

# Užívání nových psychoaktivních látek u intenzivních uživatelů drog v Evropě

## Inventář měnících se vzorců užívání drog, posunu na drogových trzích a zaostávajících politických reakcí



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**Citace:** Janíková, B., Fidesová, H., Miovský, M., Vavrinčíková, L., Grund, J-P. C. (2016). New Psychoactive Substances among People Who Use Drugs Heavily in Europe. An inventory of changing drug consumption patterns, shifting drug markets and lagging policy responses. *Adiktologie*, 16(2), 92–105.

**VÝCHODISKA:** Počet nových psychoaktivních látek (NPS) v záchytech drog narůstá. Užívání těchto látek je hlášeno v různých populacích a v některých zemích také výskyt v populacích s vysokým rizikem, zejména v populaci intenzivních/injekčních uživatelů drog (PUDH). Cílem studie bylo zjistit situaci v oblasti užívání NPS v populaci intenzivních uživatelů drog v Evropě. **METODY:** Bylo provedeno desk review zaměřené na (prevalenci) užívání NPS v populaci intenzivních uživatelů drog ve 22 zemích Evropské unie a ve Švýcarsku. Na základě písemných zpráv zpracovaných lokálními spolupracovníky v jednotlivých zemích byl zkoumán výskyt a rozsah užívání NPS v populaci PUDH ve srovnání s tzv. tradičními drogami a jejich cena, výskyt pouličního prodeje a dále intervence, které jsou uživatelům NPS poskytovány. **SOUBOR:** Písemné zprávy

byly shromážděny z 22 zemí (21 členských států EU a Švýcarsko). Ve dvou členských státech EU a v Norsku nebylo úspěšné kontraktování lokálních spolupracovníků.

**VÝSLEDKY:** Jedenáct zemí zaznamenalo výskyt užívání NPS v populaci PUDH, zejména v menším lokálním rozsahu. Injekční užívání NPS se objevilo v 7 zemích. Z typů NPS se jedná zejména o syntetické katinony a kanabinoidy. Specifické intervence, které reagují na užívání NPS u PUDH, byly identifikovány ve Španělsku, Finsku, Irsku a Velké Británii a jsou zaměřeny na identifikaci substancí, harm reduction intervence, poskytování informací a prevenci násilí.

**ZÁVĚR:** Užívání NPS v populaci PUDH je nedostatečně prozkoumáno, k dispozici je jen málo studií a dat. Pozornost by měla být zaměřena na možný nárůst užívání NPS, zejména injekční užívání NPS mezi PUDH.

**KLÍČOVÁ SLOVA:** NOVÉ PSYCHOAKTIVNÍ LÁTKY – NPS – INTENZIVNÍ UŽIVATELÉ DROG – PUDH – SYNTETICKÉ KATINONY – SYNTETICKÉ KANABINOIDY – INJEKČNÍ UŽÍVÁNÍ DROG – POTÍŽE V OBLASTI PSYCHICKÉHO ZDRAVÍ – WWW.NPSINEUROPE.EU

Došlo do redakce: 1 / ÚNOR / 2016

Přijato k tisku: 27 / ÚNOR / 2016

**Grantová dedikace:** Vznik této publikace byl finančně podpořen z projektu č. JUST/2013/DPIP/AG/4774, „Nové psychoaktivní látky mezi problémovými uživateli drog – možnosti efektivních a komplexních zdravotních opatření v Evropě“, realizovaného v rámci programu EU „Drogová prevence a informovanost o drogách“. Institucionální podporu poskytla Univerzita Karlova, program č. PRVOUK-P03/LF1/9.

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# New Psychoactive Substances among People Who Use Drugs Heavily in Europe

## An inventory of changing drug consumption patterns, shifting drug markets and lagging policy responses



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**Citation:** Janíková, B., Fidesová, H., Miovský, M., Vavrinčíková, L., Grund, J-P. C. (2016). New Psychoactive Substances among People Who Use Drugs Heavily in Europe. An inventory of changing drug consumption patterns, shifting drug markets and lagging policy responses. *Adiktologie*, 16(2), 92–105.

**BACKGROUND:** An increasing number of new psychoactive substances (NPS) in seizures and their usage in various populations and, in some countries, heavily in the population of high-risk (including injecting) users is a general trend in Europe. It logically leads to the objective of finding out what the specific situation related to NPS in the context of the subpopulation of high-risk users is. **DESIGN AND MEASUREMENTS:** Desk review research was conducted and focused on NPS use/prevalence in populations of People Who Use Drugs Heavily (PUDH). The occurrence of NPS in PUDH, a comparison of the prices of NPS with those of traditional drugs, risk assessment on the national level and interventions to tackle NPS use in PUDH were studied from national research reports. **SAMPLE:** Desk

review reports were collected from 22 countries, 21 from the EU plus Switzerland. **RESULTS:** 11 countries reported NPS use in PUDH, mainly on a local level; the injecting of NPS was reported from seven countries. Significant groups of NPS among PUDH are cathinones and cannabinoids. Specific interventions responding to NPS use in PUDH were identified in Spain, Finland, Ireland and the United Kingdom. The interventions are focused on substance identification and harm reduction responses, providing information and on the prevention of violence. **CONCLUSIONS:** There is a lack of data about NPS use in PUDH; attention should be paid to a potential increase in NPS use, especially the injecting of NPS by PUDH.

**KEY WORDS:** NEW PSYCHOACTIVE SUBSTANCES (NPS) – PEOPLE USING DRUGS HEAVILY (PUDH) – SYNTHETIC CATHINONES – SYNTHETIC CANNABINOIDS – INJECTING DRUG USE – MENTAL HEALTH PROBLEMS – WWW.NPSINEUROPE.EU

**Submitted:** 1 / FEBRUARY / 2016

**Accepted:** 27 / FEBRUARY / 2016

**Grant support:** This publication has been produced with the financial support of the Drug Prevention and Information Programme of the European Union, project No. JUST/2013/DPIP/AG/4774, “New Psychoactive Substances among Problem Drug Users – Towards Effective and Comprehensive Health Responses in Europe”. Institutional support was provided by Charles University in Prague, Programme No. PRVOUK-P03/LF1/9.

