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New Psychoactive Substances among People Who Use Drugs Heavily. Towards Effective and Comprehensive Health Responses in Europe.

Department of Addictology
First Faculty of Medicine
Charles University in Prague
General University Hospital in Prague
Czech Republic

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INTRODUCTION: NPS IN EUROPE

New psychoactive substances (NPS) have emerged at the start of this millennium, initially attracting a small number of drug enthusiasts. Around 2010 the rise of brick & mortar NPS stores accelerated the diffusion of these unscheduled drugs in several EU countries and, with 400 new drugs notified to the EMCDDA in 2014, their proliferation as well. Scheduling new substances reportedly resulted in decreases in their overall availability but seems to fuel a rapid cycling but endless supply of new drugs and may also have contributed to their diffusion into more vulnerable population segments. With the rapid uptake of internet technology and ecommerce, *iDrugs* (Internet-sourced drugs) will increasingly find new customers in and beyond Europe. Drug services and drug policy makers have been slow to adjust to the "changing landscape of intoxication." With the critique of international drug policy peaking at last month's UNGASS on international drugs, yesterday's drug policies responses are unlikely to contribute to effective drug control in the 21st century and may actually impede implementation of effective evidence-based responses.

This thematic issue documents and explores the rise of NPS and internet sourced drugs in different subpopulations in Europe and the development of drug policy, monitoring and harm reduction interventions in response. The issue contains an EU-wide inventory of NPS epidemiology, a 5-country RAR study of NPS use among people who use drugs heavily, reports from transnational European research projects, several interesting studies from Czech researchers affiliated with Charles University, critical analysis and commentary.

The publication of this special issue was funded by a grant from the European Union to the NPSinEurope.eu project (JUST/2013/DPIP/AG/4774, "New Psychoactive Substances among Problem Drug Users – Towards Effective and Comprehensive Health Responses in Europe"). All articles in this issue have undergone the journal's full standard peer-review process.

Prague, 26 February 2016
Jean-Paul Grund, Lenka Vavrincikova & Michal Miovsky

INTOXICATION IN A GLOCALISED WORLD

Three Different Windows on the Changing European Landscape of Intoxication

New Psychoactive Substances (NPS) have become a major challenge to public health and drug policies in Europe (EMCDDA, 2014). In 2014, 101 NPS were notified to the EMCDDA's Early Warning System (EWS), twenty more than in the previous year, when 81 new drugs were identified. By the end of that year the EWS had recorded over 450 substances in total since 2005, more than half in the last three years alone. Synthetic cathinones (31 substances) and synthetic cannabinoids (30 substances) represented almost two-thirds of the drugs newly notified in 2014 (EMCDDA, 2014, 2015).

This special issue of *Adiktologie* brings together a collection of papers from three EU-funded projects that touch on different aspects of the use of new psychoactive substances. It provides important information on a seemingly inevitable by-product of the present responses to the rapidly changing landscape of intoxication: the diffusion of powerful synthetic stimulants in both traditional and new cohorts of (young) people that are most vulnerable to the harms they pose.

The special issue also presents important information on the *Glocal* driver of the NPS phenomenon, the Internet, which is revolutionising the way humans relate to drugs and drug markets, just as it does for just about any other commodity, except perhaps mother's milk. Indeed, it is not so much that the drugs are new – e.g. many synthetic cannabinoids were already described in academic and commercial research in the 1970s – but the ease with which we gather information about drugs nowadays and the way we obtain these are unprecedented. *iDrugs* is perhaps a better term to capture today's and tomorrow's sweeping changes in Europe's drug culture. The glocalisation of drug trends makes the development of an appropriate and timely response a high priority for policy makers at every policy level in the EU, including that of local communities.

The third set of papers reports on a set of useful tools that local communities can use in developing information-based responses to NPS. The issue is completed by a discussion of the definition of "user quantities" (exempting one from prosecution for drug possession) in the Czech Republic – a thorny issue of relevance to several other EU member states – and by a thoughtful expose on the need for epidemiological vigilance and continued government commitment to a health- and harm reduction-based response to the consumption of psychoactive drugs in the European Union by the Head of the Health Consequences and Responses Sector of the European Monitoring Centre for Drugs and Drug Addiction.

"New Psychoactive Substances among Problem Drug Users – Towards Effective and Comprehensive Health Responses in Europe" (NPSinEurope.eu) focuses on the increasing diffusion of NPS into populations of people who use drugs heavily (PUDH) across the European Union. The EU-wide overview of NPS consumption, markets, and policy responses reported by Janíková and her colleagues and the five-country Rapid Assessment of new drug consumption patterns among PUDH, reported by Grund and his colleagues aim to inform, first of all, the development and implementation of pilot harm reduction interventions targeting NPS use among PUDH and the skills and capacity training of both professionals and peer service providers, reported by Schiffer and Schatz.

"*As flowing water falls to seek the lowest point*" (Woodward, 2008), these studies suggest that NPS are increasingly diffusing into those segments of the drug-using population that are most vulnerable to their potential harms. NPS use among PUDH is reported in 10 EU countries, mostly in local studies, while the injecting of NPS is reported in seven countries. Synthetic cathinones, phenethylamines, and piperazines are drugs that are commonly injected by PUDH, while synthetic cannabinoids and tryptamines are used less often (Janíková et al., this issue). While legislative interventions have reduced the overall availability of NPS to the general public, Grund and his colleagues describe how the closure of brick-and-mortar stores in the Czech Republic, Poland, and Romania and subsequent restrictions on Internet sales have probably contributed to the diffusion of synthetic stimulants among PUDH, in addition to various pull and push factors, such as the reliability of the quality of NPS and, in contrast, the continued punitive drug testing in drug treatment programmes. This RAR study describes important mental health harms asso-

ciated with heavy NPS consumption, greatly increased injecting rates, and other risks for BBV transmission and drug overdoses. The overall response to NPS lags far behind in most of the countries that are affected. Interventions specifically responding to NPS use by PUDH have only been identified in three countries; Finland, Ireland, and the United Kingdom.

Schiffer and Schatz describe the impressive efforts of the local partners in the Czech Republic, Greece, Poland, and Portugal that have implemented innovative new approaches to NPS among PUDH and towards heavy use in nightlife and party settings. An example is "*Netreach*", a web-based harm reduction intervention, described by Pires, Valente, and Caudevilla. They argue that the emergence of empowered and global online drug cultures has shaped the way people purchase and use drugs, search for drug information, and share drug use experiences and information with their peers. This presents both an opportunity and a challenge to harm reduction services, according to the authors, who present the Netreach intervention framework and two examples of the methodology that adjusts the harm reduction philosophy and outreach practice to the online environment.

Drápalová and her colleagues present the outcomes of a literature review on the utility of existing risk assessment procedures for use at the local level and argue that an evidence-based drug policy demands systematic assessment of new drug trends before control measures and other interventions are developed – not only in national policy making but equally at the local level. This study was part of the EU-funded Local PASS project, which developed a standardised local system for *early identification, risk assessment,* and *intervention development* in response to new developments in psychoactive substance use. Otte and her colleagues present a short overview of the Local PASS project and summarise its results. In contrast with the drug trends we know from the 20th century, trends in drug consumption no longer necessarily start in (cultural) capitals or harbour cities. With the rise in the availability of *iDrugs* – both unscheduled and scheduled psychoactive substances sold via surface and Deepweb Internet drug markets – and the penetration of Internet technology into all corners of society, drug trends may now emerge in any community, large or small, urban or rural, largely independently from one another.

The principal outcome of the Local PASS project, a dedicated Toolkit, based on the principles of RAR, but sensitised to the 21st-century interaction between local drug-using environments and the virtual world of iDrugs, allows local stakeholders in drug policy to systematically and in a timely manner identify and assess local trends in (alcohol and) drug consumption in the various communities that make up the local population, with a particular focus on youth.

Grohmannová and her colleagues and Drápalová and Běláčková present the results of two studies that emanated from the i-Trend project and represent the two sides of *iDrugs* – their online sales and the vivid Internet communities that have emerged around any substance imaginable. Grohmannová and her colleagues report on the increasing online availability of new synthetic drugs (NSDs) to Czech citizens since 2010, with online outlets offering 145 different substances in 2015 – mostly synthetic cannabinoids and synthetic cathinones. 63% of those were not previously identified in the Czech Republic and are not controlled. Drápalová and Běláčková detail the wide range of information on NPS that is being shared online. (Young) Czech people go online and openly share trip reports and discuss their experiences with the use of NPS and their purchase, often supporting their posts with information from other sources, including references to scientific publications. Harm reduction and peer counselling are apparently an important component of the discussions that are analysed. Interestingly, an increasing number of studies have detailed the substance of the online discussions, which span a wide range of topics, which include acquisition sources and strategies, including home manufacture, quality control, accurate dosing and mode of administration and preventing problems or loss of control, and are characterised by a high level of concern for safety and harm reduction (Barratt, Ferris, & Winstock, 2014; Hearne, Alves, Van Hout, & Grund, 2016; Móró & Rácz, 2013; Soussan & Kjellgren, 2014). In line with the findings presented by Grund and his colleagues, Drápalová and Běláčková's analysis also suggests that after a number of popular Czech Internet shops were taken down in 2013, forum members simply started spending their digital crowns in online NPS stores registered outside the country.

Mravčík and his colleagues discuss the often mystifying issue of a "quantity greater than small" and compare the definitions used in the Czech Republic with those in selected countries. In anticipation of a review of the legal terminology on drugs by the Czech Constitutional Court the authors propose a legal definition of "illicit drugs" that they hope will fuel further expert and public debate. It is important to understand that whatever definitions politicians, researchers, or judges come up with, 68% of young Europeans consuming NPS sourced these drugs from friends (TNS Political & Social, 2014).

All the studies in this special issue emphasise the need for further research, information exchange, and dialogue between communities of people who use drugs, drug services, and Early Warning Systems. The tools developed in the NPSinEurope.eu, Local Pass, and i-Trend projects are apt and complementary. They build on the principles of RAR, which has proven its utility in a variety of contexts far beyond the drug policy area (Stimson, 2009; Needle, Trot-

ter, Goosby, Bates, & Von Zinkernagel, 2000; Stimson et al., 2006). These instruments will support stakeholders in creating information-based drug policies for the 21st century at all levels of policy making.

However, reliable fact-based information and appropriate tools are merely the instruments of policy making. As Hedrich points out in her excellent letter to the editor, these need to be complemented by political commitment and appropriate funding.

Utrecht, 24 February 2016
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Obsah

ODBORNÉ ZAMĚŘENÍ ČASOPISU / SCOPE AND LIMITATIONS

ANOTACE

Časopis ***Adiktologie*** vychází od roku 2001 a stojí na mezioborovém přístupu k návykovým látkám, jejich užívání a uživatelům. Navazuje na linii tradičních časopisů v tomto oboru, jako je např. ***Addiction*** a další významné profesionální časopisy sdružené v ISAJE (International Society of Addiction Journal Editors). Časopis uveřejňuje články jak z oblasti klinického, tak preklinického výzkumu a integruje současně různé přístupy rozvíjené na poli závislostí (jako např. public health nebo mental health). Jeho ambicí je mj. facilitovat vývoj vzdělávání v oblasti závislostí, propojovat výzkum s praxí a v jejich kontextu pak kultivovat aplikaci právě mezioborového přístupu. Časopis též přináší přehledy, kazuistiky, inovace, komentáře, zprávy z cest a kongresů, knižní recenze a různá oznámení.
Pokyny pro autory: www.adiktologie.cz

The Adiktologie journal has been published since 2001. It is based on an interdisciplinary approach to addictive substances and their use (and/or users). It follows the line of traditional journals in this field, such as Addiction and other significant professional periodicals associated in the International Society of Addiction Journal Editors (ISAJE). The journal publishes articles concerning both clinical and pre-clinical research, integrating various approaches developed in the field of addiction (including public health and mental health). Its key ambition is to facilitate the development of training and education in addiction and provide a linkage between research and practice involving the cultivation of the application of an interdisciplinary approach. In the journal, you will also find reviews, case histories, innovations, comments, reports from study trips and congresses, reviews of books, and various announcements. Guidelines for authors: www.adiktologie.cz

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PŮVODNÍ PRÁCE

Císařovy nové šaty?

Výsledky studie mapující situaci v oblasti užívání nových psychoaktivních látek mezi problémovými uživateli drog pomocí metodiky Rapid Assessment & Response v pěti členských státech EU

GRUND, J-P. C.[1,2,3], VAVRINČÍKOVA, L.[1], JANÍKOVÁ, B.[1], FIDESOVÁ, H.[1], MIOVSKÝ, M.[1]

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VÝCHODISKA: *Cílem projektu EK DPIP (NPSinEurope.eu) je přispět k inovativním a efektivním intervencím v oblasti podpory zdraví ve vztahu k aktuálnímu fenoménu užívání nových psychoaktivních látek (NPL) u problémových uživatelů drog (PUD). Celkem v pěti různých zemích jsme provedli studii užívání NPL za využití metodiky rapid assessment and response (RAR), jejímž cílem bylo shromáždit relevantní podklady pro realizaci těchto nových intervencí.* ***CÍLE****: Identifikovat a zdokumentovat nový fenomén užívání NPL mezi PUD v pěti členských státech EU a zmapovat rozvoj opatření, jimiž se tyto země snaží reagovat na vzniklou situaci.* ***METODY****: Přezkum dostupné dokumentace o situaci v oblasti NPL na úrovni jednotlivých států, bleskový internetový průzkum dostupnosti NPL na internetových i tradičních drogových trzích a ohniskové skupiny s hlavními aktéry.* ***VÝSLEDKY****: K popularitě NPL přispěly tzv. „smart shopy, v ČR známé jako „Amsterdam shopy", které však byly v reakci na legislativní opatření většinou zavřeny nebo musely radikálně omezit svůj sortiment. Množství nejrůznějších NPL je k dispozici prostřednictvím specializovaných internetových stránek nebo v rámci tradičních struktur orientovaných na prodej drog. Injekční užívání mefedronu, MDPV nebo jiných syntetických stimulancií mezi PUD, byť v různé míře, hlásí Česká republika, Polsko a Rumunsko. V Portugalsku a Řecku není užívání NPL mezi PUD tolik rozšířeno. V Řecku byl u PUD zaznamenán příklon ke kouření metamfetaminu.* ***ZÁVĚRY****: Mezi populacemi PUD se rozmáhá užívání syntetických stimulancií. Trendy v oblasti užívání nových drog jsou stále méně předvídatelné. Odvíjejí se od nabídky jednotlivých látek (jak prostřednictvím tradičních distribučních kanálů, tak internetových prodejních portálů), jejich legálnosti/legislativních opatření, místních preferencí, dostupnosti tradičních látek a množství externích faktorů.*

KLÍČOVÁ SLOVA: NOVÉ PSYCHOAKTIVNÍ LÁTKY (NPL) – PROBLÉMOVÍ UŽIVATELÉ DROG (PUD) – RAPID ASSESSMENT AND RESPONSE (RAR) – MINIMALIZACE RIZIK (HARM REDUCTION) – PLÁNOVÁNÍ INTERVENCÍ – PROTIDROGOVÁ POLITIKA

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ORIGINAL ARTICLE

The Emperor's New Clothes?

Findings from the NPSinEurope.eu Rapid Assessment and Response Study of Consumption of New Psychoactive Substances among People Who Use Drugs Heavily in Five EU Member States

GRUND, J-P. C.[1,2,3], VAVRINCIKOVA, L.[1], JANIKOVA, B.[1], FIDESOVA, H.[1], MIOVSKY, M.[1]

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BACKGROUND: The EC-DPIP NPSinEurope.eu project contributes to innovative and effective health promotion interventions targeting the emerging use of New Psychoactive Substances (NPS) among people who use drugs heavily (PUDH). In five countries, we conducted a rapid assessment and response (RAR) study of NPS use, aimed at informing these emerging interventions. AIMS: To identify and document the emergent use of NPS among PUDH in five EU member states and map the developing response in these countries. METHODS: Desk review of the national NPS situation, an Internet Snapshot of NPS availability in offline and online drug markets, and focus groups with key stakeholders. RESULTS: Smart shops boosted the popularity of NPS, but after legislative action most were closed or severely restricted their assortment. A variety of NPS are available via websites and traditional drug-dealing structures. The injecting of mephedrone, MDPV, or other synthetic stimulants among PUDH is reported in the Czech Republic, Poland, and Romania, to varying degrees. In Portugal and Greece, NPS are less prevalent among PUDH. Greek PUDH have turned to smoking methamphetamine. CONCLUSIONS: Synthetic stimulants are increasingly diffusing into PUDH populations. Emerging drug trends are increasingly unpredictable, subject to (offline/online) availability, legal status/action, local preferences, access to traditional substances and a range of environmental variables.

KEY WORDS: NEW PSYCHOACTIVE SUBSTANCES (NPS) – PEOPLE WHO USE DRUGS HEAVILY (PUDH) – RAPID ASSESSMENT AND RESPONSE (RAR) – HARM REDUCTION – INTERVENTION PLANNING – DRUG POLICY

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1 INTRODUCTION

New Psychoactive Substances (NPS) are becoming a major challenge to public health and drug policies in Europe and have become a high priority in Europe (EMCDDA, 2013, 2014, 2015). We report the outcomes of a "Rapid Assessment and Response" (RAR) among people who use drugs heavily (PUDH) of NPS use and the associated risks and harms in five selected countries – the Czech Republic, Greece, Poland, Portugal, and Romania.

UNODC defines NPS 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" (United Nations Office on Drugs and Crime, 2013). This definition bases 'NPS Status' solely on the legal status of the substance, while very different substances are classified as NPS, with chemical structures and/or effects often similar to controlled substances. The actual scheduling of psychoactive substances varies by country and changes regularly. Thus, the boundaries of NPS are rather ambiguous. Furthermore, elsewhere UNODC equates NPS with a linked concept, that of new or emerging drug trends (United Nations Office on Drugs and Crime, 2014). But where NPS in most cases qualify as a new drug trend, the reverse relationship is not necessarily true, as new drug trends may well include substances which in some countries are completely new, but well-known in others (cf. home-made methamphetamine in Greece and the Czech Republic). In developing appropriate harm reduction interventions, the actual scheduling status – NPS or controlled substance – is less relevant than understanding the actual substance that may newly emerge and the specifics of the community involved. Therefore, in this paper the focus is on 'new drug trends', which includes the emergent availability and use of substances *new to a community*, country, or culture, regardless of their legal status.

Harmful patterns of NPS use are observed throughout Europe in both traditional and new drug-using populations (see e.g. Janikova et al., this volume). Traditional epidemiological labels, such as injecting drug user' or, more generally, 'problem drug user', do not always accurately describe harmful drug consumption patterns. The populations affected may not necessarily identify with or may even object to such internal, or dispositional, attributions of their drug consumption (Davies, 2013), which are furthermore fraught with moral connotations and instrumental in the stigmatisation of people who use drugs (Ahern, Stuber, & Galea, 2007; Rehm et al., 2013; Stallwitz & Shewan, 2004; van Boekel, Brouwers, van Weeghel, & Garretsen, 2013). Although the EMCDDA recently changed its definition of 'problem drug use' (EMCDDA, 2009; in Stallwitz, 2012) to 'high-risk drug use' (Thanki & Vicente, 2013), the resulting label of 'high-risk drug user' continues to equate (high-risk) behaviour with personal traits and is equally prone to negative moral connotations and stigmatisation as a problem drug user (Stallwitz, 2012; Ahern, Stuber, & Galea, 2007; White, 2009). In this paper, we therefore speak of *people using drugs habitually or heavily*, a term that neutrally describes people's drug use behaviours rather than defining the whole person and reflects the diversity of the issues and populations targeted in this study.

In this paper we focus on some of the similarities and differences in emerging drugs among PUDH and the developing response in the five participating countries. As noted, these may include both unscheduled and scheduled substances. The individual country data is reported in Vavrincikova et al. (2016).

