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OCCURRENCE OF THE USE OF DESIGNER DRUGS IN POLAND – REVIEW OF THE PUBLISHED EVIDENCE

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ABSTRACT

Designer drugs are group of synthetic, semi-synthetic and natural substances used to induce effects similar to the effects of taking drugs. Despite the introduction of further legislation criminalizing the manufacture, trading and possession highs, they are still of interest to adolescents and young adults. The article contains a summary of the latest reports dealing with the spread of designer drugs among adolescents and young adults. It contains test results related to the frequency of use of designer drugs in different age groups, showing that they are much more frequently used than drugs. The scale of the phenomenon may also confirm data on the number of reported poisonings boosters. It is steady growth indicates health risks resulting from the use of designer drugs. It also emphasizes the need for immediate remedial action. It appears advisable to introduce other than questionnaire, methods of estimating the size of this phenomenon.

Key words*: designer drugs, drugs, prevalence, adolescent, drug intoxication*

INTRODUCTION

Designer drugs are defined as a group of substances with relaxing, hallucinogenic and/or psychedelic effect, stimulating the central nervous system (1). They are distinguished by great diversity in terms of origin (natural substances, synthetic or semi-synthetic), as well as the effects of their use, the characteristic effects are similar to the effects of drug use (2).

From the perspective of public health, the designer drugs are a relatively new category of drugs (3). Due to the dynamic development of the phenomenon of designer drugs market, changes have been made in the provisions of the law on the prevention of drug addiction and the Law on State Sanitary Inspection (4.5). On the basis of the proposed modifications, the provisions amending some existing regulations have come into force (6).

Under the amendment to the law on the prevention of drug addiction, the list of substances that are under the supervision of the state has been expanded of benzylpiperazine, cannabinoid receptor agonist JWH 10 and 15 plants with psychoactive properties, which occurred in the case of suspicion of their presence in the composition of afterburners (7). During the introduction of amendments in the years of 2010 and 2011, further substances from the group of synthetic cannabinoids and mephedrone (2,7,8) have been included on this list.

Legislative changes have also introduced the definition of surrogate measure (8). Its development allowed the application of the provisions of the Act on counteracting drug addiction for all substances in designer drugs, which are not subject to separate laws or regulations applicable to the general safety of the product.

The number of studies on the pharmacokinetics and pharmacodynamics of compounds found in designer drugs and their potential interactions with medications and other drugs is still too small to be able to make a full description of the phenomenon. There is also no fully documented data on the adverse effects of prolonged use them. Available information on the effects of designer drugs come mainly from clinical reports and the users themselves (2). Characterized a group of designer drugs, beyond the desired user effects (improvement of mood, stimulation of the central nervous system, euphoria, hallucinations), cause a number of side effects, among which the most frequently reported are tachycardia, contraction of peripheral blood vessels, bleeding from the nose, increased muscle tension limbs, increased sweating, blurred vision, lockjaw, bruxism, anxiety, agitation, insomnia and depression (2, 9-11).

Despite the implementation of legal regulations and having evidence of the negative impact of designer drugs on the body, they still represent a significant threat to public health. The importance of the problem is evidenced by the number of publications in recent years, which have appeared in the pages of scientific journals in Polish literature.

SCALE OF DESIGNER DRUGS USAGE - RESULTS OF PUBLISHED RESEARCH

Available in the literature, scientific reports showing the use of designer drugs usually refer to people between 13 and 24 years old (children of middle schools, high schools and students). The nationwide study conducted in 2008 by CBOS 3.5% of young people between 18 and 19 years old declared that they used designer drugs at least once in their lives, including 2.9% in the 12 months preceding the survey (12).