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## ● 1 INTRODUCTION

In this paper, we summarise the results of an EU-wide inventory of the use of new psychoactive substances (NPS) among people who use drugs heavily (PUDH) and the risks associated therewith.

## ● 2 NPS USE IN EUROPE

In 2014, 101 new psychoactive substances were reported to the Early Warning System (EWS); in total the EWS monitors over 450 substances, with more than half identified in the last three years alone. The two drug classes most frequently detected in 2014 were synthetic cathinones (31 substances) and synthetic cannabinoids (30 substances). These substances are often sold as legal replacements for scheduled stimulants and cannabis and make up almost two-thirds of the new drugs notified in that year (EMCDDA, 2015a). A wide range of NPS are sold under their chemical name or using branded product names and their composition may change over time.

The availability and quality of the data related to NPS use are still limited in Europe. Drug consumers might not know which chemical they actually ingest, thus complicating the assessment of the various NPS on the market and the prevalence of their use. According to the 2014 Eurobarometer study of young people and drugs, more than 13,000 EU citizens between the ages of 15 and 24 years (8% of the respondents) had used NPS at least once and 3% in the last 12 months. Among those who had consumed NPS, over two-thirds obtained these from a friend (68%) and 27% from a drug dealer, and only 3% had acquired these unscheduled drugs online. The highest lifetime NPS prevalence was recorded in Ireland (22%), Slovenia (13%) and Spain (13%) and the highest last-month prevalence in Ireland (9%), Spain and France (8%) and Slovenia (7%) (Eurobarometer, 2014). In selected European countries such as the Czech Republic, Spain, Malta, Slovenia, Slovakia, Poland, Portugal and the United Kingdom, the prevalence of NPS use in the general population was under 1% (EMCDDA, 2015b).

An increased prevalence of NPS use is found in the party and nightlife populations and people who use drugs heavily (PUDH) or inject these (EMCDDA, 2015a; UNODC, 2015). NPS consumption is probably stimulated by both *pull factors* – their relatively low price and easy availability and reliable and stable psychoactive effects – and *push factors*, such as the low availability and quality of traditional drugs. For example, mephedrone consumption increased considerably in some countries as the purity and availability of MDMA and cocaine decreased (EMCDDA, 2015c; Winstock et al., 2010).

## ● 2 / 1 NPS use among PUDH

NPS use has been documented among PUDH in Hungary, Romania and Poland (Abagiu et al., 2014; Gorun, Curcă, Hostiuc & Buda, 2011; Polish Reitox Focal Point, 2013). In Poland 15% of the people who inject drugs (PWID) marked NPS as their “most problematic substance”, while 12% had used mephedrone in the month preceding the survey and 14% had used other NPS (EMCDDA, 2015b).

Until 2010, 99% of Hungarian PUDH reported heroin and amphetamine use, but since then the situation has changed rapidly and in 2014 more than 80% of PUDH reported NPS use, while the substances used changed over time (Racz et al., 2015). In Romania, 51% of the clients of needle exchange programmes used cathinones, 44% heroin and 5% both NPS and heroin in 2012. Cathinones were furthermore found in 29% of 3489 disposed syringes discarded in the disposal bins of needle and syringe vending machines in Paris, France. Likewise, over 6% of the needle and syringe programme clients in Dublin, Ireland had used mephedrone in the last month and almost all had injected the drug (Van Hout et al., 2012). According to the EMCDDA, synthetic cathinones – mephedrone, pentadron and MDPV – are now a fixture on the illicit stimulant market, often being used interchangeably or combined with (meth-) amphetamine and ecstasy. In particular, the injecting of methamphetamine, synthetic cathinones and other stimulants and these drugs being linked with high-risk behaviours, e.g. ‘slamming’ stimulants in the context of “chemsex” among men who have sex with men, is raising important concerns over high-risk drug use and sexual behaviours (EMCDDA, 2015a).

## ● 3 NEW DRUGS; EMERGING TERMINOLOGY

UNODC and the EMCDDA define new psychoactive substances as “substances of abuse, either in a pure form or a preparation, that are not controlled by the 1961 Single Convention on Narcotic Drugs or the 1971 Convention on Psychotropic Substances, but which may pose a public health threat” (UNODC, 2013). In the accompanying paper on the RAR of NPS among PUDH in five EU member states, we explain that the term new psychoactive substances is primarily defined by ‘legal status’ but confused with a related concept, that of ‘new or emerging drug trends’, which does not distinguish (or exclude) substances on the basis of their legal status, but focuses, for example, on sociodemographic and cultural determinants, diffusion patterns and the outcomes of such new trends. The legal status may well be a minor incentive for NPS use among PUDH, and nor is it very relevant to service providers confronted with the emergence of a new and apparently harmful drug among their clients. Indeed, the harms attributed to the use of synthetic cathinones by service providers in countries such as the Czech Republic, Ireland, Poland, Romania or the UK

seem to be interchangeable with those attributed to *Sisha* (smokable methamphetamine – a scheduled drug in most countries) by their colleagues in Greece (Grund, Vavrincikova, Janikova, Fidesova & Miovsy, 2016).

Thus, the NPSinEurope.eu project focused on ‘new drug trends’, which include the emergent availability and use of substances new to a community, country or culture, regardless of their legal status. In effect, the project focused primarily on the expansion of stimulant use and, with the exception of Greece, in most countries this concerns synthetic cathinones. But in some countries the use of synthetic opioids – e.g. injecting fentanyl in Estonia and the Czech Republic – may present equal challenges and, more recently, overdoses associated with MT 45 in Belgium and the detection of Octafentanyl in France have been raising concern among the authorities, online drug forums and advocacy groups of people who use drugs alike. In this paper, we use the term “people who use drugs heavily” to refer to a morally neutral term that describes users’ behaviours without conveying moral connotations (Grund et al., 2016).