2 METHODOLOGY

Five member states that reported heavy NPS consumption were included in the RAR – the Czech Republic, Poland, Romania, Greece, and Portugal. The study countries and implementing partners for the NPSinEurope.eu project were selected from among interested candidates on the basis of (i) epidemiological considerations and available information on new trends in heavy drug consumption in the EU and (ii) the candidate partners' capacity and track record in both conducting (RAR) research tasks and implementing pilot interventions. Our aim was to capture the various recent shifts in heavy drug use witnessed in the EU, in traditional settings of heavy drug consumption and in emerging drug use risk environments. The first three countries have noted strong increases in the availability and consumption of NPS, in particular of synthetic cathinones, among traditional PUDH populations and in new generations of vulnerable young people, while in Greece the 'controlled' synthetic stimulant methamphetamine – home-made and rebranded *Sisha* (Glass) – has replaced heroin among PUDH in Athens. In Portugal, the use of NPS has not been reported among populations traditionally involved in heroin and/or cocaine or in opioid substitution treatment and seems largely limited to nightlife participants and festival visitors. Although drug use tends to be of an overall more controlled and episodic nature in these leisure environments, heavy use is nonetheless not absent (Duff, 2005; Parker, Aldridge, & Measham, 1998; Parker, 2009) and 'slipping' from recreational to problem drug use is reportedly growing (Parker, 2009).

The choice of an RAR methodology (Rhodes, Stimson, Fitch, Ball, & Renton, 1999; Stimson et al., 2006) boils down to the need for rapid results, in order to narrow the gap between the fast-paced NPS phenomenon and the development of interventions. The local RAR studies consisted of three parts: (i) a desk review of the national NPS situation; (ii) an assessment of NPS availability in offline and online

drug markets, and (iii) focus groups with drug-using and professional stakeholders in NPS.

Each partner organisation conducted a desk review of published and unpublished information pertaining to the key RAR questions on NPS consumption, consulting relevant national and EU sources of information. The offline availability of NPS was determined by a literature review and the inspection of data from early warning systems, drug testing programmes (where available), and law enforcement or other relevant data sources, as well as in the separate focus group discussions. Online availability was assessed using the EMCDDA Internet Snapshot Methodology, a rapid assessment of the availability of psychoactive substances online, conducted within a limited time frame (EMCDDA, 2011).

In each country focus groups were organised with (i) knowledgeable professionals and (ii) with PUDH involved in NPS consumption in two different cities/regions with evident NPS use. In total, 19 focus groups were conducted, with an approximately even representation of professionals and people using drugs in each group. In total, there were more than 110 predominantly male participants. The focus group participants were recruited by the partner organisations, using the criteria for participation in the RAR guidelines developed by the Department of Addictology at Charles University. PUDH were involved in all countries, except Portugal, where NPS use has barely been reported among PUDH in contact with harm reduction services and nightlife participants were enrolled in the focus groups. These participants may or may not consume drugs heavily, but this was not an inclusion criterion. The PUDH participants were 18 or older, active drug consumers, and with experience with NPS, and were recruited at different drug services, harm reduction programmes in particular. Over half of these participants had used NPS at least three times in the past 30 days before the focus group. Participants in residential drug treatment were excluded from participation. Balance in gender was taken into consideration. The professionals were 18 or older, involved in NPS service provision (harm reduction, prevention, outreach, medical services, or drug treatment) or in law enforcement or drug policy making (public health; law enforcement; national, regional, and municipal authorities). The focus groups took place in eight different municipalities: Prague and Pilsen in the Czech Republic, Athens in Greece, Krakow and Warsaw in Poland, Porto and Lisbon in Portugal, and Bucharest in Romania. The focus groups were led by a moderator and a chairperson; notes were taken by another team member. The focus group discussions were recorded and electronically transcribed. The oral informed consent of all participants was recorded before the actual focus group commenced. Each focus group ran for two hours on average.

Stepwise content analysis of the five-country RAR data allows the national situation, cultural interpretations, and meanings of NPS use across user populations and national borders to be described. The findings of these three sub-studies were first compiled in national reports using the grids and data forms provided by the project. In the second step, these national RAR reports and the corresponding materials were entered into a largely qualitative content analysis across the five sites in a search for similarities and differences and consensus and dissent between the countries. The analysis aimed to describe the various viewpoints and the needs of the affected communities and other stakeholders that need to be addressed in policy and service development. Where it was useful and feasible, the data was quantified using a "quasi-statistics" approach (Maxwell, 2010; Becker, 1958). Each data source – the literature reviews, the data on the offline and online availability of NPS, and the focus group data – was first analysed separately. Subsequent triangulation of the various sources aimed at finding "consensus and dissent" between the various data sources and across sites and allowed for a more comprehensive understanding of the findings and a firmer assessment of their validity.

3 FINDINGS

Overall, few studies in the five countries that were investigated focus specifically on NPS consumption among PUDH. Most of the literature that was reviewed focused on the most popular substances and those most used in the general population. Likewise, NPS brand names and chemical compounds in branded products are not always clearly defined in the literature that was investigated. The mixtures in various blends and branded products may vary according to the vendor, over time, and in terms of geography. Branded products may contain different chemicals and compounds may be sold under different brand names in different sales channels and countries. This may complicate comparisons between different studies and countries or over time.

3 / 1 Availability of NPS in the participating countries

NPS are available from a variety of sources. Smart shops boosted both the availability and popularity of NPS, but following legislative action most were closed or severely restricted their assortment. This resulted in a significant decrease in the overall availability of NPS to consumers in general, but has probably contributed to their diffusion into more familiar drug distribution structures, such as friendship networks and street drug markets catering to PUDH.

NPS availability increased sharply with the introduction of brick-and-mortar outlets in the Czech Republic (2009), Poland (2009), Portugal (2007), and Romania

(2009). At the peak of this phenomenon, shortly before they were closed, there were 41 physical outlets in the Czech Republic (2011), 158 in Romania (2011), and over 50 in Portugal (2012). In all four countries the overall availability of NPS declined rapidly after the closure of the brick-and-mortar shops. *"Since the smart shops have closed, I have never heard about these drugs again"* (focus group respondent, Portugal). Using existing sanitary legislation, over 1300 shops were closed in Poland in 2010, but – as they are not counted – an unknown number continues to sell various NPS (Malczewski, Krajowe Biuro Do Spraw Przeciwdziałania Narkomanii, personal communication, March 2016). In Greece, NPS emerged in 2010 but gained only minor attention as both the media and political attention were preoccupied with the rising use of "Sisha" (a crude, home-made methamphetamine product that is smoked) among PUDH in that same period. First noticed in 2012, there are reportedly less than 10 brick-and-mortar NPS shops, primarily in northern Greece, while several proprietors have been charged with selling controlled substances in ongoing court cases.

Figure 1 / Obrázek 1
Stock Clearance in Anticipation of UK Legal Changes on April 6, 2016
Výprodej zásob v reakci na očekávané legislativní změny ve Velké Británii k 6. 4. 2016

Although the closure of physical outlets resulted in important reductions in (novice) NPS consumption, websites targeting the countries being studied mail NPS to anybody with a credit card or online banking. A variety of NPS are available via websites; synthetic stimulants prevail. Interestingly, while 'international' web shops mostly have fixed (and comparable) prices, which may be displayed in different currencies, on country-specific sites NPS unit prices may vary considerably. For example, a gram of ethylphenidate costs €8–9 in Poland and €19–21 in Portugal.

The variety of NPS brand names (*Figures 1 and 2*) is enormous and it is very difficult to identify any consistent relationship between brand names and the chemicals these represent, both between and, as the desk review noted, within countries. The chemical names of the compounds on sale are often incomprehensible to the average consumer and sometimes it is impossible to match the brand name with a chemical compound.

After (most) physical NPS shops were formally closed in the Czech Republic, Poland, Portugal, and Romania following legislative action (from 2011 to 2013), offline sales increasingly moved into black markets and the "shadow economy", such as sex shops, casinos, or bodybuilding shops, which may be due to the unclear legal status of NPS. These outlets offer synthetic cathinones, phenethylamines, synthetic cannabinoids, and various other substances. Synthetic cathinones and phenethylamines were relatively often encountered online in the Czech Republic, Poland, and Portugal. Synthetic cannabinoids were frequently available online in Portugal and Romania. Importantly, once bought in bulk online, NPS, particularly synthetic stimulants, are increasingly retailed through friendship networks and traditional drug-dealing structures and PUDH markets. In these traditional markets, NPS are increasingly used to cut scheduled substances, such as methamphetamine in the Czech Republic. The RAR suggests that in Romania, Poland, and the Czech Republic the diffusion of NPS into vulnerable populations may have been facilitated by changes

Figure 2 / Obrázek 2
RAR cloud of NPS types, brand names, and prevalence figures
Typy NPL, obchodní názvy a prevalenční hodnoty (cloudové znázornění na základě dat z analýzy RAR)

in the legal status of NPS. Shortly before NPS were scheduled, many web shops started selling off their remaining stock at drastically reduced (wholesale) prices.

Two relatively new drug trends studied in the RAR evolved around substances that do not conform to the definition of NPS (EMCDDA, 2013, 2014, 2015; United Nations Office on Drugs and Crime, 2014; UNODC, 2013) as these concern scheduled drugs, the use of Sisha in Greece and of diverted pharmaceutical opioids in rural areas of the Czech Republic. The Czech data suggests the existence of a sizable 'grey' market in diverted pharmaceutical opioid painkillers, such as Fentanyl and extended-release morphine. As we discuss below, both of these new drug trends among PUDH may well be fostered by a similar set of drivers.

● 3 / 2 Extent and nature of NPS use among PUDH

The use of NPS is considerably higher among PUDH than in the general population in the Czech Republic, Poland, and Romania. In both Portugal and Greece, NPS have reportedly not made significant inroads into PUDH populations or raised concern among drug service providers. *Figure 2* provides an impression of NPS consumption in the RAR countries and the branded products detected by the local RAR teams and suggests that synthetic cathinones are of particular concern in their countries.

The use of NPS among PUDH primarily concerns the injecting of synthetic cathinones and varies widely between the countries, from (nearly) absent in Portugal, to almost one and two thirds in cities in, respectively, the Czech Republic and Romania, to unmeasured, but clearly present, in Poland. The injecting of mephedrone, MDPV, or other synthetic stimulants among PUDH is reported in the Czech Republic, Poland, and Romania, but to varying degrees. In Portugal and Greece, NPS are of less concern, both among PUDH and in the nightlife setting. In Portugal, this is associated with the decriminalisation and easy availability of traditional drugs, such as heroin, cocaine, or ecstasy. But in Greece, many PUDH have switched from heroin to Sisha since 2010–2011, as economic austerity measures hit the poor in particular and heroin ceased to be affordable. A recent regional trend in the Czech Republic concerns the injecting of diverted opioid pain killers (fentanyl & Vendal-Retard® (extended-release morphine) in western and southern Bohemia. In 2014 5.1% of Czech people who inject drugs (PWID) had injected pharmaceutical opioids (23.6% in the Pilsen region).

The closure of brick-and-mortar stores in the Czech Republic, Poland, and Romania has reportedly resulted in decreases in NPS consumption in the general population and among PUDH, although in all three countries the injecting of synthetic stimulants continues to be an important concern. Lack of access to electronic payment options is perhaps still limiting personal purchase online, but NPS are increasingly obtained through traditional drug trafficking structures and are also mixed into and sold as traditional drugs.

3 / 2 / 1 Patterns of use

In the Czech Republic, Romania and Poland, synthetic stimulants are primarily injected among PUDH with long histories of injecting heroin or (meth)amphetamine. Those without such histories reportedly mostly snort, smoke, or swallow a wide variety of NPS. For younger consumers in particular, NPS presented a more or less typical pathway into escalating drug use and, finally, injecting. *"I didn't use heroin before legal highs. When they first appeared on the market, I smoked them (synthetic cannabinoids), then I was sniffing powdered drugs and then, because the effects diminished, I started injecting"* (focus group respondent, Romania). In Poland and Romania the majority of people who inject NPS were previously involved primarily in heroin use (including people currently in OST), as are many of the Sisha consumers in Greece. In the Czech Republic, synthetic stimulants are mostly injected as substitutes for or in addition to methamphetamine.

Many Greek PUDH have replaced heroin with Sisha, which is smoked (±80%) or injected (20%). In the other countries synthetic stimulants are used in addition to traditional injectable drugs. The PUDH in the focus groups also reported combined use of the two drugs. This pattern may grow as Greece recovers from the economic crisis and heroin comes within the financial reach of consumers again. Indeed, where available, heroin is often used to take the edge off excessive synthetic stimulant use: *"You can inject 40 times and you don't get out of a state of panic. You can only ease your feelings if you shoot heroin"* (focus group respondent, Romania).

3 / 2 / 2 Factors in choosing NPS

Figure 3 summarises the positive features PUDH associate with NPS. Overall, low price and easy availability have contributed to the emergence and spread of NPS among PUDH, in particular when sold in brick-and-mortar stores. But, beyond these attractions and curiosity, the legal status of NPS and preventing sanctions when in treatment seem equally important incentives for (continued) NPS use by PUDH. In particular, avoiding heavily policed drug markets is viewed as an important benefit. Legal status seems less of a factor when NPS are bought through black market structures. People in OST reported that NPS were not detected by the drug assays commonly used in programmes. *"Since I've been on methadone (treatment) I have never been as clean as I have been in the last two years. How do I do it? Instead of amphetamine I use cathinones"* (focus group respondent, Poland). Where the use of e.g. methamphetamine might result in dismissal from the programme or other

sanctions, the use of NPS goes undetected. The injecting of diverted opioid painkillers in the Czech Republic is associated with the unstable quality and availability of heroin outside the main cities and the lack of OST in these regions.

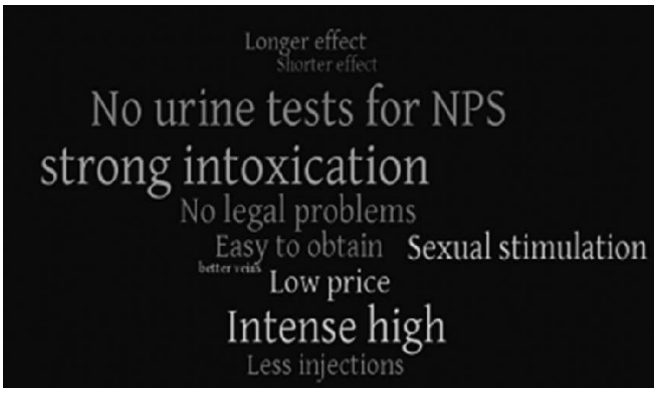

Figure 3 / Obrázek 3
RAR cloud of positive features of NPS noted by PUDH
Pozitivní charakteristiky NPL dle vyjádření PUD (cloudové znázornění na základě dat z analýzy RAR)

Positive effects reported

The constant purity of NPS, their strong intoxicating effects, and longer or shorter duration (both mentioned) seem at least equally important in explaining the popularity of NPS. The intense high of injected synthetic stimulants and their aphrodisiac effects were mentioned in the Czech Republic and Poland. In Greece, these same qualities were attributed to smoked methamphetamine. People injecting diverted pharmaceutical opioids praised the constant high, purity, and duration of the effect, reportedly resulting in reduced injecting rates and consequently less damage to their veins and fewer skin and soft tissue infections (SSTIs). They spend less time on injecting and chasing poor-quality heroin and more time with family and friends and noted improved social relationships.

NPS seem the drugs of first choice for only some of those consuming them. In Romania both PUDH and expert opinion estimate that half of PUDH have a preference for synthetic stimulants. *"NPS give me more possibilities. Never before in my life have I used so many different drugs"* (focus group respondent, Poland). But in all the countries NPS are also used because traditional drugs of preference are less available or of low or inconstant quality. *"Yes, many people started to use 'legal' drugs in order to diminish the physical pain from heroin withdrawal"* (focus group respondent, Romania).

Czech PUDH reportedly prefer methamphetamine over cathinones because of its predictability and euphoria and claim that methamphetamine is easier to control. But in Greece smoking methamphetamine is associated with serious loss of control. (We return to this paradox below.) New drugs are also increasingly used in combination, both with one another and with traditional drugs. Mixing cathinones with heroin, benzodiazepines, and other drugs was mentioned in the Czech Republic and Romania, while Greek PUDH reportedly mix heroin and/or benzodiazepines with methamphetamine.

Negative effects reported

Short-term health consequences are not monitored in detail in any of the RAR countries, nor is there information available about the long-term effect of most NPS. Nonetheless, *Figure 4* shows clearly that PUDH attributed many more negative features to NPS consumption. Both the focus groups and desk review suggest that injecting synthetic stimulants may quickly lead to strong cravings and a lack of control over one's drug intake (psychological dependence) and in strongly increased rates of injecting, resulting in collapsed veins and skin and soft tissue infections (SSTIs).

Figure 4 / Obrázek 4
RAR cloud of negative features of NPS noted by PUDH
Negativní charakteristiky NPL dle vyjádření PUD (cloudové znázornění na základě dat z analýzy RAR)

Other negative consequences that were reported included the risk of fatigue, exhaustion, or collapse, loss of appetite, and weight loss, sometimes resulting in wasting syndrome. Binging (consuming a drug for days without sleep) on high doses of synthetic cathinones and the associated prolonged sleep deprivation quickly increase peoples' vulnerability to a range of serious mental health problems, including panic attacks, paranoia, psychosis and (rebound) depression, short temper or rage, and memory and concentration disorders. *"The police have been looking for me since I started using a "Thor Hammer""* (focus group respondent, Poland). Mental health problems go hand in hand with solitude and social isolation. *"You get high together ... you stay together for five minutes ... then you run away, you cannot be together"* (focus group respondent, Czech Republic).

In the Czech Republic and Greece, the use of methamphetamine represents, respectively, a well-established and

a new drug trend. The Greek focus group participants reported high levels of mental health problems among PUDH, while HIV infection among PWID has recently increased significantly (Hedrich et al., 2013; Kentikelenis, Karanikolos, Reeves, McKee, & Stuckler, 2014). Greek drug service providers and PUDH seem to consider Sisha as the 'worst drug ever' – Greek PUDH have apparently not yet learned to 'live' with the drug. Although methamphetamine remains problem drug No. 1 in the Czech Republic, our data (indirectly) suggests that Czech PUDH (and service providers) seem to have come to terms with methamphetamine to some extent. In fact, the mental health harms attributed to Sisha in Greece sound very similar to those attributed to synthetic cathinones by focus group participants in the Czech Republic, Poland, and Romania. In the Czech Republic, these were often discussed in terms of being worse than methamphetamine. Both in Greece and Romania these new drug trends coincided with recent increases in HIV infection among PWID and appeared in a context of austerity. Studies have not found causal relations between the surge in HIV infection and the emergence of Sisha or cathinones and suggested that funding cuts for syringe exchange may offer a better explanation (Hedrich et al., 2013; Kentikelenis et al., 2014). Nonetheless, one could perhaps not imagine a worse moment in time for the introduction of powerful and unknown stimulants into PUDH communities, in particular those traditionally using opioids. Both the *drug's* pharmacological profile and important social *setting* variables (Moore, 1993a, 1993b; Zinberg, 1984) have changed drastically, resulting in an increased risk environment (Rhodes, 2009; Strathdee et al., 2010) in which PUDH are unlikely to develop a measure of control over the consumption of powerful and 'alien' drugs.

