

## STUDY ON THE RATE OF CONSUMPTION OF NEW PSYCHOACTIVE SUBSTANCES

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### **Abstract**

*Immediately after the appearance on the market of new psychoactive substances (NPS), also appeared the effects caused by the their consumption - severe intoxication, suicides and even deaths- especially among young people. Thus, after being sold illegally for approximately 2 years in Romania, since 2010 a series of legislative measures to impose national controls were implemented consecutively by the Romanian Government. These restrictive measures, determined the appearance of new substances on the market, that come out of the subject of the law and their number is growing, at an European level 101 new substances being reported, only in the year 2014. The objective this research consists in determining the rate of consumption of psychoactive substances among young people, of configuring a consumer profile and assess people's knowledge regarding this type of substances. A total of 573 people responded online or directly, voluntarily, to a questionnaire composed of 14 questions. Data were statistically analyzed and were correlated with the cases of intoxication with ethnobotanical substances that reached the Emergency Room of the County Hospital in Oradea in the period January-June 2015.*

**Key words:** new psychoactive substances, Ethnobotanicals, legal drugs

### **INTRODUCTION**

New substances with psychoactive properties, marketed under the improper name of "ethno botanicals" are in a continuous development and are found in the form of mixtures of powders or dried herbs with psychogenic properties or psychotropic substances, which are sprayed with various chemicals such as synthetic cannabinoids or synthetic stimulants with similar properties to amphetamines (amphetamine type stimulants or ATS) (Jerry J., et al, 2012, Botescu A., 2011).

Their use has recently been discovered in Romania, since 2008 and has experienced a rapid growth and diversification in the coming years, with declines and recoveries resulting from changes to legislation and control measures (Vasile R.D, et al., 2013). For about two years these substances were sold legally and the consumption of "ethno botanicals" has become extremely widespread after an intensive mediatization of the cases that have reached the hospitals, public information about 'legal drugs' and the conviction that, because they are not illegal, they are not addictive and are safer than other medicines (Iorga M. et al., 2012, Vardakou I et al, 2010).

These substances, meant to imitate the effects of controlled drugs are available in Europe in a growing number, in recent years being recorded the appearance of new synthetic agonists of cannabinoid receptors, phenethylamine and cathinones. According to European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), only in 2014, was reported a total of 101 new substances, the total number of substances monitored by this institution exceeding the number 450 (EMCDDA, 2015) .

After being subjected to control measures most new psychoactive substances tend to be replaced, which represents a special challenge for the intervention measures in this field (OEDT, 2013, EMCDDA, 2009).

Because of the continuous appearance of new substances on the market, experts are obliged to regularly examine hallucinogenic substances and put them on lists to ban their sale.

The use of SNPP is often linked to health problems. The users of this type of substances were frequently hospitalized with severe intoxications. There were also a number of unexplained suicides, that were preceded by the use of synthetic cannabinoids (Spice). In addition, substances like 4-methylmethcathinone (mephedrone), metilendioxirovalerona (MDPV), and 4-methylamphetamine (4-MA) have been associated with deaths (Vandrey R., et al, 2013, Prosser J.M et al, 2012, Uivarosan D., et al., 2014).

SNPP are obtained based on mixtures of chemicals and pharmacological products in unknown concentrations, by unauthorized units. Due to the clandestine nature of their production, it is often difficult to specify the psychoactive ingredients responsible for toxicity. For this reason, there is a lack of information on the effects they produce on the organism and the reactions that these substances are causing when consumed with other substances such as alcohol, medicines or illegal drugs than from cases in which consumers have reached the emergency units (Vandrey R., et al, 2013; Mas-Morey P.et al, 2013, Bungău S., et al., 2015).

Currently, analytical methods used for identification / detection of such substances require high-performance technological equipment that is not available to the majority of healthcare professionals, prompting the need to establish a treatment with limited information. Considering that new substances are continually placed on the market, the development of technologies capable to detect quickly and accurately synthetic drugs is a significant challenge and a barrier for effective clinical management.

Doctors must learn to recognize physiological and behavioral effects of the varieties of new substances entering the market in order to determine an appropriate treatment (Vandrey R., et al, 2013; Moran C.L et al, 2011, Mas-Morey P.et al, 2013).

## MATERIAL AND METHOD

A total of 573 people responded online or directly, voluntarily, to a questionnaire composed of 14 questions, developed in order to determine the rate of consumption of ethno botanical substances among young population, to configure a profile of the consumer and to assess people's knowledge about these substances.

Data were statistically analyzed and were correlated with cases of ethno botanical intoxications that reached the Emergency Room of the County Hospital in Oradea in the period January-June 2015.