The review reported in this paper aimed to inform the development of innovative and effective health promotion interventions by the project partners targeting emerging NPS use in Europe, in particular in response to more hazardous consumption patterns and in vulnerable populations (Schiffer & Schatz, 2016). We discuss the types of substances detected and the markets these are found in, pricing information on NPS in comparison with comparable traditional drugs and the extent of NPS use in PUDH communities across the EU and report on the risk assessment and intervention efforts in member states in response to emerging NPS.

#### ● 4 METHODOLOGY

This study aimed to compile an inventory of the use of new psychoactive substances in populations of People Who Use Drugs Heavily (PUDH) in the European Union, Switzerland and Norway, the harm associated therewith and of emerging preventive and harm reduction responses in these countries.

##### ● 4 / 1 Countries included

The inventory included data from 27 EU countries. In 21 EU Member States – Austria, Belgium, Bulgaria, Croatia, the Republic of Cyprus, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Luxembourg, Malta, the Netherlands, Slovakia, Slovenia, Spain, Sweden and the United Kingdom – and in Switzerland we contracted local (in-country) research collaborators (LRCs). The national LRCs were selected by De Regenboog Groep from among the membership of the Europe-wide Correlation Network, using a selection guideline drawn up by the CUNI researchers that emphasised research skills and suf-

ficient command of the English language. The local research collaborators selected included academic and NGO researchers and staff from national focal points.

The local research collaborators conducted a desk review of the available data pertaining to the extent and nature of NPS consumption in their respective countries between February 2015 and September 2015. Similar desk reviews were conducted by the project partners in the Czech Republic, Greece, Poland, Portugal and Romania during a rapid assessment and response study, which was implemented between May 2014 and March 2015 (Vavrincikova, Fidesova, Janikova & Grund, 2015). In two EU countries, Denmark and Lithuania, and Norway we were unfortunately not successful in recruiting local research collaborators, despite numerous attempts.

##### ● 4 / 2 Data collection, sources and instruments

The local research collaborators and partner organisations compiled and reviewed relevant national information sources pertaining to the extent and nature of NPS consumption in their respective countries, including peer-reviewed literature and “grey” scientific literature, government publications, national news media reporting and data from NGOs and other service providers.

The activities of the local research collaborators were structured using a common set of data collection and processing instruments and a common reporting format, for which the CUNI researchers developed templates. CUNI also developed data collection guidelines with instructions as to what types of data to include and where these could potentially be found. As much of the information on NPS is published in grey, local-language publications, the country researchers were encouraged to use not only standard literature search engines but equally to use information sources and networks by which national language studies and reports are distributed. The data collection guidelines included a common set of research questions on the types of new substances found in the member states, the emergence of, or changes in, drug consumption patterns among PUDH and the various types of drug-related harms reported, as well as on developments in service provision in response to NPS use in these populations. These questions were structured into three main domains, covering efforts at: (i) the early identification and monitoring of NPS consumption, markets and availability; (ii) risk assessment of trends identified and (iii) interventions developed in the country.<sup>1</sup>

1/ The project data collection guidelines and other unpublished internal project documents are available from the first author upon request.

### ● 4 / 3 Analysis

The local researchers compiled their findings using a standardised national report format. The 22 national reports were subsequently entered into a transnational database and the data ordered and subjected to descriptive content analysis following the three domains of inquiry mentioned above. A full description of the available data in each category was provided, and, if possible, the data was compared. When the prices of traditional drugs and NPS were analysed, these were structured into tables with the most cited substances and within one category according to their effects and similarities, e.g. cannabinoids and synthetic cannabinoids.

Both the local research collaborators and the partners conducted additional research activities. The local research collaborators in Austria, Germany, Hungary, Ireland, Latvia, Spain and the United Kingdom – the countries reporting the highest overall lifetime prevalence of NPS use and/or reporting the injecting of NPS, synthetic cathinones in particular (EMCDDA, 2014) – conducted an email-based survey of national and local stakeholders in NPS policy, while the project partners assessed the offline and online availability of NPS in their countries and organised focus groups in two cities. The results from these sub-studies are reported elsewhere (in this issue) (Grund et al., 2016; Vavrincikova, Fidesova, Janikova & Grund, 2016; Grund, Janikova, Fidesova & Vavrincikova, 2016a). In this paper we summarise the results of the country desk reviews in the 21 EU member states and Switzerland.

## ● 5 RESULTS

### ● 5 / 1 Substances identified

The identification of substances usually results from seizures by the customs or police or from voluntary drug testing programmes. According to the early warning system in Austria, the *Checkit!* programme in Vienna and *MdA Basecamp* in Innsbruck identified around 200 different NPS between January 2009 and December 2014 (Schmutterer, 2015). In Germany, toxicologists from the University of Freiburg test samples of ‘legal high’ products as well as ‘research chemicals’ on a frequent basis. Since 2010, they have tested more than 1000 samples, predominantly from German-language online shops (Auwärter et al., 2015). Synthetic cannabinoids were found in 908 samples, seven of them in more than 50 samples. 159 samples contained NPS other than synthetic cannabinoids. Within this group, local anaesthetics (Lidocaine and Benzocaine) are the most frequent ones (Werse, 2015). NPS could be mistaken for or marketed as a ‘known’ substance.

In France, 25C-I-NboMe and other psychedelics in the NboMe (N-benzoyloxymethyl) series have recently gained popularity, as these often come in blotter form, not infre-

quently mislabelled as LSD. As blotters can only contain up to some 10 mg of active chemical per “paper trip”, they serve as a medium for more potent chemical drugs in particular. Most overdoses associated with NboMe psychedelics are associated with the wider therapeutic window of 25I-NboMe compared to LSD, while its onset may take half as long again or twice as long. As a result, people may *stack* several blotters, thinking they took LSD. Mislabelling is also observed with other drugs, for example synthetic cathinones sold as ecstasy. Overall, cathinones appear to attract fewer consumers where good-quality ecstasy is available (Meignen, 2015).