Risk of overdose

The injecting of synthetic stimulants may result in dose escalation and repetitive re-administration of drugs of unknown potency. Likewise, the difference between recreational doses and an overdose may be very narrow with some drugs, particularly when two or more substances are combined. PUDH have reported strongly increased heart rates, panic attacks, and even passing out when overdosing. They often self-medicate with benzodiazepines or antipsychotics. Deaths or mortality rates associated with NPS use are not available in the RAR countries studied, but, for example, in Poland the number of non-fatal overdoses has doubled in the last two years. Injecting pharmaceutical opioids is associated with a high risk of overdose, particularly for those switching from poor-quality heroin. The focus group respondents noted that SR morphine tablets and fentanyl patches are *"10–15 times stronger than the normal diluted heroin"*, which, in the case of the patches, is actually a gross underestimation.[1] They also noted that the patches are cut into parts and that *"it depends on how much material you have in the part of the patch. You can easily get it wrong and overdose"* (focus group respondent, Czech Republic).

Risk of infectious disease transmission

NPS injecting is associated with very high injecting rates (up to 30–50 times a day reported in Romania), particularly when sold in brick-and-mortar shops. More recently, reduced supply and increased prices have reportedly had a moderating effect on the frequency of NPS injecting, but our study suggests that significant minorities of PUDH in these five countries continue to inject NPS. Increased frequency of injecting and SSTIs can be considered a direct indicator and a proxy for the risk of HIV and HCV transmission. The focus group participants suggested that among PUDH the risks of HIV infection are quite similar to those associated with traditional hard drugs: sharing of drugs and injecting equipment and material (syringes, needles). According to PUDH, injecting cathinones may result in intense cravings once the substance is purchased and injecting at the point of sale. In these places clean syringes are usually absent and used equipment might be shared. NPS and Sisha were also associated with an increase in sexual activity while under the influence. *"This drug gives me enormous sexual excitement. Then I have to masturbate to relieve the tension. I really like it!"* (focus group respondent, Poland).

The aphrodisiac properties attributed to stimulants are reportedly an important incentive for their use among men who have sex with men. The Portuguese focus group reported on "*Slamming*" in the course of "*Chemsex*" – injecting methamphetamine or synthetic cathinones while having sex with a large number of (often unknown) partners over extended periods of time along with copious use of GHB and a range of other party drugs among gay men. *"We are aware, people travel… and use a substance, I don't know the name but it is a substance that they inject to increase sexual pleasure."*

● 3 / 3 Interventions and policies targeting NPS

In all countries the dominant response to NPS and new drug trends relies primarily on legislative and law enforcement interventions. The public health response to NPS use among PUDH is only starting to take shape.

Legislation scheduling NPS and prohibiting their sales have effectively shut down the brick and mortar outlets and also affected their online availability to Czech, Pol-

1/ Fentanyl is 50 to 100 times more potent than morphine and 25 to 40 times more potent than heroin by weight (NDEWS, 2015).

ish, Portuguese and Romanian nationals. Nonetheless, new NPS continue to emerge on the market, via online outlets in particular. Scheduling of online sales was followed in all four countries by NPS emerging in the "shadow economy" and in more traditional drug trafficking structures that overlap with both criminal and friendship networks (between 2011 and 2013).

Innovative harm reduction, prevention, and treatment responses dedicated to NPS have barely been developed in the five countries. Existing harm reduction organisations have difficulties in adjusting to these new drug trends. Some harm reduction programmes have started modest information campaigns on the potential risks posed by NPS. For example, Monar in Krakow distributes a deck of (football card-style) information cards on a wide range of new and known substances and SANANIM in Prague distributes information on NPS in its journal "Dekontaminace" (Decontamination), which is circulated via drug services nationally and online, and widely read among PUDH.

Drug testing is available in Portugal and mostly focuses on nightlife and festivals. In Prague, outreach programmes and low-threshold services collaborated with the Department of Addictology and the Toxicological Centre at the First Faculty of Medicine of Charles University in testing NPS samples from the PUDH market. Funded by the EU I-Trend project, the programme contributed to prevention, harm reduction, and research goals but was terminated after the I-Trend project ended.

Adaptation to the changed consumption patterns and the associated chaotic behaviours and mental health problems is complicated by economic conditions and political priorities in all five countries, but in particular in Greece and Romania. This has resulted in drastic budget cuts for drug treatment and needle exchange and harm reduction services. Both countries have faced rapid increases in HIV prevalence among PWID. Given the increased rates of injecting associated with NPS injecting, the cuts in syringe exchange funding are particularly disturbing. On the other hand, the replacement of poor-quality heroin by diverted pharmaceutical opioids in Czech rural regions seems an intriguing but clear indicator of the potential of substitution treatment.

Study Limitations. The limitations of our study centre on missing data or lack of detail and deviation from the research guidelines. The EMCDDA Snapshot Methodology presented some of the RAR teams with difficulties. In many cases it could not be established whether websites selling NPS were hosted and run by companies within the countries being investigated or elsewhere in or outside the EU. When products were offered in the local languages, this often involved computer-aided translations. Likewise, at some moments the UNODC classification of NPS and their toxicological complexities surpassed the chemistry skills of the project teams. Nonetheless, we found extensive similarities (Lincoln and Guba, 1985) across the five research sites between most of the core questions of this RAR, in particular concerning drug use patterns, consumer preferences, market factors, and the health consequences attributed to NPS, while differences between countries were explained by local peculiarities or variations in the risk environment of these drugs. Overall, the findings do not vary substantially from the data reported to EMCDDA. The variety in the data does not allow for estimates of the number or proportion of PUDH that use NPS or Sisha, but the desk review, the assessment of the offline and online NPS availability in the participating countries, and the focus groups bring together important and up-to-date new information on the actual trends in NPS consumption and the NPS market in the Czech Republic, Greece, Poland, Portugal, and Romania.

4 DISCUSSION

The RAR suggests that the uptake of NPS among PUDH varies between the countries that were investigated. PUDH have a preference for substances that resemble their traditional drugs of choice, opioids and in particular stimulants.

Clearly, in all of these countries the genie is definitively out of the bottle. We can distinguish both *pull* and *push* factors in the attraction of NPS. Strong intoxication, stable purity, and availability, but also avoiding law enforcement or sanctions when in drug treatment seem to fuel the popularity of NPS, in particular where traditional drugs of poor quality are sourced in unreliable, high-risk drug markets, effective treatment is underdeveloped, or contracting economies have led to illicit drugs ceasing to be affordable. In this context, NPS increasingly attract both aging populations of heavy opiate and stimulant consumers and new generations of vulnerable young people. The shift to methamphetamine smoking and its manufacture in residential areas of Athens certainly fits the larger trend towards stimulants, witnessed throughout Europe and beyond. At first hand, the rising use of diverted pharmaceutical opioids in the Czech Republic is at odds with this *chemical Zeitgeist*.

However, closer scrutiny of the data suggests that all these new drug trends among PUDH – whether these revolve around stimulants or opioids or around scheduled drugs or not – seem only superficially driven by pull factors, such as curiosity, a penchant for experimentation and intoxication, or other personal motives, but by push factors in particular. The available data for the Czech Republic and Romania suggests that the rise in the injecting of new synthetic stimulants coincided with reductions in the availability and quality of heroin and, in the Czech Republic, methamphetamine. The use of its smokable variant, Sisha, in Greece and the injecting of pharmaceutical opioids in the

Czech Republic are equally associated with shortages of the traditional drug of preference. In all these countries, the changing landscape of intoxication is further driven by the poor availability of OST and appropriate treatment options in general – whether structural or the results of austerity measures – and by punitive drug testing practices in OST programmes.

While legislative responses have reduced open sales in smart shops, their closure has pushed NPS underground and online. Changes in the legal status of NPS in Romania, Poland, and the Czech Republic reportedly facilitated the diffusion of NPS into vulnerable populations. Shortly before NPS were scheduled, web shops sold off their remaining stock at drastically reduced (wholesale) prices. Large NPS stocks may again end up in more vulnerable segments of the drug market across Europe, as UK web shops have started to sell off their remaining stock in anticipation of the April 6, 2016 UK Psychoactive Substances Act – a 'blanket ban' on (new) psychoactive substances (*Figure 5*). Furthermore, there are now also online wholesalers that exclusively sell large quantities of NPS (*Figure 6*). These practices suggest that 21st-century online drug distribution channels do not necessarily replace traditional distribution channels. In contrast, they seem to seamlessly harmonise with one another. This has important topical value for the epidemiology of NPS, synthetic stimulants in particular, and their diffusion into vulnerable populations.

The negative effects of NPS that were described were mostly typical stimulant drug effects, and long-term consumption of cathinones is described in similar terms to that of traditional stimulants and sometimes as more unpredictable and with worse mental health outcomes. Cocaine and methamphetamine use are associated with risk behaviours for the transmission of blood-borne viruses (BBVs), including high rates of injecting and sexual activity, unprotected sex, needle sharing, and HIV infection, while prolonged heavy use of both stimulants is associated with serious mental health problems (Grund et al., 2010). Whether these risks can be translated one-on-one to synthetic cathinones remains an open question, as few primary studies into the potential associations between these new stimulants or other NPS have been conducted.

The drug-related risks of BBV transmission reported in the RAR centre around high injecting frequency, the use of non-sterile injecting equipment, and other known risk behaviours. Sexual risk behaviours are less well explored

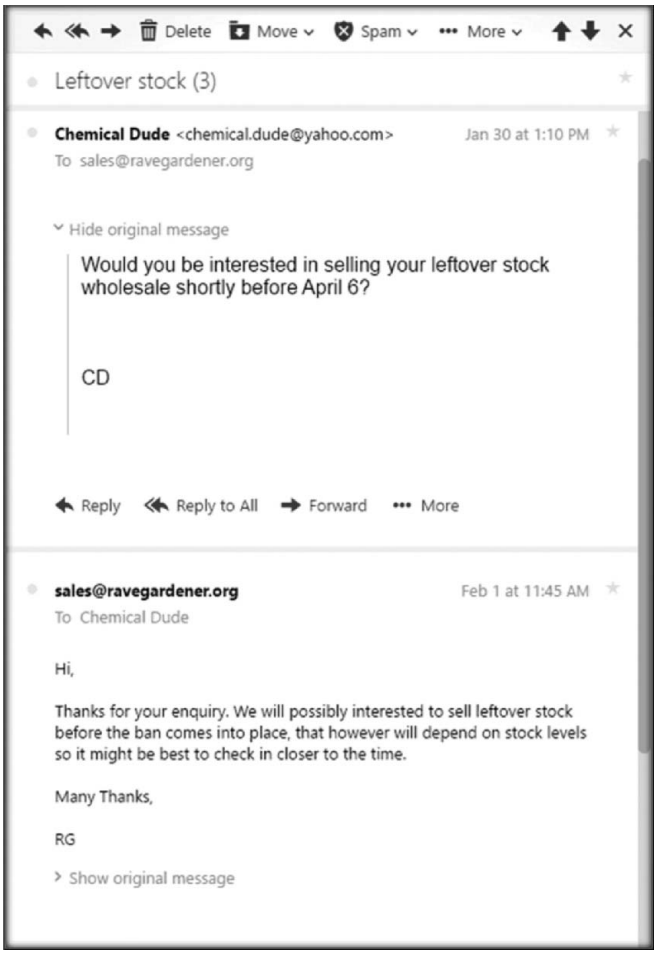

Figure 5 / Obrázek 5
Diversion Opportunities in Anticipation of UK Legal Changes on April 6, 2016
Možnosti přesunu NPL na černý trh v reakci na očekávané legislativní změny ve Velké Británii k 6. 4. 2016

Figure 6 / Obrázek 6
Online NPS Wholesale
Internetová velkoobchodní nabídka NPL

but are attributed to the aphrodisiac properties of stimulants. Slamming, reported by the Portuguese RAR team, has raised the concern of health authorities in Amsterdam (Knoops et al., 2015), London (Bourne et al., 2015; Kirby & Thornber-Dunwell, 2013) and Paris (Foureur et al., 2013). Slamming and Chemsex may be a "small sub-population behavioural trend" (Stuart, 2015), but our study suggests that sex on chemicals is perhaps one of the attractions of NPS that appeals to a wider population, while many studies suggest that the idea of chemically enhanced sex is neither new, nor determined by sexual preference (Cormier, 2015).

Pointers for intervention and policy development

Elsewhere we discussed the current legal framework of the five study countries (Vavrincikova et al., 2016) but the RAR suggests that legislative instruments and law enforcement are better used prudently with regard to NPS and with restraint; these clearly offer no panacea and may result in unanticipated consequences (Merton, 1936).

Given the high injecting frequencies reported, sufficient "personal" supplies of syringes and other injecting paraphernalia are a requirement for people to be able to protect themselves and their injecting partners. Focus group participants emphasised the importance of existing evidence-based public health interventions, such as needle exchange and OST, and the need for drug-checking programmes, also targeting PUDH scenes. Several EU countries allow some form of drug checking, albeit mostly on a modest scale. In Prague, the authorities allowed drugs from the street scene to be tested but did not extend the funding of the programme when EU funding ran out. Given the capricious nature of the NPS market and the ongoing penetration of NPS into vulnerable communities across Europe, the Union-wide introduction and scaling-up of drug testing programmes and careful monitoring of both existing and emerging drug scenes could greatly contribute to speeding up the development of appropriate and evidence-based policy responses.

Short communication and reporting lines between the drug scenes, outreach teams and public health services, and policy makers should facilitate the distribution of information on the dynamic NPS market and on consumption patterns and the potential risks – *in both directions*. Peer support and education strategies may reach heavy NPS consumers presently not connected with services. Where NPS are used on the street and result in public health and public order problems, drug consumption rooms may help both to stabilise chaotic drug consumption patterns and reduce the public nuisance, civic anxiety, and moral panic. Law enforcement bodies should be educated about more effective and humane policing options for handling consumers of synthetic stimulants in the public domain. Low-threshold opioid substitution treatment will probably benefit PUDH involved in NPS and heroin. Stimulant substitution treatment, e.g. with dexamphetamine, should be investigated for heavy consumers of both traditional and new synthetic stimulants. Substitution programmes should have evidence-based and person-centred rules. Failure to comply should be a reason for increasing treatment options, not for limiting access or dismissal.

The use of powerful diverted pharmaceutical opioids and the increasing number of legal synthetic opioids notified to the EMCDDA suggest that naloxone distribution and training should not only target traditional heroin consumers, but also be available to those taking newly emerging opioid agonists. Harm reduction education should be made a compulsory part of discharge protocols in all treatment – irrespective of the treatment philosophy. Closer cooperation between toxicological laboratories, medical institutions, and harm reduction services can facilitate proper and timely intervention in overdose cases. As the epidemics of heroin injecting have stabilised in Europe, the attention paid to drug injecting and HIV prevention is waning in many member states.

Our study and others suggest that there is little reason for reduced public health vigilance. To paraphrase the American abolitionist Wendell Phillips (1811–1884), eternal vigilance is clearly also the price of public health.

The role of the authors: Jean-Paul Grund designed all the research activities of the NPSinEU.eu, proposed the overall study design, designed and supervised the analysis, and drafted the present manuscript. Together with Lenka Vavrincikova, Hana Fidesova, and Barbara Janikova, he designed all the study instruments and protocols. Lenka Vavrincikova conducted the initial analysis of the desk review data provided by the country RAR teams. Hana Fidesova and Barbara Janikova conducted the initial analyses of, respectively, the assessment of NPS availability and the focus group data. Michal Miovsky 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.

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Role autorů: *Jean-Paul Grund je autorem koncepce všech výzkumných činností v rámci projektu NPSinEU.eu, navrhnul design celé studie, navrhnul příslušnou analýzu a dohlížel na její realizaci a zpracoval předkládaný článek. Společně s Lenkou Vavrinčíkovou, Hanou Fidesovou a Barbarou Janíkovou navrhli všechny výzkumné nástroje a postupy. Lenka Vavrinčíková provedla prvotní analýzu dokumentárního zpracování dat poskytnutých pracovními týmy zodpo-*

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DEAR EDITOR, THE EMPEROR'S NEW CLOTHES?

The title of the paper by Jean-Paul Grund and his colleagues in this volume is very apt (Grund et al., 2016). It suggests, despite the picture conveyed by the media, officials, and others of NPS as a new phenomenon requiring new responses, that in reality the challenges they present are in essence similar to those arising from 'traditional' patterns of heavy drug consumption. While in many respects correct, it is also important to acknowledge there are new challenges in this area.

One implication, which the authors take up in their discussion, is that rather than relying on legislative restrictions and law enforcement interventions to meet this 'new threat', it is more important that public health responses adapt and strengthen existing harm reduction measures, taking account of local or regional variations in availability and patterns of use, as well as of wider developments such as online marketing. This is a sound conclusion, as regardless of the legal status of these substances, public health challenges will continue to exist. It is an additional challenge here to respond adequately to the use of highly toxic compounds that, even if only used by few and only transiently available, are still causing considerable harm.

The EMCDDA has been monitoring developments in NPS in the EU for more than a decade. Although the number of specific new substances identified in Europe shows a considerable rise over this time (e.g. over 100 in 2014), the broad drug categories involved have remained essentially the same (EMCDDA, 2015). The growing importance of the internet in the supply of NPS, as well as in information dissemination and advice, has also been noted. Regarding NPS use among heavy drug-using populations, the most visible (and worrying) pattern involves stimulant-type drugs, including by injecting, though opioid-type drugs and synthetic cannabinoids/hallucinogens are also linked to problems in some areas.

Grund and his colleagues note that while the patterns of use of NPS vary between countries and local settings, in general it can be argued that heavy drug users have a preference for substances that resemble their traditional drugs of choice, opioids and, in particular, stimulants. It is interesting to note, however, in this context the transitions that have been observed between opiates and stimulant drugs in some countries. And this raises the question of the extent to which polydrug consumption patterns have become normative and patterns of use more variable over time than in the past. The authors further note that the choice of a particular drug (NPS or 'traditional') is influenced by a variety of push and pull factors that differ according to changing circumstances, such as the availability, price, quality, and market risks of drugs in different countries and in different settings. These are interesting aspects to explore in future research and monitoring exercises.

From the point of view of public health responses, changing patterns of drug availability and use, including, but not restricted to, NPS, mean that services may be confronted with changing patterns of drug use and routes of ad-

ministration involving novel drugs with new names, or with old drugs known elsewhere but appearing locally for the first time, or with new groups of drug users consuming either new or old drugs or both. This may appear both confusing and threatening to the public, the media, politicians, and other authorities. However, it is also important to recognise that local health services and NGOs who have been delivering harm reduction, treatment, and health promotion to drug users for many years have the knowledge and competence to adapt and respond to these new challenges, which in many cases are old challenges in a new guise.

Encouragement, advice, and, where needed, training for existing harm reduction services could mean, for example, that: needle and syringe programmes take account of the very high frequency of injection observed among some groups of stimulant injectors; or that funders are reminded that drug-checking programmes can play important roles in identifying high-risk substances; or that outreach efforts are supported to reach new risk groups and settings and increase the uptake of HIV and HCV treatment; or that the transmission by sexual routes of infectious diseases is taken as seriously as injecting-related risks; or that community-level naloxone programmes to reduce overdose deaths are put in place; or that internet-based interventions for information, prevention, and treatment are systematically researched and implemented.

Harm reduction first gained importance in Europe in response to HIV linked to heroin injecting during the 1980s and 1990s. By the first decade of this millennium, harm reduction had become accepted as a major pillar of EU and national policies across Europe (Hedrich et al., 2008). Since then, changing economic and political agendas, together with perceptions that heroin no longer poses the threat it once did, have threatened to diminish commitment to harm reduction as a priority. In some countries, this has coincided with changes in administrations so that collective, historical memories of why harm reduction became important appear to have faded. Serious outbreaks of HIV among drug users in Greece and Romania in 2011, followed by risk assessments conducted by the EMCDDA and ECDC (Pharris et al. 2011; Hedrich et al., 2013), demonstrate that the situation in some EU countries remains fragile and that there is an urgent need to maintain and enhance harm reduction policies and programmes. Developments regarding NPS do not change this conclusion. Behind the Emperor's new clothes there are existing structures, services, professionals, and knowledge that can adapt and respond to the challenges posed by new manifestations of old problems. All they need is continued support (and funding).