## RESULTS AND DISCUSSIONS

The distribution by sex determined a Male / Female ratio of about 3: 1, indicating a greater willingness of females to complete the questionnaire. The age of the persons participating in the study was between 14 and 35 years; 85, 34% were from the category of 18-30 years and 7.33 were minors. The provenance was predominantly urban (76.96 vs.23.04) and in terms of occupation, 83% of respondents were students and only 17% had another profession (table 1).

Table 1

Characteristics	Number	%
Sex (Female/Male)	426/147	74.35/25.65
Average of age (<18 ani/≥18 ani)	42/531	7.33/ 92.67
Environment (Urban/Rural)	441/132	76.96/23.04%
Occupation (elevi sau studenti/altă profesie)	476/97	83.07/16.93

To appreciate the level of knowledge about ethno botanical substances and to find out what do young people think and what do they know - consumers or not - about these substances they answered questions from Table 2.

Table 2

Question	Answers	
	No.	%
1. Where did you hear about these psychoactive substances known as "ethno botanicals"?		
• From friends	150	26.18
• From the Internet	132	23.03
• From the television	276	48,17
• From the pubs / bars that I attend	15	2,62
• From a party that I attended	0	
2. Do you know the effect of these substances?		
1. No	39	6,81
2. In a small extent	102	17,80

3. Yes, but not totally	375	65,44
4. Yes, I know them entirely	57	9.95
3. Do you know people who have consumed such substances?		
Yes	375	65,45
No	198	34,55
4. Do you have people in your entourage who frequently consume ethno botanicals?		
Yes	468	81,7
No	105	18,3
5. Have you noticed or heard about behavioral changes in the case of people who consumed / consume such substances?		
Yes	438	76.44
No	135	23.56

As it can be observed, the best source of information on this topic in the case of the persons we surveyed is the television with a percentage of 48.2% after which follows the entourage and friends with a percentage of 26.2% and at a very small difference is followed by Internet with 23%. A small number of persons, 2.6% said that they found out from pubs, bars that they use to frequent. Concerning the effects caused by the consumption of these substances it is found that a large number of respondents are aware of the effects caused by the consumption of these substances, only 6.81% said that they did not know these effects. An overwhelmingly high number, 65.44% of the respondents stated that they know people who consume ethno botanicals and only 18.3% said that they have people consuming in their immediate entourage. In most of the cases consumers present behavior changes towards family, friends, and generally to all persons surrounding them. Of the 573 people who completed the questionnaire, 76.44% are aware of the behavior of the consumer of SNPP.

To assess the rate of consumption, characteristics of the consumer and the reasons that determine consumption, it was answered to the questions contained in Table 4

*Table 4*

Consumption rate and consumers characteristics

Question	Answers	
	No	%
6. Have you consumed "ethno botanicals"?		
Yes	135	23,56
No	438	76,44
7. If you have consumed, what was the reason that determined you to do this?		
1. Curiosity	78	57.78
2. Somebody offered me	12	8.89
3. Friends convinced me	18	13.33
4. I wanted to try new sensations	15	11,11
5. From boredom	12	8,89

6. In order to have fun	0	0
7. It's something normal, everyone my age does it	0	0
8. How often did you consume / are you consuming "ethno botanicals"?	9	6.67
1. Very often, multiple times a week	3	2.22
2. Often, almost weekly	27	20.00
3. Only when partying	21	15.55
4. When I am indisposed / upset	24	17.78
5. Rarely, once a year	51	37.78
6. It was a unique experience		
9. Under what form of did you consume are you consuming this type of substances?	69	51.11
1. Cigarette	15	11.11
2. Powder	51	37.78
3. Both		
10. Where do you use / did you use to consume?	45	33.33
1. Home	21	15.56
2. In pubs / bars / clubs	6	4.44
3. At school / college	63	46.67
4. Anywhere, but with your friends		
11. Do you think that they cause /can cause addiction these psychoactive substances?		
Yes	105	77.78
No	30	22.22
12. How harmful do you think they are for the organism?	85	62.96
1. Very harmful	50	37.04
2. In a certain measure	0	0
3. At all	0	0
4. There are not harmful	0	0
5. Do not know	0	0
What sensations did you have after consuming "ethno botanicals"? How did you feel?		
. Do you want to add something / anything to tell us about this subject?		

23.56% of the participants consumed "ethno botanicals" at least once, their ages being comprised in the range 14-23 years. More than half of the consumers, respectively 57.78% said that "Curiosity" - was the determining reason for consumption. Of the 23.56% who said they were consumers, 8.90% said "It was a unique experience", 4.19% reported having consumed/ consuming "Rarely, once a year", 3.66% stated that they consumed / consuming "Only when partying" 4.71% consume / consumed "When they are upset / indisposed" only 1.57% chose the answer "Very often, multiple times a week" and 0.52% who consume / consumed "often almost every week." The results are similar to other studies that assessed consumption of ethno botanicals among students or young people (Iorga M. et al, 2014).