An interesting assessment of the problem was carried out in 2010, even before the ban of designer drugs trading on Polish territory (13). The analysis of data on 3013 people aged 13-65 years showed contact with these substances declared by 21.7% of respondents and their acceptance declared by 9.3% of respondents (6.5% of women and 14.7% men). The highest percentage of taking designer drugs, was recorded among people between 19 and 25 years old (10.6%) and among people between 16 and 18 years of age (10.4%). Similar results were obtained in a national survey conducted by CBOS in 2010, shortly after the introduction of legislation to ban designer drugs trading. The use of these substances declared the 11% of students aged between 18 and 19 years of age, including 7% in the 12 months preceding the survey (12). A similar report comprising a group of 477 people provided comparable results. The percentage of students declaring the use of designer drugs under 10% (10.7%), and another 1.5% of respondents reported their willingness to use in the future (14).

A higher proportion of the use of designer drugs were recorded in a group of 288 students of Lodz universities in 2010-2011 (3). Among respondents 23% reported at least one-time use of designer drugs, while in men this percentage reached 37.1%. Similar results provided an analysis of the years 2010-2011 involving 1135 students of Przemysl secondary schools (15). The use of designer drugs declared 22% of the respondents. Analogous results have been studying in 2010-2011 in 928 middle school students and high schools from the region of Silesia (16). The use of designer drugs declared by 21.8% of respondents, including 24.5% of boys and 17.5% girls. Published in 2013 results of the international project ReDNet (Recreational Drugs European Network Project) showed that in a group of 109 students of humanities in the Warsaw University use designer drugs declared 20% of the respondents (17). However, in the study, which was conducted in late 2010 and 2011 of 282 junior high school students in Warsaw aged between 13 and 16 years of 4.3% of respondents said the use of designer drugs in the 12 months preceding the survey (18). Similar results were obtained in the survey 111 students of Lublin universities. Taking designer drugs declared 4.8% Medical University students and 5.8% of non-medical college students in the city (19).

In 2011, research was conducted on the extent of the analyzed problem among young (1524 years old) residents of 27 EU Member States. The use of designer drugs declared 9% of the respondents (20). Lower results were obtained in a national survey conducted in the first half of 2011 in a group of 14511 people

Table I The percentage of respondents aged 13-65 years who declared the use of designer drugs the results of a study published in the years 2010-2014.

Group surveyed	Year	Frequency of the use of designer drugs	Reference
Nationwide survey of 1400 students aged 18-19 years	2008	3.5%	12
Nationwide survey of 3013 people aged 13-65 years	2010	10.6%	13
Nationwide survey of 503 people aged 15-24 years	2010	5%	20
Nationwide survey of 1246 students aged 18-19 years	2010	11%	12
The group of 1135 students aged 14-19 years, Przemysl	2010-2011	22%	15
The group of 288 students aged 19-25 years, Lodz	2010-2011	23%	3
The group of 282 students aged 13-16 years, Warsaw	2010-2011	4.3%	18
The group of 928 students aged 13-19 years, Sosnowiec, Chorzow	2010-2011	21.8%	16
The group of 477 students aged 19-25 years, Rzeszow	2011	10.7%	14
Nationwide survey of 14511 students aged 13-26 years	2011	4.5%* (1.8%)*	21
Nationwide survey of 1360 students aged 18-19 years	2013	5.2%	22
The group of 109 students aged 19-25 years, Warsaw	2013	20%	17
The group of 111 students aged 19-25 lat, Lublin	2014	4.8%** (5.8%)**	19

* 4.5% at 13-18 years of age; 1.8% in the 19-26 years of age

** 4.8% in the group of students at the Medical University; 5.8% in the group of non-medical students

(13-26 years old). The use of designer drugs declared 4.5% of students aged 13 to 18 years of age and 1.8% of students (21). Discussed in the literature are summarized in Table I.

Declared by the respondents use of designer drugs is often higher than the declared drug use. The percentage reporting drug use, defined in the study CBOS/KBPN in 2011 was 16% (12), and in 2013 18% (22). This may be due to the greater availability of designer drugs than traditional drugs, despite the acquisition of these two groups the same rules. It cannot be ruled out that the observed differences are due to greater - in the perception of young people - consent to the use of designer drugs in comparison with the drugs.