Sincerely,

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PŮVODNÍ PRÁCE

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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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

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ORIGINAL ARTICLE

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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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

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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, pentedrone 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 & Miovsky, 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 sufficient 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.[1]

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 infrequently 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.[2] 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 slosed.	
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, particulary 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,[3] four smart shops in Amsterdam and Utrecht sold "survival kits" that contained capsules of 4-FA and Mephedrone labelled as 'vitamins' inside a metallic (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

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).

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"[4] 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" reagardless 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 tradičních drog za 1gram, v eurech

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

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.

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PŮVODNÍ PRÁCE

Užívání nových syntetických drog mezi problémovými uživateli drog – prevalence, vzorce užívání a související rizika jako výzva pro programy snižování škod v České republice

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***VÝCHODISKA**: Nové syntetické drogy se v České republice po uzavření tzv. Amsterdam shopů vyskytují ve specifických skupinách uživatelů. **CÍLE**: Cílem této analýzy je (a) zjistit vývoj v prevalenci užívání NSD mezi problémovými uživateli drog v regionech, kde jsou tyto látky rozšířené, (b) popsat charakteristiky populace zasažené užíváním NSD a důvody užití těchto látek, (c) identifikovat rozdíly mezi Prahou a dalšími regiony, (d) vyhodnotit hlavní rizika užívání těchto látek. Práce diskutuje možnosti a limity snižování škod v této populaci. **METODY**: Strukturovaný dotazník a polostrukturovaný dotazník v regionech Praha, Třebíč, Ostrava, Brno, Pardubice. Práce prezentuje rozdíly v regionech a mezi roky 2013 a 2014 s využitím metody chi2 testu a kvalitativní analýzy dat. **VZOREK**: V roce 2013 bylo celkem získáno 271 dotazníků a 64 kvalitativních rozhovorů. V roce 2014 proběhlo druhé kolo sběru dat, kdy bylo odebráno 195 dotazníků a 23 rozhovorů. 71 % dotazníků bylo získáno v Praze. 72,2 % byli muži, průměrný věk byl 32,9 let. **VÝSLEDKY**: Užití NSD během posledních 12 měsíců uvedla přibližně polovina z dotazovaných (52,4 % v roce 2013, 53,0 % v roce 2014). V Praze uvedlo v roce 2013 užití NSD 58,6 % respondentů, mimo Prahu to pak bylo 38,7%. V roce 2014 hlásilo užití nějaké NSD v posledních 12 měsících 57,6 % z klientů pražských programů, v ostatních regionech zmínilo užití NSD 23,7% (šlo převážně o opakované užití). Jednalo se o problémové uživatele drog, kteří vykazovali ve všech sledovaných indikátorech vyšší míru rizikového užívání než ti, kteří NSD v posledním roce neužili. **ZÁVĚRY**: NSD se u určité skupiny PDUs etablovaly, zpravidla jako jedna (z mnoha) užívaných látek. Prioritou by měl být oboustranný tok informací mezi uživateli (popř. službami, jež jsou s nimi v kontaktu) a tzv. systémem včasného varování.*

KLÍČOVÁ SLOVA: PROBLÉMOVÍ UŽIVATELÉ DROG – NOVÉ SYNTETICKÉ DROGY – RIZIKOVÉ CHOVÁNÍ – SNIŽOVÁNÍ ŠKOD

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ORIGINAL ARTICLE

The Use of New Synthetic Drugs among Problem Drug Users – Prevalence, Patterns of Use, and Related Risks as a Challenge for Harm Reduction Programmes in the Czech Republic

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BACKGROUND: After the closure of smart shops (also referred to as "Amsterdam shops") in the Czech Republic in 2011, new synthetic drugs (NSDs) spread within specific groups of drug users in the country, problem drug users (PDUs) being one of them. AIMS: The aim of this analysis is to assess: (a) the prevalence of NSD use among PDUs in regions where these substances are present; (b) the characteristics of the population affected by NSD use and the motivations for this use; (c) the differences between the capital city and other regions, and (d) the main risks related to NSD use. This article also discusses the possibilities of harm reduction within this population. METHODS: Structured questionnaires and semi-structured interviews in five regions affected by NSD use were deployed. This study demonstrates differences between the years 2013 and 2014 using the chi2 test and qualitative data analysis. SAMPLE: 466 respondents filled in the questionnaire (72.2% male, Ø age 32.9 years), 271 in 2013 and 195 in 2014; 71% in Prague. 87 semi-structured interviews were conducted (64 in 2013 and 23 in 2014). FINDINGS: About half of the respondents had used NSDs in the past 12 months (52.4% in 2013 and 52.0% in 2014). In both years, over half of the respondents in Prague used NSDs; outside Prague the prevalence of NSD use decreased to 23.7% in 2014. Those who had used NSDs in the past 12 months showed higher levels of risky drug use. CONCLUSIONS: NSDs became well established among the group of PDUs, usually as one of many substances used. Information exchange between PDUs and the EWS should be a priority for public health-oriented policies.

KEY WORDS: PROBLEM DRUG USERS – NEW SYNTHETIC DRUGS – RISK BEHAVIOUR – HARM REDUCTION

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1 BACKGROUND

The growing market in new synthetic drugs (NSDs)[1] in Europe has inevitably led to the spread of these substances in the Czech Republic too. The greatest boom in NSDs was observed in 2010, when brick-and-mortar retail outlets, smart shops, or "Amsterdam Shops", selling these substances were opened (Běláčková, Mravčík, & Zábranský, 2011; Mravčík et al., 2015). As a result of a rapid legal and law enforcement response, the network of these shops had been closed down by the end of 2011. However, the NSDs continue to be present in the Czech Republic. Information about the occurrence of these substances and the risks they pose is continuously collected under the (European) Early Warning System. In the Czech Republic, the operation of the system is coordinated by the National Monitoring Centre for Drugs and Addiction. In 2013 no less than 48 substances, and 22 in 2014, were identified thanks to the Early Warning System. 25 of the substances were reported for the very first time in the Czech Republic and for five of them it was the first time they had been identified within the whole of the EU. The cathinone MDPPP was the substance which was reported with by far the highest frequency (Mravčík et al., 2015; Mravčík et al., 2015b).

According to a general population survey conducted in 2013, the lifetime prevalence (LTP) of NSD use among the general population aged 15–64 was 1.3% and the last-year prevalence (LYP) 0.3%. In 2014 the LTP was 0.3%, and the LYP was negligible (National Monitoring Centre for Drugs and Drug Addiction & ppm factum research, 2014 and 2015). According to the Eurobarometer survey, which studied a representative sample of approximately 500 respondents in the Czech Republic in 2011 and 2014, these substances had been used at least once at some point in their lives by 4% of the population (the same result in both years) (European Commission, 2014). This experience probably dates back to the period when these substances were available from "legal" shops.

NSD use continues in specific populations, particularly in the nightlife settings and among problem drug users. In a survey carried out among dance partygoers in 2013 and 2014, 17% of the representatives of this at-risk population reported the lifetime use (LTP) of these substances, with approximately 7% of them having used such substances in the last 12 months (LYP) and 3% in the last 30 days (last month prevalence – LMP) (Mravčík et al., 2015). This is approximately one third of the level of the use of other drugs, e.g. methamphetamine, in this population (in the same study, the prevalence rates of methamphetamine use were 41% (LTP), 23% (LYP), and 10% (LMP). The level of the use of NSDs was just slightly lower than that of the increasingly widespread ketamine and slightly higher than that of heroin, GHB, and inhalants (Mravčík et al., 2015). This comparison may suggest that NSDs have become a (legal) alternative to illegal drugs in the nightlife settings.

NSD use has also persisted among the group of problem drug users (PDUs), who use primarily methamphetamine (76%), heroine (9%) or illegal buprenorphine (15%). In a 2013 survey looking into drug use among PDUs the use of NSDs in the last 12 months was reported by 10.5% of 1797 respondents from the entire Czech Republic. However, the occurrence of these substances is not distributed evenly among the regions of the Czech Republic. The same survey indicated that approximately one third of the PDUs in Prague and approximately one fifth of the users in the South Moravia and Hradec Králové regions had come across NSDs (Mravčík et al., 2014). According to a Prague-based outreach programme run by the SANANIM organisation, NSDs had been tried by about 50% of their clients and 6% had used them on a regular basis. The main reasons for the lack of interest in new drugs included negative one-off experience and clients' opinion that these substances were dangerous and generally of a lower "quality" than methamphetamine (known locally as pervitin) (Grund et al., 2015a). With the exception of three respondents from Prague, these substances were not reported as "primary drugs of choice". In general, they were probably cathinones and were sold under the names *Funky*, *Cocolino*, *El Padrino*, and *El Magico*. The fact that NSD use is more common in larger cities can be attributed to the way the substances are distributed. It usually involves meetings of dozens of users with a contact person summoned by phone and held in public areas in the cities. Sealed packages containing 0.5 or 1 gram of the product are sold on these occasions (Beranová, 2015). "Under-the-counter" selling practices in brick-and-mortar outlets continued in some cities.

The use of "NSDs" (especially synthetic cathinones) among PDUs has become widespread in other European countries too. It was recorded in 10 out of 22 EU countries and Switzerland, according to Grund and his colleagues. Studies of NSD use among this population are scarce; in the majority of the countries relevant data originates from local surveys or estimates made by harm reduction programmes (Grund et al., 2015a). A recent growth in NSD use among problem drug users, particularly in Eastern European countries, including Hungary, Romania, and Poland, has been documented, though (Gorun et al., 2011; Malczewski et al., 2013; Peterfi et al., 2014; Abagiu et al., 2014). In comparison with the Czech Republic, where methamphetamine has been widespread among PDUs in the long term, the rise

1/ This term refers to a subgroup of "new psychoactive substances" (NPSs), i.e. substances with effects that are similar to those of already illegal drugs such as cocaine, heroin, and marijuana, but which are not yet controlled under the UN international conventions or at the national level; in general, the term NPSs also encompasses herbal substances (Běláčková & Mravčík, 2015). As this article mainly deals with synthetic psychoactive substances in powdered form, the term *new synthetic drugs* (NSDs) was found more apt.

in intravenous stimulant use against the previously well-established opiates marks a new phenomenon in these countries (Csák, Demetrovics, & Rácz, 2013; Rácz & Csák, 2014). Low-threshold services in these countries thus had to respond to a higher rate of the injecting use of NSDs with stimulating effects. Other countries where NSD use among problem drug users occurred include Spain, France, the United Kingdom, and Finland (EMCDDA, 2015).

The short-term presence of NSDs among users and their highly variable nature make it difficult to document the risks they pose. The major negative effects include skin problems and fatigue, mental health problems, and a severe withdrawal state. In addition, these substances are injected more frequently than other drugs. This leads to increased risk of the transmission of infectious diseases through sharing the paraphernalia used to administer NSDs. This particularly occurs after a collective purchase of a packaged dose in the presence of a severe withdrawal state (Grund et al., 2015b). Another major risk is the absence of information about the content of the substance and its adverse effects, including the risk associated with its interaction with other substances.

The core of the interventions targeted at users of new psychoactive substances (NPSs) is work on motivation, as with other substances. Other responses include NPS-related harm reduction approaches, encouraging people to engage in controlled use or stop using, and relapse prevention (Public Health England, 2014). Specific features of work with NPS users are based on the assumption that NPSs may be used by individuals who do not consider themselves drug users. Therefore, services should strive to assure maximum accessibility. Another specific characteristic is the "inscrutable" composition and effects of the substances, which place a special demand on liaison with the system of acute care and toxicology experts. The need for an individual approach and general knowledge of various types of substances and their physical and psychological effects and risks on the part of the staff of drug services is also noted. In September 2014 the UK Royal College of Psychiatrists recommended six steps to be taken to address these specific issues in professional practice (Royal College of Psychiatrists, 2014).

Using the outcomes of focus groups with NPS users and programme staff, Grund et al. (2015b) proposed 14 interventions that should be prioritised with respect to the NPS phenomenon. Interventions highlighted as being of particular significance included drug consumption rooms, the promotion of self-help resources, and drug checking programmes. It is noteworthy that the latter are only available in nine European countries (Ritter, 2014). In Spain, the Netherlands, and France this service is made accessible to the problem drug users. An outline of drug checking programmes and further international experience in working with different types of NPS users were summarised by Janíková et al. (2015). Specific recommendations to addiction treatment and harm reduction services in the Czech Republic were outlined by Běláčková et al. (2015). These include the assurance of awareness-raising and professional training on the part of practitioners, liaison and information exchange, frontline work with clients, the identification (testing / checking of content) of the substances, and counselling on specific NPSs being used.

This paper presents the results of a study focusing on the risk behaviour of PDUs in relation to NSDs. The data was collected in XI–XII/2013 and in XI–XII/2014 in regions that were selected to be risky to NSD use among PDUs. The objective of this study was to identify risk behaviour among PDUs in relation to so-called NSDs and thus provide the staff of low-threshold services with guidance concerning options for harm reduction strategies. The following research questions were addressed as part of the analysis:

a/ What was the development of the prevalence of NSD use in 2013 and 2014 among problem drug users in the regions where these substances had become widespread?

b/ What were the characteristics of the NSD-using population and the reasons for the use of these substances?

c/ What differences were there between Prague (as the capital city with > 1 000 000 inhabitants) and other cities (< 500 000 inhabitants) in other regions where NSD use was present?

d/ What were the main risks associated with NSD use?

Furthermore, the article discusses NSD use-related harm reduction possibilities and limits with respect to this population.

2 METHODOLOGY

The research focused on selected high-risk regions where NSD use among PDUs was identified on the basis of the results of the "Multiplier" survey. Conducted periodically by the National Monitoring Centre for Drugs and Addiction (the National Focal Point), it is aimed at identifying the proportion of clients in contact with low-threshold services and "hidden" populations of PDUs (Mravčík et al., 2013). Collaboration with seven low-threshold facilities[2] was established in the regions under consideration They were two drop-in centres and one outreach programme in Prague and drop-in centres in Pardubice, Ostrava, Třebíč, and Brno, with the Ostrava facility participating in the first wave of data collection only.

Prague is the capital city of the Czech Republic, with estimated population > 1 million, and is considered one of the 14 regions (higher-level territorial self-governing units) of the Czech Republic. Brno, Ostrava and Pardubice are capital cities of 3 other regions. Their population ranges between approximately 100,000 and 400,000 inhabitants. Třebíč, the

2/ In total, there are 58 drop-in centres and 81 outreach programmes in the Czech Republic.

smallest of the 5 towns, has a population < 50 000 and is the second largest town in its region (after Jihlava).

The total sampling method was used for the purposes of the study, involving all the clients of the service who were willing to participate. Data collection in these facilities lasted from three to five days. All the clients who visited the facility during the data collection phase were addressed, irrespective of whether they had used NSDs, i.e. NSD users were not given preference. Ethical principles were adhered to. All the study participants signed informed consent forms and received respondents' information sheets. Participation in the study was anonymous. Clients who had already participated in the survey in a given year and those who were heavily intoxicated, psychotic, or aggressive were not included in the study.

Structured questionnaires (completed with the interviewer's assistance) and semi-structured interviews were used to collect data from problem drug users. The structured questionnaires contained sociodemographic characteristics and items concerning the use of illicit drugs and NSDs. Those who reported NSD use in the last year were asked to proceed with the completion of a series of questions pertaining to the substance they had last used and their motives for NSD use. The respondents who had used NSDs repeatedly in the last year were asked to participate in a semistructured interview involving open-ended questions. If the clients were willing to provide samples of substances, these were sent for chemical analysis. The clients were informed by the service staff about the results of the analyses under anonymous codes. The clients were also provided with additional available information about the risks associated with the use of the substances that were identified by the analysis.

The data was transcribed and cleansed (those respondents who failed to state their gender and age were excluded from the analysis). All the regions other than Prague were aggregated for regional comparison to ensure the statistical significance of the results. The chi2 test was used to ascertain the statistical significance of the differences in frequencies across categories, with the differences at the 95% significance level or above ($p < 0.05$) being considered statistically significant. The qualitative data from the open-ended questions was processed using the NVIVO software. The respondents' statements were coded into semantic categories and clustered. For the purposes of this analysis the qualitative data was used to complement the answers to the research questions in areas where the quantitative data did not provide conclusive results.

3 SAMPLE

The survey in 2013 yielded a total of 271 questionnaires and 64 qualitative interviews. 195 questionnaires and 23 interviews were collected in 2014.

The largest number of respondents was in Prague (71%). 7.5% of the respondents were from Brno, 6.6% from Ostrava, 7.2% from Třebíč, and 7.7% from Pardubice. From 2013 to 2014 the respondent ratio changed in favour of Prague (63.4% of all the questionnaires in 2013 and 80.7% in 2014) and the proportion of the respondents from Brno decreased (from 9.2% in 2013 to 5.1% in 2014).

The respondents' average age was 32.9 years (median 32). The majority of the respondents were male (72.2%). As for the highest level of education attained, elementary and lower secondary education predominated (43.3% and 39.0% respectively). 15.8% of the respondents had completed higher secondary education and only 0.2% had attained higher vocational education or college/university education (1.7%). Individuals who were unemployed accounted for the largest part of the respondents (44.7%). Only 6.0% reported having steady employment. Employment on the basis of contracts for work was reported by 6.6% of the respondents; 0.9% reported being self-employed and 17.4% taking occasional part-time jobs. 5.1% reported pensions as their sources of income.

The greatest part of the respondents (26.9%) lived in squats at the time of the study. The second most frequent variant was housing of their own, including homes shared with their parents or partner (a total of 23.0% of the answers). 14.9% were staying in hostels and 14.5% had rented flats. Having no permanent place to stay, a certain percentage of the respondents (11.7%) were on the street. Dormitories and homeless shelters were mentioned by 3.6% of the respondents. The remaining 5.3% used other types of accommodation. Interestingly, 66.4% of the respondents had found themselves without a home at some point in the last 12 months.

Irrespective of the legality of the source, the most frequent highest net monthly income reported was up to CZK 5,000 (39%), approx. 200 EUR and about half the minimum wage in 2014. CZK 5,001 to 15,000 was reported by 35% of the respondents. 16.2% reported earning from CZK 15,001 to 30,000, and the income of 9.8% of the respondents exceeded CZK 30,000.

4 FINDINGS

4 / 1 Prevalence

Of the total of 466 PDUs, NSD use in the last 12 months was reported by 52.2% (52.4% in 2013 and 52.0% in 2014). 15.6% of all the respondents reported having used NSDs on a single occasion in the last 12 months (15.0% in 2013 and 16.3% in 2014), while 36.7% of the respondents had used them repeatedly within the same period (37.4% in 2013 and 35.7% in 2014). The year-on-year differences in the prevalence of NSD use among the entire sample were not statistically significant.

Table 1 / Tabulka 1

Prevalence of NSD use in the last year and the substances used in Prague and other cities (Brno, Trebic, Ostrava, and Pardubice) in the years 2013 and 2014

Prevalence užití NSD v posledním roce a konkrétní užité látky v Praze a v dalších městech (Brno, Třebíč, Ostrava, Pardubice) v letech 2013 a 2014

		TOTAL				2013				2014				Statistical significance			
		Prague		Others		Prague		Others		Prague		Others		2013		2014	
		Number	*%*	*Number*	*%*	Number	*%*	Number	*%*	Number	*%*	*Number*	*%*	*Chi2 test*	p-value	*Chi2 test*	p-value
NSD use in the last 12 months	None	139	41.9%	89	65.4%	72	41.4%	60	61.2%	67	42.4%	29	76.3%	14.405	.001*	14.977	.001*
	Yes, once	52	15.7%	17	12.5%	23	13.2%	16	16.3%	29	18.4%	1	2.6%				
	Yes, repeatedly	141	42.5%	30	22.1%	79	45.4%	22	22.4%	62	39.2%	8	21.1%				
Funky		188	97.4%	7	12.3%	97	96.0%	4	8.3%	91	98.9%	3	33.3%	115	.000*	55	.000*,b,c
El Magico		20	10.4%	0	0.0%	13	12.9%	0	0.0%	7	7.6%	0	0.0%	7	.009*,b	1	.391b,c
Cherry		0	0.0%	6	10.5%	0	0.0%	6	12.5%	0	0.0%	0	0.0%	13	.000*,b	0	0.0%
El Padrino		0	0.0%	15	26.3%	0	0.0%	15	31.3%	0	0.0%	0	0.0%	35	.000*,b	0	0.0%
Other NSDs		10	5.2%	35	61.4%	9	8.9%	27	56.3%	1	1.1%	8	88.9%	40	.000*	78	.000*,b,c

* Statistically significant result; $p < 0.05$.