### ● 5 / 2 Types of markets and settings of NPS sales

Until recently, the main outlets for NPS in most of the countries were smart shops.<sup>2</sup> These brick-and-mortar outlets kindled the emergence of NPS in many EU countries, for example, in Bulgaria, where ‘legal highs’ were first introduced into the country by an Irish businessman who opened up



Figure 1 / Obrázek 1

Smart shop “tube” sale and the activists’ poster

Nepřímý prodej obchodu typu „smart shop“ a plakát aktivistů

Source / Zdroj: Association “Stop Drugs”, 2015. www.stop-drugs.lv

a chain of NPS shops and started importing and trading in various substances not listed under the Bulgarian list of controlled substances. The new drugs were also sold via the Internet, extending their reach to interested customers in the whole country (Lyutzkanov & Tsenkova, 2010; Rusev, 2015). In Latvia, activists and the public protested vociferously against the smart shops. Attacks on the shops and their employees led to protected “tube” sale to minimise the contact with the public (Figure 1).

2/ 12 countries reportedly closed (most) smart shops between 2010–2014 (Belgium, Bulgaria, the Czech Republic, Germany, Ireland, Italy, Latvia, Poland, Portugal, Romania, Slovakia and Switzerland). In Croatia, the United Kingdom, the Netherlands and Spain the shops remain open, but should only be selling legal products.

**Table 1 / Tabulka 1**

Availability of NPS via different sources

*Dostupnost NPS z jednotlivých zdrojů*

	Internet	Street dealing	Shops	Party	Note	Source
Austria	nd	nd	nd		Probably not due to quick regulation procedure	
Belgium	12,22		53.33		Needle and syringe program clients, in %. Shops refer to Dutch smartshops.	Windelinckx, 2015
Bulgaria	yes	nd	yes	yes		
Croatia	yes	nd	yes		Also home production with ingredients from pharmacies	
Cyprus	nd	nd	nd		Data expected to be available 2016	
Estonia	yes	no	no	yes		
Finland	yes		no	yes	Street dealing is fairly rare	
France	yes			yes	Very few to no street retailer	
Germany	yes	yes	yes		Street dealing in Bavaria Region	
Hungary	yes	Yes	nd	nd		
Ireland	yes	yes			PUDH buying NPS on the black street market	(Van Hout, 2012), Manager of a Dublin City Centre Service (HR)
Italy	yes	yes		Yes	25i-NBOME and Mephedrone can be found also in the streets. Smartshops were closed.	
Latvia	yes	nd		nd	On-line sale through users forum. Shops closed.	
Luxembourg	yes	nd		yes	Shops very scarce.	
Malta	nd	nd	nd	nd		
Netherlands	nd	nd		nd	Very limited NPS sale in few shops.	
Slovakia	yes	yes		nd	Shops closed	
Slovenia	yes			yes	58.1% purchase before party, 12.0% on the party, 29.9% never buy, others purchase NPS for them. Usually got or bought NPS from friends (57.5%), 37.4% bought from the dealer and 6.2% purchase from the internet.	DrogArt NPS 2014 survey (n = 243)
Spain	yes	yes	yes	yes		
Sweden	yes	nd	nd	nd	Buying from friends or someone buy a larger quantity to sell among friends, particularly in smaller cities.	
Switzerland	yes			yes	Shops were closed.	
United Kingdom	yes	yes	yes	yes		

Note: Nd – no data, data are gathered from reports, thus here are presented sources mentioned by Reporters.

In the Netherlands,<sup>3</sup> four smart shops in Amsterdam and Utrecht sold “survival kits” that contained capsules of 4-FA and Mephedrone labelled as ‘vitamins’ inside a metal-

3/ Historically, the Dutch smart shops emerged long before the NPS phenomenon, which prompted their rise in most other EU countries. Dutch smart shops sell a variety of goods, including a wide variety of drug paraphernalia such as that for sniffing cocaine, drug testing kits, vapourisers and scales. Many shops also sell vitamin supplements and other substances that mitigate the (hangover) effects of drugs, including amino acids such as L-Tryptophan and 5-hydroxy-tryptophan (5-HTP). The latter drugs are, for example, used to replenish the serotonin levels in the brain after the use of MDMA (Schatz, 2015).

lic (gold or purple) keychain. But most Dutch smart shops stopped selling synthetic cannabinoids, cathinones or other chemical drugs and shifted their focus to herbal products instead. Indeed, “magic truffles” containing psilocybin or “Philosopher’s stones” (the sclerotia or the hardened fungal mycelium that remains underground after the above-ground mushroom has waned) are the core business of many smart shops. In Amsterdam magic truffles are sold in many souvenir shops, while more recently ‘smart departments’ have emerged in a rapidly increasing number of Rotterdam tobacco shops. The merging of these two different

distribution channels has attracted little concern from the media or the authorities.

As countries scheduled recently emerged substances, using drug or other laws, most smart shops were closed down and NPS sales moved “under the counter” (Werse, 2015), into traditional drug-dealing structures and online, where they fuelled new “research chemical shops”. Street dealing of NPS was reported from Hungary, Ireland, Italy, Slovakia, Spain, the United Kingdom and Germany. In the accompanying paper on the five-country RAR study, Grund et al. (2016) describe in greater depth how Internet markets have not necessarily replaced the offline drug trade, but rather they seem to seamlessly harmonise with one another. However, few national or local-level studies have been conducted and data is sparse, while developments in NPS markets catering to the PUDH population are often not systematically monitored. Where available, exact data from local studies is presented in *Table 1*.