Most of the consumers prefer to consume these substances together with friends regardless of place, resulting in major entourage influence on youth. It is observed that the second as a favorite place of consumption, is "home".

As a form of administration of the ethno botanical products, most prefer cigarettes 51.11%, a large number consume cigarettes and powders, 37.78%, and only 11.11% powders.

Although they are consuming, or have consumed SNPP, we can see that people consuming are largely aware of their negative effects on human organism; 62.96% think that they are very harmful and 77.78% consider that they are addictive.

From the stories of the consumers, it is observed that they had various symptoms and effects characteristic of drug use: *"I felt a maximum euphoria, I felt I could do everything I want, but I was sick afterwards"* *"That I am melting, I'm happy, I want to fly, that I am strong"* *"sleepiness, headache, euphoric mood"* *"I had fun"*; *"A state of drowsy, then I fell asleep!"* *"Lazy, sleepy"*; *"Relaxed, I forgot all"*; *"High"*; *"Cool"*; *"Euphoric"*.

A final point in the questionnaire was the section where those who have completed had the opportunity to add more, forward views on this subject. We selected some of it and we attached it below: *"Checking websites that may sell these drugs under another name more or less harmless and even "attractive". Prison sentence for those selling. Psychological support and rehab in medical centers for consumers "*; *"Do a public information campaign on psychoactive substances. Fight your little with windmills to feel that you can make a difference. As statistics they are enough. There is no standardized information accessible and capable persons to present it from an objective point of view to the consumer / potential consumer "*; *I consider that there is not sufficient awareness of young people about the true dangers posed by the consumption of such substances "*; *"Who received a good education neither from curiosity never attempts. That's my personal opinion. Thank you"*; *"We should organize more information actions / support groups;"* *"The more campaigns you do more, the more the world becomes more curious to try them. A curious and sick world, all consuming either hard drug, ethno botanicals, cigarettes, alcohol"*; *"Chemical combinations, technical, etc. of production are endless!!!"*

In the period 01.01.2015-30.06 2015, in the Emergency Room from the Oradea County Hospital, there were in total 34 cases of intoxications with psychoactive substances, 23 of which were determined by the consumption of ethno botanicals (table 4).

Table 4

Ethno botanical intoxication cases registered at UPU Oradea		
Consumed substances	The age range	No.
Substance consumption "ethno botanicals"	14 -24 years	17
Combination of "ethno botanicals" with alcoholic beverages	15 -17 years	3
Combinations of "ethno botanicals" with Pharmaceutical substances	27 - 33 years	3

Only some patients have said what "ethno botanicals" they used: 2 people have used "CRYSTAL" powdered sniffing it; 3 people consumed "Spice" in the form of cigarette; 1 person has consumed "magic" in powder form; 11 people did not say the product name.

A smaller number of cases were hospitalized due to the consumption of "ethno botanicals" in combination with alcohol. Very worrying is that these cases were represented by minors.

Another category of patients were hospitalized due to the consumption of "ethnobotanicals" in combination with pharmaceuticals, aged between 27 and 33 years. As pharmaceutical substances combined with "ethno botanicals" were Tramadol, an analgesic of the opiates class and medicines of the Benzodiazepine class.

## CONCLUSIONS

SNPP consumption is still widespread, especially among youth people, 14-24 years;

23.56% of the study participants consumed at least once ethnobotanicals, but an overwhelming percentage, 65.54% said they know people who consuming this type of substances.

14.65% of respondents use these substances consistently at a different frequency: 4.19% - once a year; 3.66% - at parties; 4.71% - when upset / indisposed; 0.52% - 1.57% almost weekly - several times a week and 8.90% said it was a unique experience.

People consuming are aware that ethno botanicals products are affecting their health and can produce addiction; Education and entourage plays an important role in the decision on the consumption of these substances;

According to those surveyed, more information campaigns to raise awareness of the real dangers to which youth are exposed by consuming these substances should be particularly effective;

Of the 34 patients hospitalized in the Emergency Room of County Hospital in Oradea during 01.01.2015- 01.06.2015 due to consumption of

psychoactive substances, 67.65% were hospitalized due to simple use of ethno botanicals substance, or in combination with alcohol or medications;

It is observed the consumption of ethno botanicals associated with alcohol especially among adolescents (15-17 years) and ethno botanicals associated with medications, among young adults (27-33 years).

Pharmacists, professionals in the field of medicine have the moral and professional duty to combat these practices. Therefore counseling patients about the risks posed to consuming these substances, alone or in combination, impetuously needed.

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