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## **THE EFFECTS OF ETHNOBOTANICAL DRUGS ON HUMAN BODY**

### **Abstract:**

Etnobotany is a branch of etnobiology which studies the interrelations between man and his environment, including the hallucinogenic effects of plants. Consumption is particularly widespread through adolescents. Even if they are considered to be "light drugs", ethnobotanical plants have disastrous and unpredictable effects and can damage/ affect the body in various ways. These effects are divided into three categories: immediate, chronic and overdose. In the short term, the person who used these products may experience different physical and psychic effects. Ethnobotanical consumption is more dangerous than drug usage because the effects these products may have in the long term are not exactly known and therefore the doctors don't know what treatment can be administered. In Romania, according to the law, some of these drugs are prohibited but some producers and distributors sell them under the pretext of their use in agriculture or veterinary medicine.

### **Keywords:**

Consumption, drugs, ethnobotanical drugs, forbidden substances, effects

**JEL Classification:** K14, K39

## Introduction

Recent years have witnessed a proliferation of new psychoactive substances becoming available in Europe. Some of these substances will find their way onto the market, packaged and promoted as "natural" or "legal" products, in specialised physical and online shops.

The emergence of several new substances with uncontrolled psychoactive properties represents a serious problem for current models of drug control.

Ethnobotany is an ethnological science with a fairly long tradition in Romania, if we take into account the information collections about the spontaneous and cultivated flora in the area, beginning with 1879.

*DEX – The Romanian language dictionary defines the term as the study of plant names; a branch of ethnobiology which studies reciprocal relations between the man and the plant environment.*

Ethobotanical drugs are a mixture of powders or dried herbs sprayed with various chemicals. In their composition traces of amphetamines, methamphetamines, cocaine, heroin, mephedrone, synthetic cannabinoids can be found. The proportion of these plants differs from one package to another, so some consumers are likely to consume harmful or impure substances and mixtures or to overdose.

Today, active principles of plants, traditionally processed and used since the dawn of mankind in therapy or in magical rites, in religious ceremonies or just to induce organic satisfaction can be chemically synthesized with much stronger and more dangerous effects than the original plants from which they were extracted (Stoian, 2013, p. 156).

To mask the addition of synthetic chemical, the manufacturers supplement the mixture with a large amount of substances which pose no risk, such as E vitamin caffeine or menthol. Also, some of the mixtures may have even residues of heavy metals and hazardous to the body.

The variety and number of synthetic cannabinoids or other substances that may be added to herbal products presents new challenges in terms of identifying, monitoring and risk analysis. There is little evidence about pharmacological profile and toxicological safety of these compounds in humans (Tone, 2009, p. 17).

A psychoactive substance is a chemical substance which penetrates the blood-brain barrier and acts primarily upon the central nervous system affecting the brain functions, resulting in alterations in perception, mood, consciousness, knowledge and behavior (Costache and Stoian, 2014, p. 172).

The terminology approved by the Member States of the European Union for products sold through "businesses for dreams" or "spice shop" is that "new substances with psychoactive properties". These are available either in pure state or in combinations.

Council Decision 2005/387/JHA of 10 May 2005 on the information exchange, risk-assessment and control of new psychoactive substances, defines in article 3:

- "*new psychoactive substance*" (NSP) means a new narcotic drug or a new psychotropic drug in pure form or in a preparation;
- "*new narcotic drug*" means a substance in pure form or in a preparation, that has not been scheduled under the 1961 United Nations Single Convention on Narcotic Drugs, and that may pose a threat to public health comparable to the substances listed in Schedule I, II or IV;
- "*new psychotropic drug*" means a substance in pure form or in a preparation that has not been scheduled under the 1971 United Nations Convention on Psychotropic Substances, and that may pose a threat to public health comparable to the substances listed in Schedule I, II, III or IV.

Ethnobotanical drugs are smoked in special tubes or in the form of cigars. Their use can be addictive both physical and mental, from the very first administration especially in the case of substances containing methamphetamines.

## **Plants and substances with psychoactive properties banned in Romania**

Taking into account the danger of the consumption of certain plants and substances to the public health because of their risk of abuse or poisoning, the large number of people attending the hospital following consumption of such plants and substances, as the number of businesses selling these plants and substances grows alarmingly and considering the fact that any delay caused by passing of the ordinary legislative procedure may affect the health or life of a large number of people, especially young people, the Government of Romania has adopted two regulations in 2010 that modified Law No. 143/2000 on preventing and combating trafficking of illegal drug consumption, published in the Official Gazette of Romania, part I, no. 362 from August 3, 2000, with subsequent modifications. Thus, The tables in the Annexes referring to Law No. 143/2000 were completed with the plants and substances under national control, of which we list:

- JWH-018 = Naftalen-1-il-(1-pentilindol-3-il) metanone
- Oripavine
- BZP (benzylpiperazine)
- Species of the genus *Psilocybe*
- CPP - clorfenilpiperazine
- CP 47,497-C9 = 2- (3-hydroxycyclohexyl) -5- (2-metidecan-2-yl) phenol
- 4-methylmethcathinone (mephedrone)

- Fluorometcatinona (flefedrone)
- 4-methoxy-metcatinona (metedrone)
- TEMPP - trifluormetafenilpiperazine
- DOC (2,5-dimethoxy-4-cloroamfetamine)
- Two (2,5-dimethoxy-4-iodoamfetamine)
- Indanylamphetamine
- B-keto-MDMA (metilona) and  $\beta$ -keto-MBDB (Abutilon)
- Bromo-Dragonfly
- Lysergic Acid Amide
- Ketamine
- Amyl nitrite
- *Argyreia nervosa* (Burm.f) Bojer
- Ibotenic
- *Amanita muscaria* (L: Fr.) Lam.
- Gamma-butyrolactone (GBL)
- 7-hydroxy-Mitragyna
- Ibogaine
- Mitragyna
- *Mitragyna speciosa* Korth (Kratom)
- Muscimol
- *Nymphaea caerulea* Sav.
- *Rivea corymbosa* (L.) Hallier f.
- Salvinorin A-F
- *Salvia divinorum*
- *Tabernanthe iboga* (L.) Nutt.

Much of the work of forensic laboratories is dedicated to the analysis of drug abuse. Narcotic drugs hold an important share of this category, along with hallucinogenic substances. Detailed chemical analysis of samples of drugs allow the measurement of relative concentrations of the ingredients (major, minor or trace), so that complex chemical profiles can be obtained with the appropriate analytical procedures.

## Effects of NSP consumption

The reasons why a young man starts taking drugs are various and multiple. Some are doing it out of curiosity or out of the wish to test a new product, some simply boast on it, some other because they are on the brim of despair.

The Internet has emerged as a new market for psychoactive substances, putting at the disposal of retailers the possibility to sell alternatives to controlled drugs.

NSP consumption can have important implications for health and public policy, and monitoring emerging trends is a considerable challenge. New patterns of drug use are difficult to detect, because, typically, they occur for the first time at low levels and in specific localities or in small population subgroups (EMCDDA, 2008).

Consumers of these substances have been frequently hospitalized with severe poisoning. At the same time there have been unexplained suicides associated with the consumption of synthetic cannabinoid-spice, and substances such as 4-methylmetcatinona (mefedrona), metilendioxiptovalerona (MDPV) and 4-metilamfetamina (4-MA) have been associated with cases of death.

Ethobotanical drugs are smoked in special pipes or cigars and they can develop physical or mental dependence from the very first administration which is sometimes fatal.

The type and quantity of synthetic cannabinoid added to some natural products may vary considerably, and some of these compounds may be heavily active in even small doses. As a result, accidental overdose with a risk of severe complications or other psychiatric disorders cannot be ignored (EMCDDA, 2010).

NSP effects are similar to those produced by psychotropic substances, particularly affecting the brain.

The consequences of consumption are concretized in:

- confusion;
- hallucinations;
- diminished attention.

All of which are combined with side effects such as:

- headaches;
- anxiety;
- dizziness;
- panic attacks;
- increased heart rate;
- increased blood pressure;
- increased body temperature.

Although numerous hospitalizations and deaths were attributed to these substances in the Member States of the European Union, their effects on health were not often tested, proving the need for a comprehensive approach to respond to this phenomenon.

Signs of NSP abuse are similar to those of addiction to alcohol or drugs, namely Behavioral Changes:

- isolation from family, defensive attitude regarding drug use
- weight loss/gain;
- changes of appearance and in hygiene;
- confusion, lack of guidance;
- paranoia;
- sleep related disorders: insomnia, anxiety, nightmares;
- stealing money from family members;
- law school/ work performance;
- the deterioration of social relations-lack of interest in old friends and activities.

Lack of information on the chemical composition, the source of ingredients and possibly dangerous substances used in drugs manufacturing aggravate the assessment for health and toxicity levels. Some drugs are combined with alcohol and other illegal drugs causing dangerous side effects and more.

NSP consumption can have serious side effects such as: physical and mental Addiction;behaviour changes; sleeping disorder; Psychotic behavior; Hyperthermia (persons are very hot); Seizures; Heart attack; High blood pressure; Serious respiratory problems; Coma and even death.

NSP are produced in clandestine labs, so the ingredients may vary greatly. So it is impossible to know exactly what effects have and what ingredients they contain. Withdrawal symptoms include: insomnia, anxiety, tremor, sweat, physical addiction.

This new situation, particularly the consumption of psychoactive substances with new properties represent a challenge not only for national structures empowered to suppress drug trafficking, but also for the experts and specialists of forensic laboratories of physico-chemical analysis, who are expected to provide a rapid and appropriate response in order to identify new drug combinations which are emerging on the market because of the ingenuity of the producers after 2000.

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