REPORTED CASES OF POISONING AND ALLEGED POISONING BY DESIGNER DRUGS

Despite restrictive laws prohibiting trading designer drugs in Poland and increasing public awareness in this regard, for the years 2010-2014 has seen a marked increase in the number of reported cases of poisonings and suspected poisoning by designer drugs.

Polish population data, collected in a report the Chief Sanitary Inspector, shows a clear dynamics of the phenomenon (23). In the second half of 2010, throughout the country, 609 cases of poisonings and suspected poisoning by designer drugs have been reported. During this period, first steps towards the elimination of designer drugs from Polish market have been taken. More than three-fold reduction in the number of reported cases of poisoning in 2011 suggests that banning designer drugs in the first period of its operation, brought the expected results. Despite initial successes, it did not solve the problem of designer drugs. Since September 2012 there has been a steady increase in the number of reported cases of poisoning or suspected poisoning by designer drugs. In 2013 their number was almost five times greater than in 2012 (1079 reports in 2013 and 264 reports in 2012), and in 2014 the number of registered cases poison boosters doubled compared with the year 2013 (2513 reports in 2014 and 1079 reports in 2013). The frequency of the phenomenon in individual years is presented in figure 1.

Territorial differentiation of the problem in 2013-2014 is also clear. Most of the notifications of cases of poisoning or suspected poisoning by designer drugs, were recorded in the Lodz region, Silesia and Lower Silesia. In this period (2013 and 2014) in the Lodz region, Silesia and Mazovia also found the largest increase in the number of cases of poisoning, respectively 208 and 516 for the Silesian province, 256 and 686 for the Lodz region, and 15 and 115 for Mazovia. Only in Lubusz number of applications in 2014 it was lower than in 2013, respectively 37 and 52 (23).

Analysis of data from the years 2013-2014 indicating the apparent increase in the number of applications in almost every age group (Fig. 2). Especially significant is it for people between 19 and 24 years of age (23).

SUMMARY AND CONCLUSIONS

A comprehensive assessment of the prevalence of the use of designer drugs in Poland is not possible due to the unavailability of a number of important data.

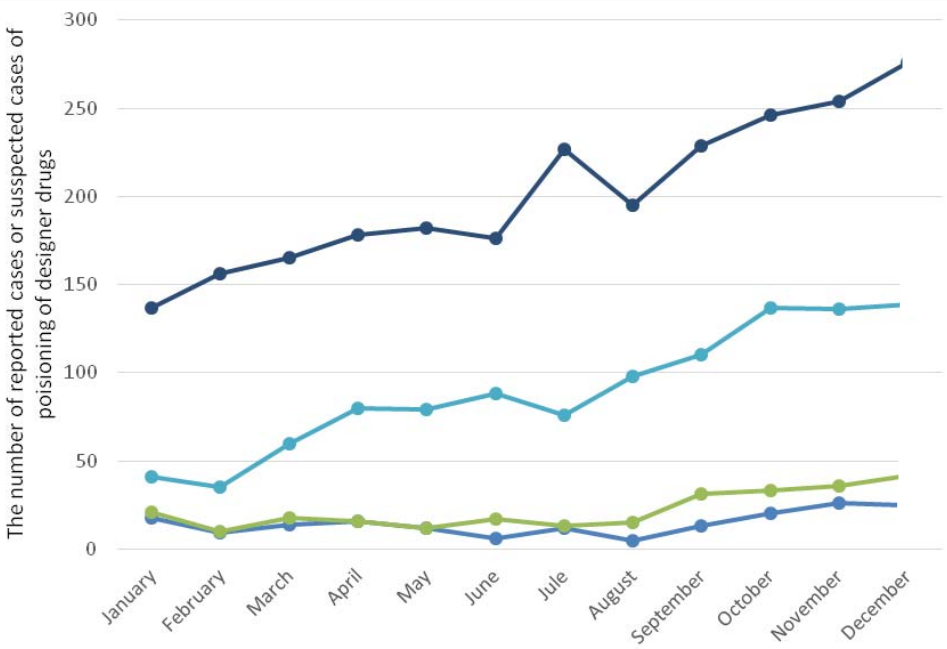

Fig. 1 The number of reported poisoning or suspected poisoning designer drugs in Poland in 20112014