The NSD reported with the highest frequency was "Funky",[3] which had been used at some point in their lives by 77.7% of the clients of the seven programmes under scrutiny (67.3% in 2013 and 93.1% in 2014). 8% mentioned having used "El Magico"[2] (8.7% in 2013 and 6.9% in 2014), 6% had used "El Padrino"[2] (10% in 2013 and 0.0% in 2014), had used 2.4% "Kerry" (4.0% in 2013 and 0% in 2014), and 18.3% had used any of the other NSDs (24.7% in 2013 and 8.7% in 2014). A more detailed summary is provided in *Table 1*. There were also other substances, such as "Coffee shop/**Kofák**", "Penthedrone", "Fresh", "P1/P2", "Golden Gate", "Speedy Mix", "High Voltage", "**Krokodyl**", "Fentanyl", "**Mente**", and those referred to under the Czech equivalents of the names "Elephant/Pink Elephant", "Meow Meow" (mephedrone), "Citrus/Letter C", and "Presents/Collectors' Items".[4]

4 / 2 NSD users' characteristics

In the analysis, responses of those who had used an NSD repeatedly in the last 12 months (NPS users) were compared to those who had used it only once (experimenters), and those who hadn't used it at all. Men were more likely to be repeated NSD users (55.7% of men used an NSD repeatedly in the past 12 months vs. 43.1% of the women). Repeated NSD users included a significantly higher percentage of individuals who reported having been homeless in the last 12 months (83.1% of them, versus 69.9% of the respondents who had used NSDs only once in the last year and 52.7% of the respondents who had never used any NSDs; chi2=18.922, p=0.00). Repeated NSD use was more likely with individuals who lived in urban areas with over 50,000 inhabitants (chi2=24.174, p=0.00), were unemployed and not registered with labour offices (chi2=27.063, p=0.000) and their income was more likely to originate from illegal activities (chi2=9.478, p=0.009).

In terms of risk behaviour, the NSD users were more likely to administer drugs by injecting (94.1% versus 91.7% of the one-off users and 85.3% of the individuals who had used no NSDs in the last year; see *Table 3*). NSD users were also more likely to have used cannabis, ecstasy, LSD, ketamine, or other substances in addition to methamphetamine or heroin in the last 12 months or 30 days (*Table 2*). Hence, they were more likely to be polydrug users. The greatest difference between NSD users and those who had never tried a substance of that type was the use of methamphetamine (pervitin) and heroin (or buprenorphine) as a "speedball", i.e. combined in one dose or used in rapid succession (this was the case in Prague). All the above differences were statistically significant.

The respondents who had used NSDs also showed additional (statistically significant) riskier forms of drug use in comparison to those who had used NSDs only once in the last year or had not used them at all. Almost a quarter (22.1%) of the repeated NSD users had used shared needles or syringes in the last 30 days (versus 13.7% of those who had used them only once and 11.1% of those who had used no NSD in the last year). Similar results were found in relation to other practices under study, such as syringe-mediated drug sharing (frontloading/backloading) or the sharing of injecting paraphernalia. For details see *Table 3*.

3/ Name of the substance (trade name) containing mainly cathinones as active ingredients (Mravčík et al., 2013).

4/ The analysis also took account of the answers to the questions asking whether the respondents had used substances other than the (traditional) illegal drugs and NSDs. If they stated an NSD, they were subsequently coded as NSD users. Under this item, however, the respondents were most likely to indicate pharmaceuticals, mainly of the benzodiazepine category.

Table 2 / Tabulka 2

Differences between the use of illegal drugs among individuals who had not used any NSDs in the last 12 months, those who had used it/them at least once, and those who had used it/them repeatedly (statistically significant differences)

Rozdíly v užívání nelegálních drog mezi osobami, které neužily NSD v posledních 12 měsících, které ji užily a které ji užily opakovaně (statisticky významné rozdíly)

		NSD use in the last 12 months					
		None		Yes, once		Yes, repeatedly	
		Number	%	Number	%	Number	%
THC, hashish (chi2 = 23.455, p = 0.01*)	Never	25	11.2%	7	9.6%	4	2.3%
	Lifetime use	57	25.6%	18	24.7%	27	15.8%
	Last-year use	22	9.9%	7	9.6%	12	7.0%
	Last-month use	119	53.4%	41	56.2%	128	74.9%
XTC (chi2 = 18.208, p = 0.06*)	Never	103	46.0%	28	38.4%	46	26.9%
	Lifetime use	100	44.6%	32	43.8%	94	55.0%
	Last-year use	13	5.8%	8	11.0%	20	11.7%
	Last-month use	8	3.6%	5	6.8%	11	6.4%
Pervitin (AMPh) (chi2 = 33.239, p = 0.00*)	Never	14	6.3%	1	1.4%	0	0.0%
	Lifetime use	18	8.1%	1	1.4%	3	1.7%
	Last-year use	22	9.9%	6	8.2%	6	3.5%
	Last-month use	168	75.7%	65	89.0%	163	94.8%
Cocaine, crack (chi2 = 22.950, p = 0.01*)	Never	124	55.6%	37	52.1%	57	33.3%
	Lifetime use	77	34.5%	26	36.6%	80	46.8%
	Last-year use	13	5.8%	3	4.2%	19	11.1%
	Last-month use	9	4.0%	5	7.0%	15	8.8%
Heroin, buprenorphine (chi2 = 56.653, p = 0.000*)	Never	78	35.1%	14	19.2%	21	12.3%
	Lifetime use	39	17.6%	14	19.2%	24	14.0%
	Last-year use	15	6.8%	5	6.8%	9	5.3%
	Last-month use	90	40.5%	40	54.8%	117	68.4%
Pervitin and opioid combined in one dose or used in rapid succession (chi2 = 56.653, p = 0.00*)	Never	121	54.3%	30	42.3%	38	22.6%
	Lifetime use	39	17.5%	8	11.3%	24	14.3%
	Last-year use	17	7.6%	9	12.7%	16	9.5%
	Last-month use	46	20.6%	24	33.8%	90	53.6%
LSD, mushrooms (chi2 = 13.714, p = 0.033*)	Never	114	51.1%	31	42.5%	60	35.1%
	Lifetime use	82	36.8%	32	43.8%	74	43.3%
	Last-year use	17	7.6%	5	6.8%	19	11.1%
	Last-month use	10	4.5%	5	6.8%	18	10.5%
Ketamine (chi2 = 23.240, p = 0.01*)	Never	189	84.4%	59	80.8%	110	64.3%
	Lifetime use	27	12.1%	11	15.1%	48	28.1%
	Last-year use	6	2.7%	2	2.7%	11	6.4%
	Last-month use	2	0.9%	1	1.4%	2	1.2%
Synthetic cannabis (Spice, JVH) (chi2 = 16.422, p = 0.012*)	Never	201	89.7%	60	83.3%	131	76.6%
	Lifetime use	16	7.1%	9	12.5%	22	12.9%
	Last-year use	5	2.2%	1	1.4%	13	7.6%
	Last-month use	2	0.9%	2	2.8%	5	2.9%
Other (chi2 = 13.215, p = 0.040*)	Never	116	78.9%	39	79.6%	83	66.9%
	Lifetime use	13	8.8%	3	6.1%	14	11.3%
	Last-year use	7	4.8%	1	2.0%	2	1.6%
	Last-month use	11	7.5%	6	12.2%	25	20.2%

* Statistically significant result; $p < 0.05$.

Table 3 / Tabulka 3

Differences in the risky behaviour associated with the use of illegal drugs among those who had not used any NSDs in the last 12 months, it/them at least once, and those who had used it/them repeatedly (statistically significant differences)

Rozdíly v rizikovosti užívání nelegálních drog mezi osobami, které neužily NSD v posledních 12 měsících, které ji užily jednou a které ji užily opakovaně (statisticky významné rozdíly)

		NSD use in the last 12 months					
		None		Yes, once		Yes, repeatedly	
		Number	*%*	*Number*	*Number*	*%*	*Number*
Sharing of needles/syringes (chi2 = 27.763, p = 0.000*)	Never	115	53.0%	34	46.6%	54	31.4%
	Lifetime use	57	26.3%	13	17.8%	51	29.7%
	Last-year use	21	9.7%	16	21.9%	29	16.9%
	Last-month use	24	11.1%	10	13.7%	38	22.1%
Sharing of other injecting paraphernalia (chi2 = 15.891, p = 0.014*)	Never	109	50.2%	33	45.2%	64	37.2%
	Lifetime use	53	24.4%	15	20.5%	34	19.8%
	Last-year use	28	12.9%	11	15.1%	28	16.3%
	Last-month use	27	12.4%	14	19.2%	46	26.7%
Frontloading/backloading (chi2 = 17.411, p = 0.08*)	Never	87	40.5%	30	41.1%	48	28.1%
	Lifetime use	34	15.8%	5	6.8%	16	9.4%
	Last-year use	20	9.3%	7	9.6%	17	9.9%
	Last-month use	74	34.4%	31	42.5%	90	52.6%
Drug administration by injecting (chi2 = 8.216, p = 0.016*)	Injectors	186	85.3%	66	91.7%	159	94.1%

* Statistically significant result; $p < 0.05$.

4 / 3 Motives for use

The most frequently reported motive for the use of (most recent) NSD among all the respondents who used it in the last 12 months was the temptation to try new substances (indicated by 23.9% of the Prague-based users and 49.1% of the users from outside Prague). Affordability was more likely to be mentioned in regions other than Prague (22.8%). In Prague it was mentioned as the motivation by 9.6% of the respondents. For some of the respondents the motivation for use was that they enjoyed the state of intoxication (13.2% in Prague and 12.3% outside Prague); a smaller proportion chose the answer in the questionnaire that they liked NSDs better than other drugs (5.6% in Prague and 5.3% outside Prague). The legality of the substances was the reason for NSD use for a mere 1% of the NSD-using participants in Prague and 5.3% outside Prague. However, other motives for NSD use were often brought up (50.3% in Prague-based services and 47.4% in other regions). These motives were explored by means of qualitative analysis, see below.

The semistructured interviews suggest that the motive behind the first use was simply curiosity (n=14) or an urge to experience a new substance. This is illustrated by the following examples: *"I tried Funky just because I'm a junkie and I like trying new stuff."* Another motive behind the use of NSDs which was mentioned frequently was friends who either recommended or gave the substance to the person (n=10): *"I guess it was the friends' reactions, that they raved about it, that they got cool highs on it..."* or "*Well, it was like more the people I knew, actually, when a mate of mine met me, he told us to come along and try it."* Relatively common motives for use were also "invitation" or "treat" (n=6).

A number of respondents were led to the use of NSDs by the unavailability of other drugs (n=27): *"You couldn't get anything else …"* or just *"I couldn't get hold of him [the dealer] on the phone."* Some mentioned that a NSD was offered to them as a different drug: "*Because I wanted to take pervitin and was offered this as pervitin in fact."* Some had used an NSD *"by mistake" (n=7).* In other cases it was the lower price than that for other drugs that mattered: "*I was short of 50 crowns so I went with them."* The price of NSDs was around CZK 300 per 0.5 gram. But whether the price was lower than that of illegal drugs depended on the dose one would take, which, according to the respondents, could vary dramatically from person to person. The reasons for repeated use included the better onset of the effects in comparison with methamphetamine, dependence on NSDs, and the opportunity to abstain from the "primary drug of choice" (methamphetamine or opiate).

On the contrary, the respondents who didn`t use NSD in the past 12 months reported that their reason was not being attracted by the effects of NSDs (25.7% in 2013 and 26.4% in 2014). The percentage of users who reported the

potential harmfulness of these substances as the reason for not using them declined between 2013 and 2014 (it was 23.6% in 2013 and 16.7% in 2014); this was, however, compensated for by an increase in the proportion of the respondents who had never heard of NSDs (the reason for non-use in 10.4% of the respondents in 2013 and 25.3% of the respondents in 2014). Satisfaction with their "primary drug of choice" was reported as the reason by 17.4% of the respondents in 2013 and 17.6% in 2014.

As for the source of information on NSDs and their effects, the greatest number of the users made their decisions on the basis of the experience of their friends or acquaintances. It was the deciding factor for 70.8% of the respondents in Prague and 78.9% outside Prague. Four users (outside Prague) decided to go for a substance following consultation with the seller. Only one respondent's decision was influenced by experience described in online discussion forums.

● 4 / 4 Regional differences

In statistical terms, the prevalence of NSD use among problem drug users in both years was significantly higher in Prague than in the other cities / regions under study (chi2=14.7, p=0.001).

In 2013 NSD use was reported by more than half of the respondents (58.6%) from Prague, with 77% of them having used NSDs repeatedly (42.5% of all the respondents from Prague). In the cities other than Prague, NSDs were used in the same year by 38.8% of the respondents, with 57% of them having used NSDs repeatedly (22.1% of all the respondents from outside Prague in that year).

In 2014 the last-year prevalence of NSD use was reported by 57.6% of the clients of Prague-based programmes, of whom 68% had used the substances repeatedly (39.2% of all the respondents from Prague in 2014). In other regions NSD use was mentioned in 2014 by 23.7% of the respondents, with 89% having used NSDs repeatedly (21.1% of all the non-Prague respondents). These differences were statistically significant (chi2=14.997, p=0.001).

The main difference between Prague and the other regions laid in the product being used. While Funky (used by 97.4% of the Prague respondents) and El Magico (10.4% of the Prague respondents) predominated in Prague, in other regions Funky had been used by only 12.3% of the respondents and El Magico had not been used by any of the respondents. Substances referred to as Cherry (12.5% of the respondents from outside Prague) and El Padrino (26.3%) appeared outside Prague in 2013, but none of these substances was reported any longer by the respondents in 2014. In 2014 the respondents from regions other than Prague reported having used Funky (33.3%) or any other NSDs (88.9%). See *Table 1* for a detailed summary.

Major differences between Prague and other urban areas were also found in the way in which NSDs were obtained. PDUs in Prague were most likely to buy the NSDs through somebody they knew (36.0% of the respondents in 2013 and 37.8% in 2014) and directly from a dealer or friend (32.0% in 2013 versus 41.1% in 2014). The percentage of those who were given the drug for free dropped from 2013 to 2014 in Prague (from 27.0% in 2013 to 18.9% in 2014). In other urban areas the substances were mainly purchased from brick-and-mortar shops in 2013 (52.1%, versus 8% of the Prague-based respondents in the same year). In 2014 this supply channel ceased to exist both in and outside Prague. As a consequence, the rate of those who were given the substance for free increased in the regions other than Prague (44.4% – double the rate of the respondents who obtained the substance in this way in Prague in the same year) and so did the rate of those who bought it from a friend or dealer (44.4% – similar to Prague) in 2014.

● 4 / 5 NDS use-related risks

Intravenous use was the most frequently mentioned route of administration, both in Prague (96.0% in 2013 and 95.6% in 2014) and in the other regions (70.8% in 2013 and 88.9% in 2014). The second most frequently reported route of administration was snorting, which was more common outside Prague (22.8% of the respondents from other urban areas vs. 3.1% of the respondents in Prague). Oral use (3.5%) and smoking (10.5%) were also reported by the respondents from regions other than Prague. Neither of those two routes of administration was recorded among the Prague-based respondents. Other administration practices were reported by 1% of the people in Prague and 1.8% of the respondents from regions other than Prague.

Furthermore, the respondents were asked what they thought the content of the NSD they had last used was. This question was answered by 142 respondents in 2013 and 81 in 2014. In both years approximately one third of the respondents answered that they did not know. In 2013 a substantial proportion of the respondents (16.9%) thought that the substance had in fact contained pervitin (methamphetamine) or "something like pervitin" (4.9%) or ephedrine (2.1%), while in 2014 pervitin and ephedrine were associated with the substance by no more than 7.4% and 3.7% of the respondents, respectively, and a higher rate of the respondents relative to 2013 (9.9%) indicated "something like pervitin" in this respect. In both years, hence, about one quarter to one fifth of the respondents altogether (23.4% in 2013 and 21% in 2014) associated the composition of NSDs with methamphetamine-based substances.

A small proportion of the respondents, specifically 6.3% in 2013 and 3.7% in 2014, believed that the substances contained a combination of stimulants and opiates (often pervitin and heroin for that matter), while some thought

Table 4 / Tabulka 4
Use of NSDs together with other substances, 2013 and 2014
Užití NSD společně s dalšími látkami v letech 2013 a 2014

	2013		2014		*chi2 test*	*p*
	Number	*%*	*Number*	*%*		
None	57	37.7%	7	7.6%	26.767	,000*
Alcohol	11	7.3%	14	15.2%	3.897	,048*
Pervitin	38	25.2%	40	43.0%	3.897	,004*
Cannabis	26	17.2%	25	27.2%	.065	.065
Buprenorphine	42	27.8%	48	52.7%	,000*	,000*
Other	13	8.6%	24	25.8%	,000*	,000*

* Statistically significant result; $p < 0.05$.

that they contained only opiates (1.4% in 2013 and 3.7% in 2014). The answers included "fertilisers", "mephedrone", "hallucinogen", "MDMA", "brown derivative", "scraps", and "something like coca", but also "shit", "crap", and "rubbish". In addition, the respondents indicated a number of various substances, including herbal ones. In 2013 only two respondents stated a composition which corresponded with the actual situation, cathinone, and two indicated khat (the latter was also referred to by two respondents in 2014). In total, 6 samples were submitted for analysis by the respondents, 3 of them contained the cathinone MDPBP, one contained methamphetamine, one contained MDMA and one had not been provided in substantial amount for the analysis could be performed.

As for NSDs being combined with other substances, from 2013 to 2014 there was a statistically significant increase in the percentage of clients who engaged in this type of polydrug use[5] (from 62.3% to 94.3%, chi2=26.767, p=0.000); see *Table 4*. The combination of NSDs with other substances was more frequent in Prague, where this type of polydrug use in both years was mentioned by 70.6% of the respondents, while outside Prague it was only 43.8% (the difference is statistically significant for the year 2013 only).

In response to the question as to what effect NSDs had on their use of "old drugs" (a term used in the questionnaire), the majority of the respondents (74.1%) reported no changes in that respect. This meant, in fact, that they used NSDs in combination with other substances. Unlike in the other regions, in Prague the use of NSDs in combination with buprenorphine was higher with statistical significance (50% of the respondents who had used NSDs in the last year). None of the respondents from outside Prague had used NSDs together with buprenorphine. Equally, the combination of NSDs with methamphetamine (pervitin) had a much higher representation in Prague (36.0%) in comparison to regions other than Prague, where this combination was reported by 19.3% of the clients. Other combinations of NSD with other drugs included those with methadone (Prague, n=7), heroin (Prague and Brno, n=11), and benzodiazepines (Prague and Pardubice, n=8). Outside Prague a combination with cannabis was higher with statistical significance (33.3%, vs. 17.3% in Prague).

