open-eye visuals, a changed sense of spiritual experiences, as well as time. The drug is used as a recreational drug, an entheogen, or as a psychedelic therapy agent. LSD is not known to cause addiction or damage to the brain and has a very low toxicity when compared to the dose administered (Lüscher and Ungless).

History

The first synthesis of LSD was conducted in 1938 by a Swiss chemist known as Albert Hofmann. The synthesis was done at the Sandoz Laboratories that are in Basel, Switzerland. The psychedelic properties of LSD were discovered later by Hofmann who accidentally swallowed unknown amount of the chemical (Nichols). In 1943, Hofmann became the first person to ingest LSD intentionally at a dose of 250µg of LSD. The dose was assumed to be the threshold dose according to the dosages that are used for the other ergot alkaloids. The effect was, however, much stronger than Hofmann had anticipated. LSD as an ergoline derivative is synthesized through a reaction between diethylamine and lysergic acid in its activated form. Some of the activating agents are phosphoryl chloride, as well as peptide coupling reagents (Abraham and Duffy; Nichols, Frescas and Marona-Lewicka).

Therapeutic Use

There are several uses of LSD. These uses range from psychotherapy, anxiety, alcoholism, and pain relief. In psychology, LSD has been used to heighten psychotherapy since some psychiatrists have held a belief that LSD has a role in unblocking the repressed the subconscious material using other methods of psychotherapy. It is thus argued that the therapeutic value of LSD lies on the potential for the drug to produce self-surrender and self-acceptance. This is presumed to occur by forcing the patient to encounter the issues and problems they are going through.

LSD has been used to alleviate anxiety in patients with terminal illnesses such as cancer to help them cope with the impending death. Recent research has shown that the drug has promising results with no reports of negative effects (Brown). LSD has also been used to treat alcoholism. The drug achieves this by reducing the extent of alcohol misuse in most people who receive the drug. A single dose of LSD in combination with other alcoholism treatment programs has been linked to a reduced alcohol abuse that may last for several months (Krebs and Johansen).

Studies on the effectiveness of LSD as analgesia have shown positive results in the management of chronic pain resulting from cancer or other traumas. Even low dosages have been reported to have similar activity as the traditional opiates and are last long in reduction of pain. The long term activity has been attributed to the reduction in anxiety. The drug has also been used in the treatment of cluster headaches, which is an uncommon and extremely painful disorder. Treatment of cluster headache has been shown to offer beneficial benefits to the patient (Sewell, Halpern and Pope).

LSD has the capability of catalyzing intense spiritual experiences and is thus considered an entheogen. Taking the drug makes the users feel as if they are into contact with a higher spiritual order. Other users have reported insights into the manner in which mind works with some users experiencing permanent shifts in the way they view life. LSD has also enabled other users to view their life introspectively while others have reported that LSD has enabled them to resolve feelings that are either negative or unresolved towards themselves or those incidents that took place in the past. Other area where LSD is used is in the area of creativity (Sessa).

Side Effects

LSD is well tolerated physiologically, and there have been no reports of long-lasting effects on the brain or other body parts. There have been no reports of human deaths as a result of LSD overdose (Passie, Halpern and Stichtenoth). There are, however, chances that LSD may impair the ability to arrive at a sensible judgment, as well as in understanding dangers that are common. This makes those who use the drug to be more susceptible to personal injury and accidents. The drug may also lead to temporal confusion, difficulties in thinking or impaired attention and memory. There are other indications that LSD may trigger to a state of dissociative fugue in people who take some classes of antidepressants like tricyclics and lithium salts. There are other cases where LSD has been shown to trigger panic attacks with people with depression and schizophrenia being at a higher risk (Matt). The users of LSD may also experience hallucinations and other psychosis-like reactions. In some cases, the psychosis-like reactions are short lived while other cases are chronic. Surveying researchers have estimated that the

prevalence of psychosis that are induced by LSD stay for more than 48 hours after LSD administration. Use of LSD has not been associated with any case of death to those who have used the drug. Most of the deaths that have been reported result from behavioral toxicity. Other effects include self aggression, suicidal ideation, rapid aging perception, fear of becoming insane and profound depression (Rega). Although the drug seems to have numerous benefits in their therapeutic use, the side effects associated with its use makes it an unsafe drug for use.

Extent of Usage

According to the National Survey on Drug Use and Health or NHSDA, it is estimated that about 6.4 percent of the people of ages between 18 and 25 years old in 2010. This was down from 15.9% that was recorded in 2002. On average, percentage of people using LSD in 2010 was 0.6 percent. In the survey, NHSDA indicated that about 71.5% of youth aged between 12 and 17 years perceived a high risk in the use of LSD at least once a week. The availability of the drug has, however, decreased gradually (SAMHSA).

In conclusion, LSD is a useful drug in the management of various conditions including anxiety, alcoholism, pain relief, as well as psychological and spiritual conditions. On the other hand, the drug may result in toxicity that is associated with numerous symptoms such as panic reactions, self aggression, depression, suicidal ideations among others in the case of psychomimetic symptoms. In addition, LSD toxicity may result to somatic symptoms such as hypertension, mydriasis, tachycardia, sweating and diarrhea among others. The drug is not addictive and has no long term effects on brain function.

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