In Switzerland, an Internet-based survey in 2012 (n=120) showed that the most frequent place of purchasing is third country websites, followed by friends, websites in Switzerland, head shops, dealers, parties and producers of “legal highs” (Morgenstern et al., 2012). However, according to police sources, there are currently no significant or enduring NPS sales in brick-and-mortar stores or via websites registered in the country. A hidden market is, however, possible or even likely; however, its size is completely unknown (Zobel, 2015). According to the data of the National General Surveys, in Spain, it is mostly young people aged 15 to 24 years old that acquire NPS in the same way they acquire traditional illegal drugs: through their friends and in leisure contexts – party settings.

In Germany, two online surveys of mostly recreational NPS consumers reported on the dynamics of the NPS market. In 2011, most respondents bought synthetic cannabis products, bath salts and other ambiguously labelled products in head shops, followed by online shops, but this changed significantly in 2013/14, when online acquisition was almost three times higher than purchases from head shops. This dramatic shift in acquisition is associated with law enforcement efforts to ban NPS from brick-and-mortar shops, using the law concerning medicines. However, these efforts have reportedly not completely ended NPS sales in head shops. But “research chemicals”<sup>4</sup> were usually bought from online shops, and only a few respondents purchased NPS directly from a producer. Significant proportions of respondents received their NPS products from friends. Since most of the other respondents bought NPS from the Internet, most of the substances obtained from friends might also have their origin on the Internet. Whether this

concerned paid transactions, gifts or the sharing of drugs among drug-consuming friends is not clear. Only very few respondents reported ordering NPS in bulk with the intention of distributing these further, except in the Bavaria region (Werse, 2015).

According to Smith and Garlich (2013), in the United Kingdom NPS are mainly obtained from three sources: traditional brick-and-mortar retailers, online retailers and friends, family and street-level dealers. Within the UK there are an estimated 250 specialist retail outlets (head shops) selling NPS; however, NPS are being sold in a wide range of unregulated, grey market outlets, including pubs, market stalls, newsagents and petrol stations. Marketed as ‘plant food’, ‘bath salts’, ‘research chemicals’, ‘incense’ or ‘herbal highs’, these products are typically labelled as ‘not for human consumption’ (Dalton, 2015). Sourcing from friends seems to be the most common means of obtaining NPS. This may be due to young people without credit cards being unable to source NPS from the Internet (DrugScope, 2014). It is also possible that a small network and/or group of friends may all source from the same single Internet purchase. Sourcing from street-level dealers occurs within a variety of settings, such as dance venues, house parties and music festivals and sometimes in a sexual context. Festivals are a particular concern because of the high level of controlled drugs detected in NPS. The Forensic Early Warning System (FEWS) annual report for 2014 (Home Office, 2014) shows that in 2013-14, 19.2% of the NPS samples collected by FEWS contained controlled drugs. The same report indicates that a low proportion of controlled drugs was detected in NPS samples from head shops (4.3%) and the Internet (3.0%), but a high proportion of controlled drugs was detected in NPS samples from festivals (88.1%) (Dalton et al., 2015).

### ● 5 / 3 Cost of NPS and comparison with traditional drugs

Overall, it is complicated to assess and compare the prices of NPS between countries. There is a lack of information on prices on the street level and in PUDH markets. The pricing information available mainly concerns Internet prices and law enforcement data sources. All these factors should be taken into consideration when comparing the prices in *Table 2* and *Table 3*. Where available, street prices are provided.

Comparing the prices of traditional and NPS drugs, there is no significant difference; NPS can be purchased more cheaply or even more expensively (see the example of Bulgaria), but what makes the difference is purity and substance characteristics. In NPS, there are usually no adulterants and for the same amount of money the user obtains a more potent drug, and also some NPS can give a stronger and longer-lasting effect for the same or a lower

4/ Research chemicals – substances that are sold under their chemical name.

Table 2 / Tabulka 2

Prices of NPS, per 1 gram, currency Euro

*Ceny NPS za 1gram, v eurech*

Country	Mephedrone	3-MMC	Synthetic cannabinoids	MDPV	Pentedrone and other cathinones	„Pills“ reardless of the content	Note
Austria	–	13	–	–	–	–	
Belgium	–	–	13.5	21	–	–	
Bulgaria	30	–	30	–	–	–	
Croatia	–	13–14	10	–	19	–	2013 (3-MMC in 2015)
Cyprus	–	–	–	–	–	–	
Estonia	–	–	2.80pc	–	–	–	newspaper article
Finland	–	–	–	60–40, 40–25	–	–	
France	–	20	–	–	–	–	4-AcO-DMT €156/g, €3.12/dose
Germany**	–	ND	8	–	–	–	
Hungary	10.8	–	4.9	17.2	12.3	–	2013 and 2014
Ireland	–	–	–	–	–	–	
Italy	40–60	–	–	–	–	–	
Latvia	–	–	12–16	28.4	–	–	
Luxembourg	–	–	–	–	–	10–12	
Malta	–	–	–	–	–	–	
Netherlands	10–20	–	–	15–21	–	–	
Slovakia	–	–	8.33	–	–	–	
Slovenia	–	15–21	–	–	–	–	
Spain	–	–	–	20–40	12–30	–	NPS prices from drug checking program
Sweden	–	–	38	–	–	–	
Switzerland	76	–	–	–	–	–	SFR 60/g for Methoxetamine and SFR 100/g for MDA.
United Kingdom	18.81	–	–	–	–	–	Street level in 2013

price. When the prices of NPS and traditional drugs are compared, the factor of the purity of traditional drugs is not examined; NPS could be substitutes for low-quality traditional drugs, but we have no data to support or refute this idea. The data about the street prices of NPS can rely only on user information, but there is no chemical analysis to confirm what kind of substance the user has bought. To sum up, there is an absence of regular and detailed statistics or research data on the prices and purity of the NPS on the drug scene.