Some respondents reported having used NSDs just for the sake of variety (6.3% in Prague and 15.3% outside Prague) or having combined them with other drugs according to their availability (5.8% in Prague and 15.8% outside Prague). A small percentage of the respondents mentioned combining the drugs on purpose in order to achieve some expected effects (1.1% in Prague and 5.3% outside Prague). One of the Prague-based respondents mentioned that he had used "old drugs" to alleviate the comedown In response to other questions, nevertheless, two of these respondents reported having used another substance, namely buprenorphine, together with NSDs. Switching to NSDs was mentioned by only six respondents, specifically 2.1% of the participants in Prague and 3.5% of the respondents in the other regions who responded to the effect that they were no longer using "old drugs". Other implications for the use of conventional drugs were reported by 7.4% of NSD users in Prague and 14.0% outside Prague.

4 / 6 Complications after use

As regards adverse side effects related to NSD use, no complications after use were experienced by 21.1% of the respondents from Prague and 36.8% from the other regions. Those who experienced adverse consequences most commonly mentioned a headache (32.6% of the Prague-based respondents). The same proportion of the PDUs in contact with the Prague-based services reported palpitations as a complication. In the regions outside Prague, headaches were experienced by 24.6% of the participants and palpitations by 26.3%. Nausea and vomiting after using NSDs were experienced by 31.1% of the respondents in Prague

5/ Answers to the question "Did you use anything else together with this substance or on the same day"?

and 36.8% of the respondents in the other regions. A rise in body temperature was experienced by 19.5% of the PDUs in Prague and 10.5% of those outside Prague.

Another frequently reported side effect was paranoid ideas during the comedown (31.1% of the participants in Prague and 32.1% outside Prague). A statistically significant increase in the proportion of the Prague-based respondents who experienced paranoia after using NSDs was recorded from 2013 to 2014 (from 24.5% to 31.3%). Disorientation was reported by 29.5% of the Prague-based NSD users and 12.5% of the respondents from the other regions. Other negative side effects that were chosen out of the list provided to the respondents were a loss of coordination, impaired vision, and intense hallucinations.

In Prague 33.9% of the respondents mentioned having experienced NSD use-related complications other than those indicated above (while in the other regions such complications were reported by 43.9% of the respondents). They included stomach-ache and diarrhoea, difficulty urinating, perspiration, tingling in the limbs, difficulty breathing, excessive sexual arousability, pain at the injection site, joint and muscle pain, and a number of psychological complications (such as severe comedown, anxiety, and depression).

5 DISCUSSION

The level of use of NSDs among the population of what is referred to as problem drug users appeared stable from 2013 to 2014, particularly in Prague. Approximately half of the study respondents had used these substances in the last 12 months (with about two thirds of them having done so repeatedly). In view of the fact that the respondents were selected only from areas where elevated NSD use among the population of PDUs had been recorded, the overall LYP of NSD use on the national scale is likely to be lower, i.e. it can come close to the 11% level found by the 2012 Multiplier survey (Mravčík et al., 2013). The results of this study can be further compared to the above survey of the situation in the capital city performed by Sananim o.s. where the LYP of NSD use among PDUs was estimated at 33%. The fact that the LYP in this study is higher may be due to methodological differences (e.g. our study being focused on NSDs).

In regions other than Prague, no changes in the proportion of respondents who had used NSDs repeatedly were recorded, but the percentage of respondents who had used NSDs only once declined. This may suggest that these substances have "established themselves" with a certain segment of the users, while they ceased to be available or appealing to others. On the other hand, NPSs do not seem to have become a "primary drug of choice" in the Czech Republic. In this sense, the risks posed by this phenomenon there appear lower than in the majority of Eastern European countries; NSDs were referred to as the "primary drug of choice" by 15% of PDUs in Hungary (EMCDDA, 2015), 30% in Romania (Abagiu et al., 2014), and 80% in Hungary (Petrefi et al., 2014). Additionally, in the Czech Republic, unlike in the United Kingdom, there were no users who reported cathinones as the first (problem) drug they had used (EMCDDA, 2015).

Nevertheless, NSD use among the population of PDUs in the Czech Republic is rarely a matter of a one-off experiment, although it is a single experience that deters some of the users from further use. As for the adverse effects of NSDs, the most common physical complications included headaches, palpitation, nausea and vomiting, loss of coordination, and impaired vision. Psychological side effects included paranoia during the comedown, disorientation, and intense hallucinations. Some of the respondents experienced no complications. The above adverse effects are similar to those described in other European countries. Moreover, a European report about the injecting of cathinones highlights adverse effects that were not so prevalent in this study, namely high-risk sexual behaviour, skin problems, and a strong craving for these substances (EMCDDA, 2015). Last but not least, international studies confirm a higher level of injecting use among PDUs who use NSDs; in Hungary this was probably the main cause of the rising incidence of viral hepatitis C among this population (EMCDDA, 2015). Equally, the respondents in this study showed a higher level of injecting use than PDUs who used no NSDs.

PDUs who continued using NSDs despite the negative effects did not report "liking" these substances better than other drugs. The most common reasons for use included the unavailability of other drugs, being offered by a friend and a motivation to try new substances. Majority of respondents however didn`t change their use of other substances. For comparison, the use of NSDs as a replacement for (conventional) illegal drugs that were unavailable was typically observed in the years 2010 and 2011 in Hungary and Romania in response to the long-term shortage of heroin (EMCDDA, 2015) and its high prices (Csak et al., 2013).

The respondents who had used NSDs in this study also showed generally higher levels of the use of other substances. NSD use can thus be considered common behaviour among polydrug users. This is consistent with the situation in other EU countries - a combination with opiates (recorded in Barcelona or the United Kingdom, for example; EMCDDA, 2015) or with substitution agents (recorded in about 50% of the clients of substitution programmes in Hungary; EMCDDA, 2015) proved particularly significant. Among PDUs, the legality of NSDs does not play a major role in their deciding whether to use these substances. However, the semilegal status of NSDs may be the reason for their relative affordability. Because of their lower prices, these substances become appealing to people without regular incomes.

In the period from 2013 to 2014 the market in NSDs in the Czech Republic finally moved to the grey zone of (specific) "street" distribution. Purchases from brick-and-mortar retail outlets ceased to exist and so did the chances of any regulation or control of the supply. Also, this paper highlighted the importance of regional differences in NPS use (especially in the products used) which are, to an extent, driven by the localized sources of supply. Such description of spatial diversity has not been described in pre-existing research. While the available data does not suggest that NSDs are entering the same distribution channels as (conventional) illegal drugs, some respondents reported that they had used them "by mistake" or that somebody was "selling them as pervitin". These findings are supported by the outcomes of drug checking programmes in Europe which show that new drugs occur as adulterants to illegal drugs or are sold as illegal drugs (Gine, Espinosa, et al., 2014). This mixing of NSDs with conventional (illegal) drugs implies that users may not pay enough attention to the risks associated with NSD use.

With their limited availability, the number of the respondents who had never heard of the substances under study more than doubled in the period from 2013 to 2014 (in 2014 this applied to no less than one quarter of the respondents). Similarly, in 2013 Romania experienced a marked decline in the injecting use of cathinones, following a boom in 2011 and 2012 (EMCDDA, 2015). The NPS phenomenon in this group of users may have the nature of a passing trend, or the use of these substances may stabilise at lower levels following the initial rise. The question is, in this context, whether the users' "short-term memory" is desirable or whether harm reduction programmes should provide systematic information about the risks posed by the new substances.

The study has identified factors conducive to NSD use. A greater proneness to the use of these substances was found among various vulnerable individuals, such as those with no income or home, individuals engaging in frequent injecting drug use and other high-risk drug-using practices, and those who combined stimulants with opiates in one dose or in rapid succession (in Prague). In addition to the fact that the supply of NSDs was met by demand on the part of the already strongly marginalised group of problem drug users, it is the most vulnerable of them who are affected in this population (the more serious health and social consequences of NSD use can also be an explanation, though). Moreover, many respondents, including those who use NSDs, find them inferior products (referred to as "rubbish", etc.), which may result in their users being stigmatised within the PDU community. No detailed information concerning specific characteristics of NPS users among the population of PDUs abroad were found in the literature.

Another aspect is the total lack of information about the active substance contained in the NSDs the respondents use (only six respondents out of the total of 223 who reported the presumed content of the NSD correctly specified the type of substance which the NSD most frequently contained). In addition, international experience indicates that measures to ban specific NPSs lead to such substances being quickly replaced by new and unknown ones (EMCDDA, 2015) and, in general, the content of the products is highly variable (Gine, Espinosa, et al., 2014; Galan, 2015). The lack of information about the content of the substances prevents their users from using effective strategies to reduce harm (such as reasonable dosing and avoiding mixing with other substances or medication). This highlights the importance of drug checking targeted at the population of PDUs.

While "recreational" drug users resort to the internet as an important source of information about a new substance, problem users tended to obtain information about the substances from their friends. In this respect, peer support and education and proactive approaches on the part of harm reduction organisations may be vital. Given that NSDs do not generally become the "primary drug of choice" for problem users and the growing proportion of users who combine these substances with other drugs, awareness raising with regard to the risks of combining NSDs with other drugs appears to be one of the crucial areas for harm reduction interventions to address. Routes of administration other than injecting were also recorded among users (although their rate dropped from 2013 to 2014). It is therefore advisable that harm reduction (HR) messages provide information about safer application practices and the availability of injecting paraphernalia.

Overall, efforts aimed at reducing the harm associated with the use of the NSDs in the population of problem drug users are facing multiple challenges. The Czech Republic is one of the countries where no systematic collection of drug samples from users is in place (except for limited research purposes) and the occurrence of specific NSDs is inferred mainly on the basis of seizures by law enforcement agencies and the monitoring of the internet (Grohmannová et al, 2016). The second problem is the lack of information about emerging substances and their risks possessed by professionals and the staff of helping programmes. This situation turns users into "guinea pigs" for the manufacturers and sellers of these substances and, at the same time, into the only "experts" on the effects and risks of the substances; the sharing of such users' experience, by means of users' forums, for example, is often the only source of information for users (Drápalová & Běláčková, 2016). The effective dissemination of information about risks requires the quick two-way exchange of information about new substances (in which users are both the sources and recipients of information). In this respect, it is advisable to make the Early Warning System more accessible to drug services and scale

up the exchange of information at both the national and international levels, which drug users and the services that maintain contact with them must be an integral part of.

6 CONCLUSIONS

Although they generally do not represent the "primary drug of choice", the use of NSDs has become established among some PDUs in selected regions. These users generally exhibit higher levels of risk behaviour and tend to engage in polydrug use. These aspects should be taken into account by harm reduction interventions intended for NSD users. Furthermore, in view of the possible higher frequency of injecting associated with the use of NSDs, this population should be sufficiently supplied with injecting equipment.

The absence of information about the content of NSDs imposes limitations on the resources harm reduction programmes can deploy. The finding that a number of PDUs have used an NSD unintentionally suggests that it is the entire population of PDUs rather than those who repeatedly seek NSDs that is placed at risk by these substances. In this context, the establishment of drug checking programmes for (not only) the population of PDUs should become a priority.

Harm reduction programmes lack information about the content of specific NSDs and the risks posed by them, including the risks ensuing from these substances being combined with other drugs. A two-way flow of information between users, services that maintain contact with them, and the Early Warning System should be developed to address this problem.

The role of the authors: Tomáš Zábranský, Viktor Mravčík, and Vendula Běláčková proposed the study design and prepared the research tools together with Barbara Janíková and Ladislav Csémy. Vendula Běláčková and Barbara Janíková coordinated the data collection process. Jaroslav Vacek performed the statistical analyses. Alexandra Tomková participated in the interpretation of the data and the preparation of the manuscript. Vendula Běláčková drafted the initial version of the manuscript, performed the literature search, and reviewed the relevant evidence. All the authors contributed to the article and approved the final version of the manuscript.

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On-line prodej nových syntetických drog v České republice v roce 2015

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VÝCHODISKA: *Od roku 2010 se v ČR ve větší míře objevují nové syntetické drogy (NSD) dostupné mimo jiné prostřednictvím internetu. V roce 2015 byla realizována pátá vlna průzkumu nabídky NSD v e-shopech cílících na českou populaci.* ***CÍLE:*** *Cílem průzkumu bylo mapování nabídky NSD a včasná identifikace látek, které dosud nebyly v ČR zaznamenány a nejsou kontrolované.* ***METODY:*** *Internetové obchody byly cíleně vyhledávány na základě řetězců klíčových slov. Relevantní stránky byly podrobeny obsahové deskriptivní analýze.* ***SOUBOR:*** *V roce 2015 bylo identifikováno 33 e-shopů s nabídkou nových psychoaktivních látek, z toho 9 se specializovalo na látky syntetického původu.* ***VÝSLEDKY:*** *V nabídce e-shopů specializovaných na NSD bylo 145 různých látek a 60 produktů, nejčastěji šlo o syntetické kanabinoidy a katinony. Celkem 63 % nabízených látek nebylo v ČR dosud identifikováno a kontrolováno na národní úrovni.* ***ZÁVĚRY:*** *Nabídka NSD prostřednictvím internetu roste. Monitoring internetu je užitečnou doplňkovou metodou pro sledování drogového trhu, jeho využitelnost pro Systém včasného varování před novými drogami je však bez podrobnější analýzy vzorků omezená.*

KLÍČOVÁ SLOVA: NOVÉ PSYCHOAKTIVNÍ LÁTKY – NOVÉ SYNTETICKÉ DROGY – INTERNETOVÉ OBCHODY – OMAMNÉ A PSYCHOTROPNÍ LÁTKY

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ORIGINAL ARTICLE

Online Sales of New Synthetic Drugs in the Czech Republic in 2015

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BACKGROUND: The use of new synthetic drugs (NSD) in the Czech Republic has been on the rise since 2010. Besides other means of supply, they are available via the internet. In 2015, the fifth wave of a survey focusing on the supply of new synthetic drugs through online shops targeting the Czech population was carried out. AIMS: The aim of the survey was to map the supply of NSD via the internet, as well as to identify substances which have not yet been reported and put under control in the Czech Republic. DESIGN AND METHODS: A targeted search of online shops was performed using keyword strings. Relevant sites were subjected to content descriptive analysis. SAMPLE: 33 e-shops offering new psychoactive substances were identified in 2015, of which nine specialised in synthetic substances. RESULTS: The e-shops specialising in NSD offered 145 different substances and 60 products containing NSD; these mostly involved synthetic cannabinoids and cathinones. Altogether, 63% of the substances on offer have not yet been reported or subjected to control in the Czech Republic. CONCLUSIONS: The supply of NSD via the internet has been increasing. The monitoring of the internet is a useful complementary method for drug market monitoring. However, its usability for the Early Warning System used to raise alerts concerning new drugs is limited without detailed analysis of the samples.

KEY WORDS: NEW PSYCHOACTIVE SUBSTANCES – NEW SYNTHETIC DRUGS – ONLINE SHOPS – NARCOTIC AND PSYCHOTROPIC SUBSTANCES

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1 INTRODUCTION

In the past five years Europe has seen a significant spread of new psychoactive substances ("NPS"), particularly those of synthetic origin. NPS are substances with psychoactive effects which are not subjected to international control as narcotic and psychotropic substances, i.e. they are not included in the schedules of the UN Single Convention on Narcotic Drugs of 1961 or the UN Convention on Psychotropic Substances of 1971. They encompass both herbal and synthetic substances, as well as pharmaceuticals, including veterinary products (Council of the European Union, 2005).

101 NPS were identified within the EU in 2014: 31 cathinones, 30 synthetic cannabinoids, nine phenethylamines, five opioids, five tryptamines, four benzodiazepines, four arylalkylamines, and another 13 substances which fall into none of the above categories. In comparison with previous years, this is the largest number of substances identified and reported for the first time within a single year (81 in 2013, 73 in 2012, 49 in 2011, and 41 in 2010). Over 450 substances are currently monitored in the EU using the European Early Warning System, the main purpose of which is to ensure the early identification of NPS on the market and the exchange of information about them. Synthetic cannabinoids constitute the largest group. In terms of harm, new and highly potent synthetic opioids are of major concern (EMCDDA, 2015b; EMCDDA & Europol, 2015; Council of the European Union, 2005).

NPS are generally offered as legal alternatives to controlled drugs ("legal highs"), "research chemicals", performance-enhancing dietary supplements, and imitations of illicit drugs, or may appear as adulterants to well-known illicit drugs (EMCDDA, 2015b). A specific group of NPS is that of pharmaceuticals which are diverted by patients or their relatives to the black market or are imported illegally. NPS of synthetic origin, also referred to as "new synthetic drugs" (NSD), are rarely manufactured in Europe. They are often imported from China and India, in particular, and they are only processed and packaged in Europe.

The internet plays a pivotal role in the shaping of the NPS market. In 2013, the year of the last pan-European monitoring of the online supply of NPS, 651 web-based shops targeting the European market were identified (EMCDDA & Europol, 2014). In recent years, however, anonymised internet networks that are hidden from standard browsers – "darknets" – are used to trade in both new and "traditional" psychoactive substances, as well as in other illegal commodities (Pompidou Group, 2013).

A greater occurrence of NPS has been observed in the Czech Republic since 2010. Approximately until mid-2011, NPS were available from both land-based retail outlets and web-based marketplaces. Following an amendment to Act No. 167/1998 Coll., on addictive substances, effective from April 2011, land-based retail outlets were closed down. Nevertheless, NPS continue to be offered online (Grolmusová & Mravčík, 2012; Mravčík, Běláčková, Grohmannová, & Zábranský, 2015). Coordinated by the National Monitoring Centre for Drugs and Addiction (the National Focal Point), the Early Warning System providing notifications about any new drugs recorded 22 new psychoactive substances in the Czech Republic in 2014. 13 of them were identified for the very first time in the Czech Republic, and for two of them it was the first time they had occurred within the EU. They were most commonly cathinones and phenethylamines. The substances seized in the largest quantities included the cathinone referred to as MDPPP (2.2 kg) and the synthetic cannabinoid 5F-PB-22 (2.0 kg) (Mravčík, Chomynová, et al., 2015).

The National Focal Point conducts a regular survey of web-based shops (in this paper refered to as "online shops" or "e-shops") in order to map the extent of the online supply of NPS and to ensure the early identification of substances which have not yet been detected using other sources (such as law enforcement agencies and data on fatal and non-fatal intoxications). The survey has been performed since 2011 on a yearly basis. Similarly to the previous waves, the 2015 survey was particularly concerned with new synthetic drugs (NSD). Specifically, its objective was to establish: (1) how many online shops specialised in NSD at the time of data collection and what their share of the total number of shops offering NPS was, (2) what substances and products the shops specialising in NSD offered, (3) how many of the NSD on offer had not been identified by other sources, and (4) how many of the NSD on offer were not controlled narcotic and psychotropic substances.

2 METHODOLOGY

The survey of the online supply of NSD in 2015 was based on the "snapshot" methodology of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) developed for the purposes of mapping the online availability of NPS targeting EU population (Evans-Brown, 2013). Its aim was to identify online shops offering NSD and products containing them. In view of the large extent of the supply of NPS on the internet, the survey was limited exclusively to those sites targeting the Czech population, i.e. those offering products in the Czech language.