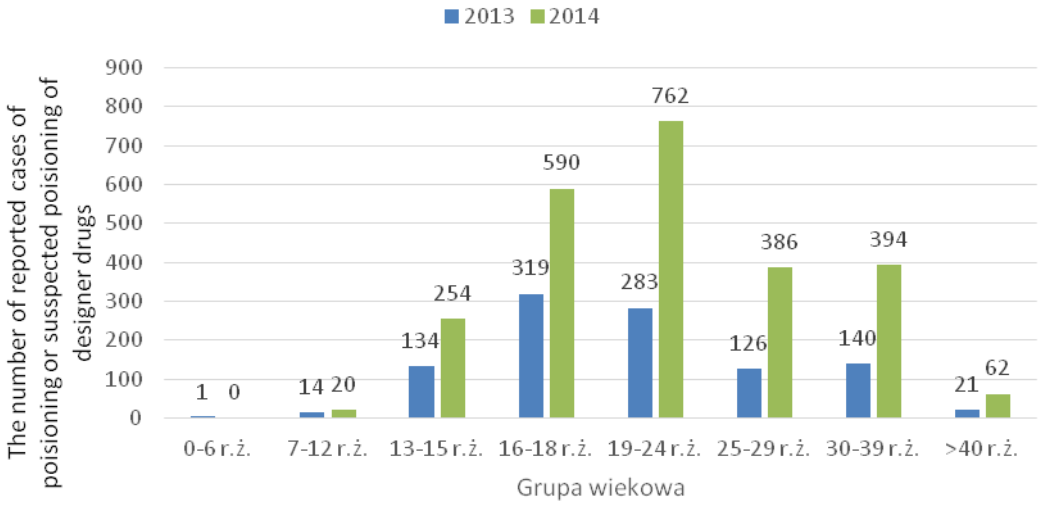

Fig. 2 The number of reported poisoning or suspected poisoning designer drugs by age groups in 20132014

First of all, it is not known or available in the literature, information on the sales volume of these products in Poland, in the analyzed period. In addition, published data derived from epidemiological studies characterized by diverse groups of representativeness of the absence of a systematic, long-term assessment of the problem across the country.

Available data authorize to conclude that the use of designer drugs is a major public health problem in Poland, due to the estimated frequency of the phenomenon and its disturbing growing trend. An indirect but convincing marker signal in this case is a systematic increase in the number of cases of poisoning boosters requiring hospitalization.

This phenomenon, on the one hand suggests ineffectiveness in implementing preventive measures, and on the other hand, points to the imperfection of the current epidemiological evaluation of the problem.

The results of analyzes conducted in 2011 suggests that at least occasional use of designer drugs affects approximately 9% of Polish youth. The scale of the phenomenon may be confronted with data from other populations. Comparable frequency use designer drugs declared the young people of the United Kingdom (8.2%) and Latvia (8.8%). A higher percentage of declaring the use of designer drugs was recorded in Ireland (16.3%). In the other member states of the European Union declared frequency of use designer drugs oscillates between 0.3% -6.8%. The lowest scores were recorded in Malta (0.3%), Italy (0.8%) and Finland (1%), the average percentage of declaring the use of designer drugs in all 27 EU member states was 4.8% (20).

Presented factual material and facts suggest that it is a comprehensive diagnosis of the problem in relation to the Polish population. It should be noted, however, that the reliability of the information from the questionnaire research on the use of substances prohibited by law is difficult to assess. Therefore, it appears advisable to introduce other than questionnaire methods for estimating this phenomenon. The solution can be used in the United States and Germany to evaluate the presence of metabolites in urine samples designer drugs (24, 25). This method, in spite of difficulties in obtaining samples and the constantly changing composition of the analyzed substance, can be a reliable source of information about the size of the problem of the use of designer drugs and dynamics of the significant risk population health status.

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