The Bulgarian experience shows that the emergence of the ‘legal high’ market has not had a substantial adverse effect on the demand for traditional drugs. Between 2010 and

2012, the average prices of traditional drugs, such as amphetamines or cocaine, remained largely unchanged, while the prices of herbal cannabis and methamphetamines increased. Most of the NPS supplied in the country were synthetic cannabinoids and marketed as herbal cannabis analogues, and cathinones, phenethylamines or piperazines are often sold as traditional amphetamines. Synthetic cannabinoids tend to be around the maximum price of herbal cannabis for the period 2010–2011. However, users report that synthetic cannabinoids are much more potent than herbal cannabis (Krasteva, 2010), thus providing better value (‘stronger effect’) for money. Even within drug classes, the prices of traditional drugs may vary and these

**Table 3 / Tabulka 3**

Prices of traditional drugs, per 1 gram, currency Euro

*Ceny tradičných drog za 1gram, v eurech*

	Heroin	Fentanyl	Cocaine	Ampheta mines	Methamp hetamine	Ecstasy/1 tbl	Cannabis (herbal)	Cannabis (resin)	Year
<b>Austria</b>	30–100	–	50–130	6–60	40–120	4–12	5–12	6–12	2014
<b>Belgium</b>	31	–	49	8.2	–	4.4	8	9	2014
<b>Bulgaria</b>	12.5–50	–	40–125	5–25	5–35	2–15	1–17.5	–	2012
<b>Croatia</b>	60	–	80	16	–	7	6	17	2013
<b>Cyprus</b>	50–110	–	47–110	36–135	–	5–15	11 – 40	10–30	
<b>Estonia</b>	10–15pd	7–10pd	80–120	10–20pd	10–20	6–10	20	7–10	2012
<b>Finland</b>	100–200	–	70–150	15–70	15–71	80–150	15–20	10–15	–
<b>France</b>	–	–	–	–	–	–	–	–	ND
<b>Germany**</b>	50	–	70	10	9.50	8.50	8.50	9.50	2014
<b>Hungary</b>	12.2	–	56.7	9.8	5–50.5	5	7.7	5–15.1	2013 and 2014
<b>Ireland</b>	–	–	–	–	–	–	–	–	ND
<b>Italy</b>	35–50		50–80	20–30	ND	40–60*	8–15	6–10	–
<b>Latvia</b>	71	–	78	–	14.2	7	11.3	–	–
<b>Luxembourg</b>	18–100	–	40–133	10	–	–	10–20	6–15	–
<b>Malta</b>	76	–	79	70	–	10	25	24	–
<b>Netherlands</b>	–	–	55	7	–	3–10	–	–	–
<b>Slovakia</b>	25–80	–	70–120	–	20–100	–	–	–	–
<b>Slovenia</b>	40	–	60	10	–	5	6	10	–
<b>Spain</b>	58.8	–	58.95	27.74	–	10.7	–	5.85	–
<b>Sweden</b>	32	–	–	–	–	–	–	–	ND
<b>Switzerland</b>	43–55	–	71–105	9–18	–	9–14	7.3–12	–	–
<b>United Kingdom</b>	12.54	–	50.17	12.54	18.81	3.76	3.76	3.76	2013

Note / Poznámka: pd – per dose, pc – package, \*MDMA, \*\*Frankfurt street price

variations are not always explained by the pharmacology of the substance; compare, for example, the closely related illicit stimulants amphetamine and methamphetamine. In the Netherlands, domestically produced amphetamine sulphate can be bought for €5 per gram, while the same amount of methamphetamine will require €150 on average (down from €200 per gram) (Knoops et al., 2015). While scheduled traditional drugs often contain adulterants, the purity of NPS is high and stable, so that smaller amounts of the drug are required. This is an important reason driving the market for NPS – purity seems more important to customers than price. For example, in Sweden genuine (and illicit) amphetamine costs about 250 Swedish krona (SK) per gram, and the synthetic cathinone, 3-MEC, 245(SK) per gram. While the prices are about the same, the potency of 3-MEC is much stronger, explaining its popularity.

Price differences (per gram) between synthetic cannabinoids and herbal cannabis vary across Europe. In Bel-

gium and Croatia the natural and synthetic products differ only slightly in price, but in Bulgaria and Sweden synthetic cannabinoids are reportedly more expensive than the most expensive herbal cannabis (±€38). In contrast, Germany, Latvia and Hungary report little difference between these two categories (range €4.9–€16).

#### ● 5 / 4 Extent of NPS use among PUDH

Eleven out of 22 EU countries have reported NPS use among PUDH, primarily in local studies. In most EU countries data on NPS in PUDH populations is either missing or incomplete. The highest prevalence estimations of NPS use are reported in Hungary, Germany, Slovakia, Belgium and Croatia. Most estimates rely on small local studies or result from ‘guesstimates’ by harm reduction services. RAR study indicated NPS use among PUDH, as well as the injecting of NPS, in Romania, Poland and the Czech Republic. In the latter country, NPS use among PUDH is largely concen-

trated in the capital, Prague (see Mravcik et al., 2015; Belackova et al., 2016; Grund et al., 2016).