E-shop websites were searched using the three most used search engines – Google, Seznam, and Bing. Specific keyword text strings were used to perform this targeted search. They were created on the basis of keyword strings used in the 2014 survey of the web-based supply of NSD which consisted of generic terms for new psychoactive substances and names for specific herbal and synthetic substances or abbreviations, in the case of synthetic substances, generally derived from their chemical name

Table 1 / Tabulka 1
Strings of keywords used in the monitoring of the supply of NSD on the Internet in 2015
Řetězce klíčových slov použité při monitoringu nabídky NSD na internetu v roce 2015

Nr.	Strings of keywords
1.	buy (“legal highs” OR “legal high”)
2.	buy (“research chemicals” OR “research chemical”)
3.	buy (“herbal highs” OR “herbal high” OR “magické byliny”)
4.	buy (“bath salts“ OR “bath salt“ OR “party pills“ OR “high pills“ OR “party powder”)
5.	buy (“ethnobotanicals” OR “entheogens” OR “etnobotanický“ OR “entheogeny“)
6.	buy (“herbal incense” OR “herbal resin” OR “herbal blends” OR “incense blends” OR “vykuřovací směsi” OR “legal weed” OR “legal bud” OR “legal hash“ OR “legální hašiš” OR “aroma blends“ OR “herbal mix“ OR “JWH-“ OR “AM-“ OR “bylinky“ “vykuřovadla“ OR “legální tráva“ OR “5F-PB22“ OR “5F-AKB48“)
7.	buy (“kratom” OR “mitragyna”)
8.	buy (“salvia” OR “šalvěj divotvorná” OR “šalvěj”)
9.	buy (“mephedrone” OR “madcat” OR “4-MMC” OR “miaow” OR “meow meow” OR “mefedron”)
10.	buy (“mdpv” OR “methylenedioxypyrovalerone”)
11.	buy (“magic mushrooms” OR “hallucinogenic mushrooms” OR “shrooms” OR “psilocybin mushrooms” OR “psilocybe” OR “cubensis” OR “magické houby“ OR “lysohlávky“ OR “houbičky“)
12.	buy (“GHB” OR “GBL” OR “gamma hydroxybutyrate” OR “gamma butyrolactone”)
13.	buy (“calea zacatechichi“ OR “leonotis“ OR “nymphaea“ OR “kanna“ OR “damiana“ OR “sceletium tortuosum“ OR “kalea zakatečiči”)
14.	buy (“pentedron“ OR “pentedrone“)
15.	buy (“3-FA“ OR “4-FA“ OR “2-FMA“ OR “3FMC“ OR “MPA“ OR “ethylphenidate“ OR “ETH-CAT“ OR “6-APB“ OR “5-APB“ OR “3-MMC“)
16.	buy (“ketamin“ OR “ketamine“ OR “MDMA“ OR “MXE“ OR “metylon“)
17.	buy (“3,4-DMMC“ OR “4-FMC“ OR “4-MEC“ OR “MDPBP“ OR “MPPP“ OR “2-FMA“ OR “á-PVP“ OR “pyrrolidinopentiophenone“)

(EMCDDA, 2011; Národní monitorovací středisko pro drogy a závislosti, 2014). In order to ascertain the proportion of online shops selling substances of synthetic origin relative to the total number of online shops offering NPS, shops marketing plants or herbal products with psychoactive effects were also looked for in the first step. The key words thus also included names for herbal substances and plants. The search strings were updated in such a way as to reflect well the latest situation with regard to the occurrence of NPS in the Czech Republic. The main source for the updating of the key words was the 2014 Czech Early Warning System Report, specifically the overview of the NPS identified in the Czech Republic during the reporting period, including only substances confirmed by laboratory tests (the sources included NPS seized by the police or the customs service, NPS identified in biological samples, and the results of the analyses of the specimens of the substances provided by users).

The keyword strings comprised (1) the search operators “”, OR, and () used for the exact formulation of the search query, (2) the word “buy” to identify an online shop, (3) generic terms for NPS such as ”legal highs”, “research chemicals”, “entheogens”,[1] and ”magic herbs”, and (4) the names or denominations of various groups of specific substances such as 3,4-DMMC, 4-FMC, 4-MEC, MDPBP, kratom, salvia divinorum, and kanna. The search strings included the names or denominations of substances of both synthetic and herbal origin. The 2015 monitoring used a total of 17 keyword strings. They are summarised in *Table 1*.

The keyword strings were constructed in such a way as first to identify the maximum number of online shops offering NPS, specifically:

- online shops using generic terms for NPS to describe the products they offer,
- online shops selling products which were likely to contain synthetic cannabinoids, i.e. substances with effects that imitate those of marijuana or hashish,
- online shops selling other psychoactive substances of synthetic origin which imitate the effects of drugs such as cocaine, amphetamine, and ecstasy, and
- online shops selling psychoactive substances of herbal origin.

The keyword strings were entered into the search engine one by one. The first 100 search results were examined for content to see whether the links returned were of relevance, i.e. online markets offering NPS or other websites

1/ Psychotropic plants used in a religious context (Shanon, 2008).

containing the key words used. The following were not included in the selection of relevant search results:

- websites which contained the key words, but did not offer NPS for sale,
- websites in languages other than Czech, even though they involved online shops selling NPS,
- websites selling drug-using equipment and supplies (such as bongs, cigarette papers, and filters), cannabis or cactus seeds, mushrooms without psychoactive effects, and anabolic steroids,
- websites which only mediated seller-buyer contacts, but did not operate as a platform for carrying out the actual business transactions,
- websites featuring discussion fora, chatrooms, advertising portals, and social media such as Facebook or Twitter, and websites intended for sharing videos (YouTube).

After the content of the first 100 results had been assessed, an investigation was made of which of the results led to the next relevant link. In the event that none of the next 20 returns appeared relevant, the search using the given string was terminated. If the opposite, the results continued to be assessed until none of the next 20 links was relevant with respect to the objectives of the survey. The relevant search results were recorded in a form created in a tabular processor. Inspired by the original EMCDDA form, it contained the following items: keyword string number, search engine used, date of search, internet address, and a list of all the substances and products believed to contain new psychoactive substances on offer. The same procedure was applied to each keyword string and search engine. The data was collected in the period from 25 May to 31 May 2015. The data is both quantitative and qualitative in nature. Descriptive statistics were used to analyse the quantitative data.

3 RESULTS

A total of 33 online shops offering NPS in the Czech language were identified using the targeted search. Online shops with the .cz domain (21) clearly predominated among the selected e-shops. Other frequent domains were the generic domains .com (four e-shops) and .org and .eu (three each).

In terms of the nature of the products on offer, the sample of 33 online shops can be divided into four distinct categories: (i) nine shops specialising exclusively in synthetic substances, (ii) 11 shops specialising in plants with psychoactive effects or herbal products with psychoactive effects, (iii) 10 online shops offering plants with psychoactive effects or products containing them in addition to herbs with various effects and superfoods, and (iv) three shops selling plants with psychoactive effects or herbal products in addition to a wide assortment of other goods.

Online shops specialising in new synthetic drugs offered exclusively synthetic substances with psychoactive effects. The substances were generally identified by their abbreviated name or an abbreviation derived from their chemical denomination. The structural formulae of the substances or their forms, such as powder or crystals, were also often indicated. The shops which were found to offer at least one of the substances listed in the European database of substances monitored as part of the Early Warning System (EDND) were included in the sample. In certain cases, the offer was broken down into categories, the names of which implied that they encompass substances with psychoactive effects.

Online shops specialising in herbal drugs offered plants with psychoactive effects in the form of extracts, crushed or dry matter, and mixtures, or mushrooms with psychoactive effects. They were marketed under their Czech, Latin, or popular names. It was explicitly stated that the products for sale were of a herbal nature. The shops which were found to offer at least one of the plants or herbal products listed in the European database of substances monitored as part of the Early Warning System (EDND) and/or in the Encyclopaedia of Psychotropic Plants (Enpsyro), which is freely accessible via the biotox.cz website, were included in the sample. Some shops also offered articles for the growing of plants/mushrooms or articles for the administration of herbal drugs. While including e-shops that also offered NSD, this category predominantly featured the marketing of psychoactive substances of a herbal nature.

Online shops offering herbs and superfoods sold medicinal herbs and "superfoods"[2] in the first place, but their assortment also included plants or products with psychoactive effects. The shops which were found to offer at least one of the plants or herbal products listed in the European database of substances monitored as part of the Early Warning System and/or in the Encyclopaedia of Psychotropic Plants (Enpsyro), which is freely accessible via the biotox.cz website, were included in the sample.

Other online shops offered a wide range of products such as cosmetics, gifts, hand-made jewellery and clothes, tea, and dietary supplements. These online shops generally did not focus specifically on products intended for consumption or articles intended for the preparation or administration of substances. Plants with psychoactive effects or herbal products were only one of the product assortment categories.

In general, there was a wide range of synthetic substances with psychoactive effects, or products containing

2/ The Macmillan Dictionary defines superfood as food that is considered very good for one's health and that may even help some medical conditions (Macmillan Education, 2015)

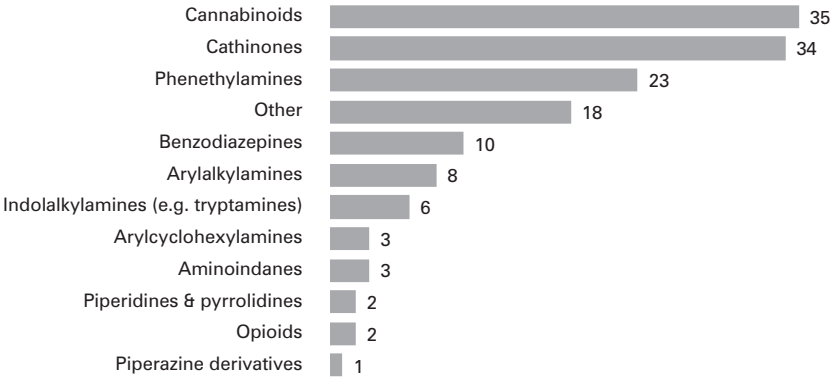

Figure 1 / Obrázek 1

Number of new synthetic drugs offered by online shops in 2015, broken down by chemical groups

Počet nových syntetických drog nabízených v internetových obchodech v roce 2015 v rozdělení podle chemických skupin

them, available in 2015. It comprised a total of 145 different NSD and 60 products containing NSD. The online shops offered 36 NSD on average. The offer of the online shops ranged from one to 106 substances, including NSD belonging to various chemical groups. As shown in *Figure 1*, synthetic cannabinoids, cathinones, and phenethylamines were the most common. NSD in these three chemical groups accounted for more than 63% of the total offer of NSD in 2015. The most common substance on offer was the synthetic cathinone alpha-PVP. In 2015 online shops also began to market synthetic opioids, namely MT-45 and butyryl fentanyl.

At the time of the survey, 63% of the substances offered by online shops in 2015 had not been identified and controlled as narcotic and psychotropic substances according to Act No. 167/1998 Coll., on addictive substances, and specified in Government Regulation No. 463/2013 Coll., on the lists of addictive substances, in the Czech Republic. As shown in *Table 2*, a total of 104 substances, i.e. almost 72% of the NSD offered by online shops in 2015, had not been demonstrably accounted for in other data sources in the Czech Republic (e.g. detected by the police or customs officers as new psychoactive substances). Out of this number, 91 substances (i.e. 88% of the substances not previously recorded in the Czech Republic) had not been listed as controlled narcotic and psychotropic substances in the Czech Republic at the time of the survey. On the other hand, NSD identified by the Czech Early Warning System, and previously listed as controlled drugs, accounted for 17% of the NSD on offer.

4 DISCUSSION

In methodological terms, the monitoring of the supply of NPS by means of online markets poses a considerable challenge. In recent years NPS, particularly substances of synthetic origin, have been receiving much interest in relation to their research, public health, safety, and legal aspects. This can be expected to have a major influence on the ways NSD are offered via the internet. Indeed, the previously used and well-known generic terms for NSD such as "legal highs", "herbal highs", "bath salts", or "research chemicals" have in many cases been replaced with the neutral term "products", followed by an inventory of the individual substances referred to by their chemical names or abbreviated forms, or just a simple list of the substances on offer. The construction of keyword strings thus become a neuralgic point of the entire monitoring process, especially because of the significant changeability of the supply of NSD.

While data from seizures made by law enforcement agencies is the pivotal aspect in constructing the keyword strings, it may not necessarily reflect the actual supply on the market. Moreover, seizures mainly concern controlled narcotic and psychotropic substances rather than new psychoactive substances that may conform to any formal requirements for importation into the Czech Republic. However, access to relevant data about the importation of such

Table 2 / Tabulka 2

Number of new synthetic drugs offered by online shops in 2015, broken down by their legal status and proven occurrence in the Czech Republic

Počet nových syntetických drog nabízených v internetových obchodech v roce 2015 v rozdělení podle legálního statutu a prokázaného výskytu v ČR

NSD in the Czech Republic	Controlled substances		Uncontrolled substances		Total	
	Number	Share (%)	Number	Share (%)	Number	Share (%)
Substances detected in the Czech Republic	25	65.8	16	15.0	41	28.3
Substances not yet detected in the Czech Republic	13	34.2	91	85.0	104	71.7
Total	**38**	**100.0**	**107**	**100.0**	**145**	**100.0**

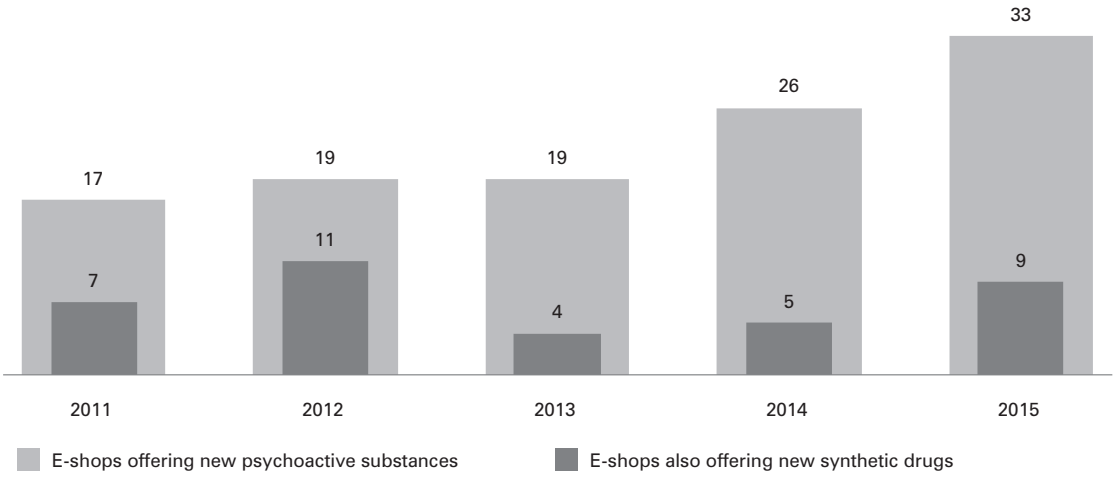

Figure 2 / Obrázek 2

Number of e-shops offering new psychoactive substances and e-shops specialising in synthetic substances, Czech Republic, 2011–2015

Počet e-shopů s nabídkou nových psychoaktivních látek a e-shopů specializovaných na syntetické látky v češtině v letech 2011–2015

legal psychoactive substances is prevented by the record-keeping system established by the customs service. The results of analyses of biological samples or unknown samples from users, i.e. relatively clear indicators of what is currently being used on the drug scene, are available only rarely, mainly because of the absence of a systematic collection of data on clinical toxicological tests. This lack of evidence is also due to the fact that the detection of substances other than those on standard screening toxicological panels is relatively rare. In view of the above, the construction of keyword strings is inevitably problematic.

It can also be assumed that online shops in languages other than Czech, especially English, may also represent quite a frequent source of NSD for the Czech population. The most recent data for this segment of the market is not available, unfortunately, as the last time comprehensive monitoring was carried out was by the EMCDDA in 2013 (EMCDDA & Europol, 2014). It is therefore difficult to estimate what proportion of the drug market in NSD in the Czech Republic is covered by online shops using languages other than Czech to communicate with their prospective customers.

Another significant segment of the drug market which represents a source for purchasing NSD is the so-called "darknet" – a network which is accessible only with special software (e.g. the TOR browser) and special configurations and authorisations and which uses non-standard communication protocols and ports. The very nature of these networks imposes great demands on any efforts to map this segment of supply and makes it very difficult indeed (Pompidou Group, 2013). The emerging supply of NSD via advertising portals is an equally unexplored area of the market.

When interpreting the results, one should therefore bear in mind that the websites offering products in Czech that were selected and analysed represent only a segment of the total supply of NSD on the market.

In the Czech Republic the monitoring of the supply of new drugs via online marketplaces has been performed since 2011 (Mravčík et al., 2012; Mravčík, Chomynová, et al., 2015; Mravčík et al., 2013, 2014). The supply of NSD seems to expand yearly; the number of online shops specialising in NSD is growing and so is the number of NSD on offer. In 2015 these numbers more than doubled in comparison to the previous year; see *Figure 2*.

In 2015 the numbers of substances and products sold via online shops were the highest for the entire period under monitoring (since 2011). In comparison with 2014, when 64 NSD were on offer, the number of NSD sold online was more than double that in 2015. The time series featuring data on the number of substances and products offered in the individual years reveals two milestones. Until 2012 products containing NSD marketed under various commercial names such as Diablo, Afghan Fire, Blue Magic, and Rave On seemed to predominate in the offer of online marketplaces. In 2013 NSD began to be marketed under their chemical names. The year 2015 brought a change in that products with various commercial names, often with any specification of the NSD they contained, reappeared on the market; see *Table 3*.

Four years (from 2012 to 2015) was the longest period of time for which online shops selling NSD were in operation. This was the case with two online shops. The first of them was an e-shop with a very simple website structure. Throughout its operation it offered only one psychoactive substance – mephedrone, which is probably the best-known cathinone. Within the EU mephedrone was reported for the first time in 2008, in the Czech Republic two years later. The web pages of this online shop were probably launched before the first monitoring in 2011 and before mephedrone

Table 3 / Tabulka 3
Supply of new synthetic drugs through online shops, 2011–2015
Nabídka nových syntetických drog v internetových obchodech v letech 2011–2015

Indicator	2011	2012	2013	2014	2015
Total number of e-shops offering NSD	7	11	4	5	9
Number of newly identified e-shops	–	7	1	1	5
Number of wound-up e-shops	6	6	0	1	–
Total number of NSD on offer	5	12	42	64	145
Total number of products containing NSD on offer	16	53	1	4	60
Minimum number of substances offered by the e-shops	1	1	1	1	1
Maximum number of substances offered by the e-shops	4	12	32	37	106
Average number of substances offered by the e-shops	1	3	18	20	36

was added to the list of controlled substances in the Czech Republic on the basis of an amendment to Act No. 167/1998 Coll., on addictive substances, effective from April 2011. The website was in Czech and never offered any other language versions. Besides contact details, a postal address, an e-mail address, and a telephone number, it contained no further information. The second longest-operating online shop was more elaborate. It was created and operated in three language versions – Czech, Polish, and English. It declared that its products were of high quality, and included a list of analytical methods for testing substances. It also displayed a note that the products were intended for technical use only, were harmful to health, and that the vendor waived responsibility for any damage resulting from the use of the product for purposes other than that for which it was intended. Its "Updates" section informed customers about new products on offer, discounts, delivery dates, etc. Updates were provided 1-3 times per month. Five new online shops offering NSD which were not recorded during the previous waves of monitoring were identified in 2015. But all these cases involved e-shops where Czech was only one of many language versions created by a machine translator.

The most common substance offered for sale in 2015 was alpha-PVP, a synthetic cathinone derived from the already controlled pyrovalerone. More than 100 fatal intoxications associated with alpha-PVP have been reported in the EU, with this substance being the cause or one of the causes of death in at least 23 cases (EMCDDA, 2015a). This substance is currently undergoing the risk assessment procedure carried out by the EMCDDA and Europol which serves as the basis for decision making about the control of NPS at the EU level.

The synthetic opioids MT-45 and butyryl fentanyl represented new items in the offer of NSD in 2015. The opioid MT-45 was first reported by the European Early Warning System in Sweden in 2013. 28 deaths were reported in association with MT-45 in the EU countries (from November 2013 to July 2014), and in another 19 cases MT-45 was the cause of death or a major contributing factor (EMCDDA, 2015c). In September 2014 the risk assessment of this substance was carried out. On the basis of the results of the risk assessment, the European Commission decided in October 2014 that control measures should be taken in the EU countries. In the Czech Republic MT-45 has been controlled since October 2015, when the latest amendment to Government Regulation No. 463/2013 Coll., on the lists of addictive substances, came into effect. MT-45 has not been detected yet in the Czech Republic. Butyryl fentanyl was first reported in Poland in 2014. Apart from Sweden and Finland, it has not been identified in any other country. This substance is controlled neither on the international nor European level.

