

Global Trends in Synthetic Drug Use and Their Criminological Prevention

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Abstract: The article addresses: 1) the causes of the spread of synthetic drugs, including UN data and statistical information; 2) the consequences of narcotic substance use; 3) the prevention of drug use in adolescence. The article is devoted to the analysis of global trends in the consumption of synthetic and other narcotic substances, their impact on public health, and their significance for criminological prevention. The need for comprehensive criminological prevention is emphasized, including educational programs, social support, early identification of risk behaviors, and measures to reduce the spread of drugs, which contributes to the prevention of drug-related and criminal consequences of psychoactive substance use.

Keywords: Synthetic drugs, precursors, drug-related disorders, preventive measures, criminal behavior, adolescent involvement, injection drug use.

Introduction: Synthetic narcotic substances give rise to new threats in the field of public safety and public health. They create fundamentally new opportunities for organizing their illegal production and trafficking, which is determined by a number of specific features of their manufacture. Unlike plant-based drugs, their synthesis requires significantly less time and does not depend on natural-climatic conditions or geographic location. The production of synthetic drugs does not require large land resources, does not need a large workforce, and can be carried out in relatively small spaces. The main requirement for their manufacture is the availability of accessible chemical precursors and reagents, which often have legal industrial applications and can therefore be relatively easily acquired and transported.

An additional challenge in combating the illegal circulation of synthetic narcotics is the high mobility of their production, as well as the possibility of rapidly increasing output with minimal organizational and financial costs. Such laboratories can quickly relocate, change their sites, and adapt to law enforcement measures, which significantly complicates their detection and suppression. These circumstances contribute to the active spread of illegal production of synthetic narcotic substances both in countries with low and medium socio-economic development and in

states with relatively stable legal systems and a formally functioning rule of law.

Recent practice indicates the global nature of this problem. Underground laboratories producing various types of synthetic psychoactive substances, including stimulants, depressants, and new dissociative compounds, have been identified in different regions of the world, including countries in Central Asia, Southeast Asia, the Middle East, Africa, Europe, and North America. This points to the transnational nature of the illegal trafficking of synthetic narcotics and confirms the need to develop comprehensive international and national measures aimed at preventing their production, distribution, and consumption, as well as strengthening mechanisms for controlling the circulation of chemical substances used as precursors.

According to UN data, in 2022 the number of people who had used amphetamines at least once in the previous twelve months reached approximately 30 million. This figure indicates the significant scale of the spread of these psychostimulant substances worldwide. Results of qualitative analysis suggest that over the past decade, amphetamine use has taken on an increasingly global character, encompassing new countries and regions and expanding the socio-demographic groups of users.

An additional source of objective information on consumption trends is wastewater analysis, which allows for the detection of residual metabolites of narcotic substances. These data confirm a sustained trend of increasing use of both amphetamine and methamphetamine over an extended period in several regions of the world. In particular, the growth in consumption of these substances has been observed in countries of Western and Central Europe, as well as in Southeastern Europe, indicating a continued high prevalence of synthetic stimulants in these subregions.

At the same time, different trends are observed in certain parts of the world. In the subregion of East and Southeast Asia, which has traditionally been characterized by a high prevalence of methamphetamine, recent years have shown signs of stabilization and a gradual decrease in the level of consumption of this narcotic substance. These changes may be caused by a combination of factors, including the strengthening of government control measures, the implementation of preventive programs, and changes in the structure of the drug market.

Overall, the presented data indicate the heterogeneity of global trends in amphetamine and methamphetamine consumption and confirm the need for continued monitoring of the drug situation, as well as the development and implementation of comprehensive preventive and law enforcement measures aimed at reducing the level of illegal consumption of synthetic narcotic substances.

The consumption of synthetic narcotic substances is associated with increasing serious health risks, largely due to the limited knowledge of their pharmacological effects and potential harm to the body, as well as the restricted availability of specialized drug treatment services. An additional danger is posed by the distribution of these substances on the illegal market in the form of various chemical mixtures with unknown composition and concentrations of active components. This is evidenced by the increase in overdose cases, primarily in North American countries, as well as in other regions where the sale of drugs in combined forms is increasingly observed.

Although individuals involved in the illegal drug trade continue to develop and introduce new types of psychoactive substances, in recent years there has been a noticeable slowdown in the rate at which they appear on the market. The range of new psychoactive substances (NPS) that are not subject to international control and pose a potential threat to public health has remained relatively stable since 2018. An exception was 2021, when their number reached a peak of 618 different substances. In 2022, 566 types of NPS were

recorded on the global drug market, 44 of which were identified for the first time, indicating a continuing, albeit less intensive, process of the emergence of new synthetic compounds (according to UN data).