In Belgium, the last-year prevalence of NPS reported from needle and syringe programmes was around 26% (Schrooten, 2015). A study of 600 opioid users in Croatia reported 14.9% lifetime prevalence of some NPS use; however, the use of cathinones and synthetic cannabinoids was very low in this group and the most prevalent NPS were not identified (Vugrinec, 2015). On a small local scale current NPS consumption among PUDH in Germany appeared to be 31%, according to an internal harm reduction questionnaire survey, and in Slovakia it is estimated by the experts of one harm reduction programme that 40% of their clients use NPS, but national data is not available. The last-month NPS prevalence in Hungary was 73%; the popularity of NPS among PWID in Hungary grew rapidly after 2009 and has probably drawn many newcomers into injecting drug use. Monitoring data from syringe exchange programmes (SEP) recorded the change in the drug market; between 2009 and 2013 the number of SEP clients doubled, and the situation regarding the type of drugs used changed (the percentage of heroin users went from 56% to 8% and that of those injecting other drugs from 4% to 73%), with an increase in the injecting of NPS. In that same period the number of treatment demands associated with NPS increased sharply (Hungarian National Focal Point, 2013, 2015). At this point, the majority of Hungarian PUDH use NPS; injecting NPS is reportedly associated with higher injecting rates (10–15 times a day) than amphetamine or heroin (3–4 times a day), raising concerns about the (sequential) use of non-sterile injecting equipment and the potential public health consequences (Sarosi, 2015). Racs and Csak et al. (2015) summarise the changes over time in the substances used by visitors to harm reduction programmes in Budapest since 2010. “Mephedrone appeared in the second half of 2010, but virtually vanished by the second half of 2011. MDPV emerged in the second half of 2011, but practically disappeared by the second half of 2012. Pentadone under the street name “crystal” surfaced in the first half of 2012. Two new drugs with unknown components under the street names “benzon” and “music” appeared during 2013. By 2014 “benzon” essentially disappeared, while “music” was mentioned by almost 20% of the new clients. While “crystal” was still dominant in 2014, it became evident during the year that several different substances were sold under this street name.”

### ● 5 / 5 Harm reduction, prevention and treatment responses to NPS use in participating countries

Analysis of harm reduction, prevention and treatment responses indicates that most of the countries have only partial data or piecemeal information on the use of NPS among

PUDH from emergency services and hospitals and drug services generally. Few EU countries have formal or informal needs assessment procedures in place for emerging psychoactive substances. Harm reduction, prevention and treatment programmes, as well as emergency medical services, are poorly prepared to deal with NPS use among PUDH. Often measures in response to NPS do not specifically target PUDH but juveniles, young adolescents or recreational drug consumers, frequently in nightlife, party and festival settings (harm reduction). The responses to NPS use in PUDH are left to the drug or health services that traditionally work with this population. But drug treatment and harm reduction workers often find themselves ill-equipped to deal effectively with the problems and (chaotic) behaviours associated with NPS use among their clientele.

More specifically, the inventory suggests that there are several barriers to effectively engaging PUDH involved in NPS use in harm reduction and treatment services. For a starter, not all PUDH involved in NPS use are connected to services. They may not be able to access such services easily (e.g. for reasons of proximity) or may deem these unattractive or irrelevant to their situation, lifestyle or day-night rhythm.

Likewise, the “unpredictable” composition and effects of NPS place demands on the care system that were formerly uncommon, including the need for acute care for intoxicated users. Increasingly capricious drug markets will require more flexible drug services and individualised but comprehensive approaches addressing individual and community needs.

Finally, it is necessary to provide drug service staff with information and basic training on the various types of new drugs and their somatic and psychological effects and the associated risks (Public Health England, 2014). Drug service workers consider this a requirement for meaningful engagement with their clients in connection with NPS use. The often unknown content of NPS products and the absence of adequate information on dosage and the hazardous interactions of single substances or drug combinations complicate individual and community efforts at harm reduction and self-regulation.

The search for appropriate interventions for reducing the risk associated with NPS also brought drug-checking programmes back into the spotlight in several countries, as these could potentially identify hazardous substances early on and respond rapidly. Drug-checking programmes do not only analyse drugs; an important part of their work concerns informing and counselling mostly young people on the actual content, effects and risks of the substances they consume. They may disseminate alerts on hazardous substances, reportedly significantly reducing the incidence of acute drug-related problems and helping to increase the effectiveness of the EU early warning system (Ventura et al.,

2011). Drug testing programmes are found in many European countries, including the Netherlands, Switzerland, Austria, Belgium, Germany, Spain, the United Kingdom, Finland and France (Ritter, 2014). But mostly these programmes primarily serve recreational drug consumers or young people in nightlife settings and at (dance) festivals, and although they are not necessarily barred from participation, most drug testing programmes do not target PUDH. A notable exception is found in Catalonia, where drug checking is offered in a Barcelona drug consumption room, allowing the local monitoring of NPS use and low-threshold information exchange with PUDH who visit the facility.

Specific responses to NPS consuming PUDH were identified in Finland (treatment staff training on violence and prevention and a web-based harm reduction brochure) and in Ireland (the development of legislation to enable a safer injecting room connected with an increase in the risk of HIV and other blood-borne diseases among people who inject mephedrone). The United Kingdom has advanced NPS responses focused on clinical practice, including briefing on steps to be taken to address NPS and club drug harm (Royal College of Psychiatrists, 2014) and clinical treatment intervention guidance for the management of NPS under the project NEPTUNE – Novel Psychoactive Treatment UK Network.

## ● 5 / 6 Study limitations

The desk review mainly relied on published data. But NPS markets are volatile and new drug consumption trends subject to increasingly rapid change. In many EU countries drug monitoring, services and policy responses – designed in response to illicit and by now well-known substances – may not yet be sufficiently sensitive to the fast paced reality of NPS and iDrugs (drugs sourced through the Internet). The review methodology was not always completely implemented conform the study guidelines in the countries assessed. In some countries the data processing templates were not consistently used or not sent along with the country report. This resulted in missing country data on several of the research questions or data provided could only be compared to a limited degree. Different reporting styles and large variation in the amount of information reported complicated the transnational analysis. As a result, the reported country data included in the inventory may in some cases not completely represent today's reality as experienced by service providers or people involved in NPS use and transnational comparisons should be interpreted with care.

## ● 6 DISCUSSION

In 2014/2015 local researchers in 27 EU countries and Switzerland associated with the NPSinEurope.eu project collected and reviewed data on NPS consumption among

PUDH. Out of these 27 countries, at least 14 identified NPS use among PUDH, including Austria, Belgium, Croatia, the Czech Republic, France, Hungary, Germany, Ireland, Poland, Romania, Slovakia, Spain, Switzerland and the United Kingdom, mostly in local-level studies. There is in fact only limited data on NPS consumption among PUDH, as NPS use in this population is not frequently studied. Nor have NPS-related indicators made it into the standard (treatment demand) registration systems in many countries.

The available data is often based on smaller local studies or concern estimates from harm reduction programmes but most of the data reported came from law enforcement sources.

Countries differ in how monitoring efforts and services are organised; they have different communication channels and traditions that may or may not guarantee proper information exchange between low-threshold services in close contact with PUDH populations, research and monitoring efforts and policy makers, or that relevant information is distributed to wider audiences.

Monitoring efforts and data collection should be further standardised and streamlined in the EU and focus on securing a steady upstream and downstream flow of relevant information between drug service workers – in e.g. outreach programmes and drop-ins – local policy makers, National Focal Points, government policy makers and the EU Early Warning System and the EMCDDA.

Price comparisons between NPS and traditional drugs suggest a mixed picture. NPS may be cheaper, similarly priced or even more expensive than the traditional stuff; the actual differences concern purity and other substance characteristics. Traditional drugs mostly contain adulterants, while tampering with the purity of NPS does not seem common. On the other hand, the Czech Republic and other countries reported that NPS were used to cut scheduled stimulants.

Thus, the perspective of a potent NPS of relatively high purity at a price that competes with those for black market drugs provides an important incentive for their use, in particular where traditional drugs are of low purity or scarce.

The use of NPS potentially involves risks of an unknown nature, including unexpected health complications and even death. Few EU countries conduct formal or informal needs assessment of NPS or emerging drug trends. Proper procedures for the early identification and assessment of emerging drug trends are even beneficial for low-prevalence countries, as drug markets are increasingly subject to rapid change and may quickly evolve where they were absent before. Therefore, people who use drugs, service providers and policy makers alike should have access to up-to-date information on the NPS available in local mar-

kets and, as in this population their use is most prone to harmful outcomes, their use among PUDH in particular.

## ● 7 CONCLUSIONS

Many countries struggle to keep up with the pace and capricious nature of the NPS market and their use among people who use drugs heavily is poorly understood. Motivations for NPS use may vary, with an important role being played by their unclear legal status and the low priority given to the enforcement of NPS possession for personal use in many member states. But potency, purity, availability and price, as well as the availability of traditional drugs and access to drug treatment and the quality thereof, may be equally important factors in NPS use among PUDH. In the accompanying paper on the RAR outcomes, we report several other push and pull factors that bear on the diffusion of NPS among PUDH (Grund et al., 2016).

A wide range of NPS is used in the EU, but among PUDH cathinones prevail. The main source for NPS purchase is the Internet environment. Street dealing of NPS was reported from Hungary, Ireland, Italy, Slovakia, Spain, the United Kingdom and Germany and via the RAR study from the Czech Republic, Poland and Romania. The country reports suggest that NPS are increasingly combined with other locally available drugs.

NPS injecting was reported in Austria, Hungary, Latvia, Slovenia, Sweden, the United Kingdom and Finland. In other EU countries the information on NPS injecting and the populations in which this occurs is limited but in many countries, including the United Kingdom, France, Hungary and even the Netherlands, NPS injecting is emerging on the fringes of nightlife and festival settings and as a sexual stimulant, particularly among MSM engaging in “chemsex”. These high-risk behaviours related to NPS use are increasingly raising concerns among researchers and public health officials across Europe over the potential for re-emerging epidemics of blood-borne virus transmission. Tailored responses to NPS consumption among PUDH are only evolving slowly, while new drugs are entering the market at a historically unprecedented pace. Knee-jerk policy responses will probably add to the harms associated with NPS.

## Acknowledgements

We would like to thank both our project partners, APDES, Porto, Portugal, and the Federation Rainbow Group in Amsterdam, the Netherlands, and the local research collaborators in the participating countries for their contributions and dedication to the project.

## Poděkování

*Rádi bychom touto cestou poděkovali partnerům projektu: APDES, Porto, Portugalsko, Federation Rainbow Group v Amsterdamu, Nizozemí, a také děkujeme místním vý-*

*zkumným spolupracovníkům ze zapojených zemí za jejich participaci na projektu.*

**The role of the authors:** Jean-Paul Grund designed all the research activities of the NPSinEurope.eu project and proposed the overall study design. Together with Lenka Vavrincikova, Hana Fidesova, and Barbara Janikova, he designed all the study instruments and protocols. Barbara Janikova conducted the initial analysis of the desk review data provided by the country collaborators. Hana Fidesova conducted the initial analyses of interventions. Lenka Vavrincikova, Michal Miovsky and Jean-Paul Grund participated in the data interpretation and in the preparation of the manuscript. All the authors contributed to the development of this article and approved the final version of the manuscript.

**Conflict of interest:** Barbara Janikova: none; Hana Fidesova: none, Lenka Vavrincikova: none; Michal Miovsky: none, Jean-Paul Grund: none.

**Role autorů:** Jean-Paul Grund je autorem designu studie a všech výzkumných aktivit v rámci projektu NPSinEU.eu. Společně s Lenkou Vavrincíkovou, Hanou Fidesovou a Barbarou Janíkovou navrhl výzkumné nástroje a protokoly. Barbara Janíková provedla prvotní analýzu desk review, reportů jednotlivých zemí. Hana Fidesová analyzovala část věnovanou intervencím. Lenka Vavrincíková, Michal Miovský a Jean-Paul Grund se podíleli na interpretaci dat a přípravě rukopisu. Lenka Vavrincíková se podílela na přípravě rukopisu. Všichni autoři přečetli a schválili finální verzi rukopisu.

**Konflikt zájmů:** Autoři nejsou v žádném konfliktu zájmů. Za obsah a zpracování tohoto článku zodpovídají výhradně oni.

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