Reasons for the gradual shift toward the use of synthetic drugs:

Over the past decade, significant changes have occurred in the structure of illegal drug trafficking and consumption in several regions of the world, primarily in Central Asia and the South Caucasus, as well as in countries of Eastern Europe. Whereas opiates, predominantly of Afghan origin, previously dominated in these regions, there is now a gradual shift toward the use of synthetic stimulants. Synthetic cathinones, including mephedrone, N-methylcathinone (metamfepramone, dimethylcathinone), alpha-pyrrolidinopentiophenone (alpha-PVP), cathinone, methcathinone, and 4-CMC (clephedrone), have become particularly widespread. This indicates a transformation of the regional drug market and a change in the structure of drug dependence among the population.

Central Asia, the South Caucasus, and Eastern Europe have virtually no equivalents in terms of the prevalence of synthetic cathinones and their significance in the structure of the illegal drug market. It is assumed that for their production in these regions, various chemical precursors not subject to international control are widely used. According to UN data, these substances include valerophenone (precursor of alpha-PVP), 2-bromo-4'-methylpropiofenone (precursor of mephedrone), and 2-bromo-4'-chloropropiofenone (precursor of 4-CMC and other 4-chloro-substituted cathinone derivatives). The availability of such substances facilitates the expansion of illegal production and distribution of synthetic stimulants.

The transformation of the regional drug market, expressed in the gradual shift from opiates to synthetic drugs, is also confirmed by data from law enforcement and medical authorities. In particular, between 2019 and 2022, the volumes of seizures of new psychoactive substances (NPS) and synthetic analogues of prescription drugs (SAR) increased approximately threefold, while the volumes of opiate seizures, by contrast, decreased. The most significant growth in NPS and SAR seizures was recorded in Eastern European countries. At the same time, in the states of Central Asia and the South Caucasus, despite initially lower figures, a noticeable increase in the detection and seizure of these substances was also observed, indicating the continued spread of synthetic drugs in these subregions.

Consequences of narcotic substance use:

Abuse of narcotic substances can lead to the development of dependence and other psychoactive disorders. According to UN data, in 2022 approximately 64 million people worldwide suffered from drug-related disorders, which corresponds to one person in 81 and represents a 3% increase compared to 2018.

Injection drug use is associated with an increased health risk, including the transmission of blood-borne infections.

People who use drugs by injection are at a risk of HIV infection that is 14 times higher than the average for the global population. In 2022, approximately one in eight of these individuals — around 1.6 million people — was living with HIV.

Injection drug use continues to be one of the key factors in the global hepatitis C epidemic. According to WHO data, approximately 23% of new cases of infection with this virus are associated with unsafe injection drug use. About one in two people who use drugs by injection suffers from hepatitis C — around 6.8 million people in 2022. Moreover, more than half of drug-related deaths are caused by liver diseases induced by this virus.

Prevention of drug use among youth:

Early adolescence represents a critical stage of neuropsychological and cognitive development, during which key structures of the nervous system and mechanisms of behavioral self-regulation are formed. During this period, the use of narcotic substances, especially in a regular and intensive manner, increases the risk of developing disorders related to psychoactive substance use, as well as contributing to the development of comorbid mental disorders, including anxiety, depression, and cognitive impairments. Prolonged or systematic drug use during adolescence can negatively affect educational attainment, social skills, and the development of adaptive behavior, creating conditions for deviant behavior in adulthood.

International studies show that the prevalence of drug use among adolescents aged 15–16 over the past 12 months exceeds that among the adult population, highlighting the relevance of preventive measures. In the criminological context, early involvement in drug use is considered a factor that increases the likelihood of adolescents engaging in illegal activities, including minor offenses, participation in organized forms of criminal behavior, or contact with the drug market.

Thus, the prevention of drug use during adolescence is a key element of criminological prevention. It involves a comprehensive approach: educational and informational programs aimed at developing a critical attitude toward drugs; social support and engagement

of adolescents in positive recreational and educational activities; as well as early identification and psycho-pedagogical correction of risky behaviors. Timely prevention not only reduces the risk of developing drug-related and mental disorders but also decreases the likelihood of youth involvement in criminal activity and promotes the development of stable social adaptation.

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