The growing supply of NSD does not necessarily imply a growth in the prevalence of the use of these substances among the Czech population. The level of the current use (i.e. use in the last 12 months or 30 days) of NSD in the general population has been close to zero for several years now. A higher level of current experience with NSD has been recorded among problem drug users or dance partygoers. Problem drug users mainly show experience with cathinones, which became known as "Funky" on the black market. However, they are rarely the primary drug. As regards dance partygoers, a survey conducted in 2014 indicated that 16.9% and 7.2% of the respondents had used NSD at any point in their lives and in the past 12 months, respectively. The most common substances reported by the respondents were mephedrone and products referred to as "Funky" or "Turbo TDI" (Mravčík, Běláčková, et al., 2015; Mravčík, Chomynová, et al., 2015).

5 CONCLUSION

An increase in the occurrence of new synthetic drugs in the Czech Republic has been observed since approximately 2010. Since their supply through land-based retail outlets

was significantly curtailed in April 2011, NSD have been available particularly, and increasingly so, via the internet. To a limited extent, however, they can also be obtained on the black market in traditional illegal drugs. The offer of NSD on the internet is growing. In 2015 the numbers of e-shops and substances and products reached their highest levels since 2012. The NSD on offer in 2015 included especially new substances which had not come under control in the Czech Republic. The NSD marketed online comprised mainly cathinones and cannabinoids, while synthetic opioids appeared for the first time in 2015. The level of use of these substances in the Czech Republic has so far been relatively low. Higher levels of experience with them have been shown among problem drug users and dance partygoers.

Surveys of the offer of NSD on the internet are a useful component of the monitoring of the supply of NSD on the drug market. However, the information these provide and its usability for the systems of warning against new drugs and their control will be limited unless such surveys include mystery shopping and subsequent chemical analysis of samples of NSD.

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Konflikt zájmů*: Bez konfliktu zájmů.*

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PŮVODNÍ PRÁCE

Monitoring českých diskuzních fór o nových psychoaktivních substancích – obsah a trendy

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VÝCHODISKA: *Informace o nových psychoaktivních látkách (NPS), jejich rizicích a účincích jsou nedostatečné. Analýza obsahu diskuzních fór může přinést chybějících data.* ***CÍLE:*** *Cílem monitoringu obsahu českých internetových diskuzí o NPS bylo popsat a kategorizovat obsah diskuzí a zaznamenat případné trendy v užívání a nákupu NPS.* ***METODY:*** *Dvě česká diskuzní fóra pro uživatele NPS s 1916 příspěvky byla zpracována prostřednictvím kvalitativní a kvantitativní analýzy obsahu. Monitorována byla jednou měsíčně od ledna 2013 do prosince 2014.* ***VÝSLEDKY:*** *V roce 2014 byl zaznamenán celkový úbytek diskutujících (-20 %) a příspěvků (-49 %). V tomto roce také poklesl podíl příspěvků, jež se zabývaly tzv. komerčními produkty / sběratelskými předměty (z 20 % všech příspěvků na 0,3 %) a narostl podíl příspěvků na téma tzv. výzkumných chemikálií (z 36 % všech příspěvků na 45 %). To může být dáno sníženou nabídkou komerčních produktů a odrazujícími vlastnostmi těchto produktů (neznámé složení, nepředvídatelné účinky). Oblíbené české internetové obchody podle diskutujících ukončily v roce 2013 svou činnost; začaly být využívány zahraniční e-shopy. Závěry analýzy se částečně shodují s informacemi z dalších zdrojů.* ***ZÁVĚRY:*** *Diskuzní fóra hrají stěžejní roli v získávání informací o NPS a jsou svépomocným nástrojem pro snižování případných rizik pro uživatele NPS. Analýza jejich obsahu může přinést informace pro široké pole odborníků, zejména jako součást komplexního přístupu k mapování fenoménu NPS.*

KLÍČOVÁ SLOVA: NOVÉ PSYCHOAKTIVNÍ LÁTKY – ONLINE DISKUSNÍ FÓRA – KVALITATIVNÍ OBSAHOVÁ ANALÝZA – KVANTITATIVNÍ OBSAHOVÁ ANALÝZA – TRENDY

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ORIGINAL ARTICLE

Monitoring of Discussion Forums on New Psychoactive Substances in the Czech Republic – Content and Trends

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BACKGROUND: Given the lack of information about new psychoactive substances (NPS), their effects and risks, analysis of online discussion forums is a useful method to obtain this data. AIMS: Monitoring of Czech online discussions about NPS aimed to describe and categorise their content and identify trends in the use and purchase of NPS. DESIGN AND MEASUREMENTS: The content of two Czech discussion forums for users of NPS with 1916 posts was analysed quantitatively and qualitatively. The forums were monitored on a monthly basis from January 2013 to December 2014. RESULTS: The forums contain a wide range of knowledge about NPS and their purchase which is based on users' own experience, supplemented by information from other sources. A substantial decrease in the number of discussants (-20%) and posts (-49%) was observed in 2014. In that year, the share of the posts dedicated to so-called "commercial products/collectors' items" decreased (from 20% to 0.3% of all the posts), while the share of posts discussing so-called "research chemicals" increased (from 36% to 45%). Qualitative analysis suggests that this may be due to a reduced supply of commercial products on the market and the discouraging properties of such products, such as their unknown and changing content and unpredictable effects. As indicated by the posts, the most popular Czech web-based shops wound up their activities in 2013. Consequently, the members of the forums started to purchase more frequently from foreign online shops that they had previously avoided. To some extent, the outcomes of the analysis correspond with the relevant information on NPS use available from other sources. CONCLUSIONS: Discussion forums play a crucial role as a source of information about NPS and are a self-help tool for reducing the potential risks for their users. When made part of a comprehensive monitoring approach, analysis of forum's content can yield information for a wide array of experts.

KEY WORDS: NEW PSYCHOACTIVE SUBSTANCES – ONLINE DISCUSSION FORUMS – QUALITATIVE CONTENT ANALYSIS – QUANTITATIVE CONTENT ANALYSIS – TRENDS

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1 INTRODUCTION

New psychoactive substances (NPS) are defined as substances of abuse in pure form or in a chemical mixture that have not been scheduled under the 1961 United Nations Single Convention on Narcotic Drugs and the 1971 United Nations Convention on Psychotropic Substances and may pose a threat to public health" (EMCDDA, 2009). These substances are often referred to as "legal highs", "research chemicals", or "party pills" (Corazza et al., 2013).

1 / 1 Typology of NPS in terms of marketing strategies

NPS are marketed as "commercial products" or "research chemicals". Commercial products are named in such a way as to suggest either the type of the effect they produce or their illegal counterparts. In the Czech Republic they are known as "collectors' items", which were offered by so-called Amsterdam Shops in 2010. The names do not provide any clue as to their compounds and they often involve mixtures of multiple substances (Corazza et al., 2014b; Schifano et al., 2009).

"Research chemicals" (RCs) are generally referred to by their chemical or pharmacological names (González et al., 2013). RCs are particularly preferred by "e-psychonauts", who tend to be highly knowledgeable about NPS and try to use such knowledge in order to minimise the risk the use of them entails. This group of users does not favour "commercial products" because of their unknown and variable content (Davey et al., 2012). According to Corazza et al. (2014b), "commercial products" are more intended to captivate younger and less experienced NPS users.

1 / 2 Occurrence and supply of NPS

The number of NPS reported in Europe for the first time grows every year (81 new NPS in 2013, 101 in 2014) (EMCDDA, 2015). In the Czech Republic, 48 NPS were intercepted in 2013. 12 of them were identified for the very first time in the Czech Republic, and for three of them it was the first time they had occurred within the EU (Mravčík et al., 2014). 22 NPS were reported for the first time in 2014 (NMS, 2015). At the beginning, the distribution of NPS could be monitored through land-based retail outlets. In recent years, however, a major part of this market has moved online (Bruno et al., 2013; Corazza et al., 2014a).

Using a snapshot survey method (Hillebrand et al., 2010), 651 online shops selling NPS to customers in Europe were identified (EMCDDA, 2014). In the Czech Republic, too, the sale of NPS moved online following the closedown of brick-and-mortar Amsterdam Shops and similar retail outlets in 2011. As of August 2014 NPS could be purchased from 26 online marketplaces in the Czech language. This meant an increase against 2013, when 19 web-based shops were recorded. There was also a year-on-year increase in the number of the substances on offer: from 42 in 2013 to 64 in 2014 (Mravčík et al., 2014).

1 / 3 Information about NPS Use

According to the Eurobarometer survey, the lifetime prevalence of NPS use among the European population of young adults (aged 15-24) was 8% in 2014, while in 2011 it was 5%. The highest lifetime prevalence of NPS use was recorded in Ireland (22%), Slovenia (13%), and Spain (13%). As in 2011, NPS use in the Czech Republic reached the 4% level in 2014 (Eurobarometer, 2011, 2014). A Czech general population survey carried out in 2013 recorded a 0.6% lifetime prevalence of the use of other synthetic drugs among the 15-64 age group (Mravčík et al., 2014). However, it is complicated to identify the prevalence of NPS in population surveys, as there is no single generally accepted name for these substances and the number of NPS which respondents could be asked about is high. In addition, users often do not know the names of the substances they have used (Grolmusová & Mravčík, 2012).

The use of NPS seems to be preferred by specific populations, such as dance partygoers (Benshop et al., 2011; Measham et al., 2011) or problem drug users (Abagiu et al., 2014; Malczewski et al., 2013). Online discussion forums ("forums") are used as sources of information about the effects of the substances, particularly when no long-term pharmacological and toxicological studies or other peer-reviewed evidence is available (Corazza et al; 2014b; Deluca et al., 2012; Jebadurai et al., 2013; Schifano et al., 2009; Schifano et al., 2011; Schifano et al., 2005; Soussan & Kjellgren, 2014).

1 / 4 Online Discussion Forums and Their Role in the Monitoring of NPS

Members of discussion forums work as a self-supporting community, the primary focus of which is to obtain and share information about substance use (Kjellgren et al., 2013; Stockdale et al., 2007). The information that is exchanged there includes that concerning the composition of commercial products (Soussan & Kjellgren, 2014), the origin of substances and their chemical structures and pharmacological and toxicological characteristics, and that about tolerance and both desirable and undesirable effects. Users were found to be highly knowledgeable in this respect (Soussan & Kjellgren, 2014).

The exchange of information is useful in reducing the risk of NPS use and maximising the pleasurable sensation the use of them may induce (Drápalová & Běláčková, 2014; Soussan & Kjellgren, 2014). Czech-speaking discussion forums were studied by Drápalová and Běláčková (2014). They confirmed that some users perceive the effects of NPS as low and, therefore, there is a risk of overdosing on sub-

stances which are capable of inducing strong effects even in small doses.

As the NPS market is undergoing constant development and changes, it is vital that it is monitored on a regular and long-term basis in order to identify the latest trends and patterns of NPS use (Corazza et al., 2014b; Deluca et al., 2012; Schifano et al., 2009). According to Soussan and Kjellgren (2014), information on specific NPS appears on the forums before the substances are identified by the Early Warning System. It is also important to monitor the forums as a method of keeping a record of local trends, as the use of NPS may differ dramatically at the national and subnational levels (Deluca et al., 2012).

The objective of the monitoring of the content of Czech online discussions about NPS which this article reports on was to describe the developments concerning (i) NPS use (the NPS being discussed, what experience users have with NPS is reflected in the subjects raised in the discussions, the quality of the substances used, and whether forum members advise each other and what such advice pertains to, and any other NPS-related information they may share among themselves) and (ii) NPS-related purchasing practices (the shops/transactions being discussed and their characteristics, the purchasing process, the quality of the shops, and whether the people involved in the discussions offer to sell or buy NPS among themselves).

2 METHODS

Internet discussion forums for NPS users were looked for using Google's full-text search engine. The first ten results of each search operation involving the key phrases "Amsterdam Shop", "legal highs", "research chemicals", and the Czech equivalents of "new drugs", "discussion", "forum", and "experience" were subjected to thorough scrutiny. The search process yielded two forums that were dedicated to NPS and in operation from January 2013 to December 2014. The forums are described in more detail in *Table 1*.

Both forums were monitored on a monthly basis and their content was saved in text files. As part of the I-TREND project, the monitoring of discussion forums was also undertaken in other European countries (France, the United Kingdom, Poland, and the Netherlands). Both forums generated a total of 1,916 posts (an average of 80 posts per month), which were subjected to content analysis (Holsti, 1969). The amount of data made it possible to analyse all the posts in both forums.

Content analysis is a research method which makes it possible to provide an objective and systematic account of the explicit content of communication (Berelson, 1952). Both qualitative and quantitative approaches were applied. The qualitative approach was used to examine the content of the forums in order to create representative semantic categories, to which larger segments of text could be assigned on the basis of their meaning. Using the open coding method, the authors identified semantic units represented by codes. Then they broke down all the semantic units found in the text into a multi-level code structure, described in more detail in *Table 2*. The categories were created partly by using the template provided under the I-TREND project (Martinez, 2013), partly on the basis of previous research studies (Drápalová & Běláčková, 2014; Soussan & Kjellgren, 2014), and partly inductively, reflecting the content of the text under analysis (Kondracki & Wellman, 2002). Such an approach is typical of a conventional content analysis (Hsieh & Shannon, 2005).

The quantitative content analysis focused on the number of posts dedicated to specific NPS and web-based marketplaces, i.e. their "topicality". Because of the structure and volume of the data in the Czech forums, other indicators proposed by the I-TREND project (Martinez, 2013) could not be monitored. Qualitative content analysis was helpful in interpreting the changes in the study indicators from 2013 to 2014. The conceptualisation and categorisation of the meanings was useful in sorting the results and in formulating several theoretical outcomes, using the grounded theory method (Glaser & Strauss, 1967).

The validity of the research was assured by the triangulation of the data collection methods (qualitative and quantitative content analysis and the data being analysed by both authors independently of each other) and data

Table 1 / Tabulka 1
Internet discussion forums for NPS users under analysis
Analyzovaná internetová diskuzní fóra pro uživatele NPS

Name	Accessibility	Administrator	Number of posts			Number of unique discussants		
			2013	2014	2013 vs. 2014 change	2013	2014	2013 vs. 2014 change
Forum 1 (lide.cz)	Public	Yes	968	124	-87.2%	49	28	-42.9%
Forum 2 (nyx.cz)	Accessible after logging in	Yes	299	525	75.6%	49	50	2.0%
TOTAL	**n. a.**	**n. a.**	**1267**	**649**	**-48.8%**	**98**	**78**	**-20.4%**

Table 2 / Tabulka 2
Semantic categories describing the content of discussion forums
Významové kategorie charakterizující obsah diskuzních fór

Main categories	Subcategory I	Subcategory II
Discussion about NPS	Substances discussed	Commercial products
		Research chemicals
	Experience with the substances	Appearance
		Dosage
		Route of administration
		Effect
		Duration of effect
		Quantity used and the frequency of use
		Other substances
		Preparation
		Duration of effect
		Set and setting
	Quality of the substances	Strength of effect
		Changes in quality
		Purity
	Counselling	Request for a review of a substance
		Recommendation of a suitable NPS
		Maximisation of effect
		Risk minimisation
	Information about the substances	Chemical composition
		Mechanism of action
		Risk potential
		Content
		Legality
Discussion about the purchase and sale of NPS	Specific shops discussed	Names
		Purchases in the Czech Republic
		Purchases abroad
	Characteristics of online shops	Provenance
		Accessibility
	Buying process	Ordering
		Payment
		Delivery
	Quality of online shops	Satisfaction
		Issues
		Comparison of quality
	Purchase, sale, and sharing of NPS among forum members	Purchase
		Sharing
		Sale
		Manufacturing

sources (comparison of the data with that generated by similar research projects in the Discussion section).

All the discussants' statements were quoted anonymously. In order to strengthen the measures taken to prevent any identification, it is not indicated which forum the statements were taken from and it was checked that they cannot be retrieved using internet search engines.

3 RESULTS

The number of posts that were analysed suggests that from 2013 to 2014 there was a decline in the number of posts pertaining to NPS (see *Table 1*). The year 2014 saw an overall drop in the number of discussants (-20%) and posts (-49%). While the activity on www.lide.cz subsided (the numbers of discussants and posts declined by 43% and 87% respectively), an increase in the number of posts was observed on the www.nyx.cz forum (the number of discussants rose by 2% and the number of posts by 76%).

The results of the work were divided according to semantic categories (see *Table 2*) into two semantic units – discussions concerning the individual NPS and the topics related to the purchase of NPS.

3 / 1 Discussions about NPS

Specific NPS and experience of their use and quality were discussed on the forums. A great number of the posts also involved recommendations concerning the choice of the right NPS and the circumstances for using it which might maximise the desired effects while minimising the adverse ones. Forum participants often shared information obtained from other online sources, too.

3 / 1 / 1 Substances under Discussion

The substances addressed in the discussions were informally categorised by the discussants into "commercial products" and "RCs". Herbal products and illegal drugs included in the discussions were not classified as NPS for the purposes of this study. The number of posts mentioning a specific commercial product or RC was followed for a period of two years; *Table 3* provides an overview of the "commercial products" and RCs were discussed most.

In 2013 a total of 27 commercial products were discussed in 258 posts (approximately 20% of all the 1,267 posts in that year), while in 2014 it was only two commercial products in two posts (approximately 0.3% of the total of 649). In 2013 altogether 45 different RCs were discussed in 453 posts (36% of the total), while in 2014 it was 66 RCs in 291 posts (45% of the total); see *Table 3*. To summarise, there was a major decrease in the proportion of posts addressing so-called "commercial products/collectors' items" and a growth in the percentage of posts on "research chemicals" was observed, together with a greater range of RCs.

3 / 1 / 2 Experience with the Substances Used

The discussants exchanged information about their experience with the use of specific substances. They described their appearance, the dose used, the route of administration, specific physical and psychological effects and the duration of such effects, the total quantity used, and the circumstances and frequency of use. The comparison of the effect of an NPS in contrast to an illicit substance or to an already-known NPS, and the indication of the substances used in combination with a specific NPS, whether to maximise their effects or mitigate the adverse ones, were common topics. Instances of shared experience including all the above information in a single post and thus coming close to the fulfilment of the criteria for a "trip report"[1] were rather rare during the period under study; they were more frequent in relation to NPS with hallucinogenic effects. Other reports tended to limit themselves to a short description of several aspects of experience with NPS, sometimes involving only a basic summary account indicating whether a specific NPS works or not: "*Cherry Cocolino – very weak, kind of wishy-washy, just for a while and unpleasant comedown. MPA at least works in comparison with other products.*"

The effects of some of the substances, e.g. hallucinogens, synthetic cannabinoids, and some euphorising substances and stimulants such as 3-MMC or 4-FA, were found to be strong. Soon after they had been tried, low-effect substances received negative reviews: "*4-FMA is a weak substance with a negligible effect, something like a coffee made of grounds that have already been used.*" The quality of a specific NPS could change over time, as observed in discussions about commercial products, in particular: "*I'd say that in the case of White Champagne they really went down with the quality. The first batch (about half a year ago) worked better, I think – in terms of both stimulation and euphoria. About a month ago I ordered another batch, but it is far weaker and the comedown is harder, too.*"

The users also mentioned differences in the quality of the individual RC products (across different producers, in particular), despite the fact that the products were sold under the same chemical formula: "*You may find it strange, but there are five different makers of EP (ethylphenidate), but the products have completely different effects, although you get the basic thing, i.e. stimulation, from all of them. Of this assortment, LegalWeed has the highest quality, at least it did until recently.*" Low or unexpected effects were explained by the discussants by the presence of admixtures intended to either increase the volume of the product being sold or provide a new dimension of the effect of the product.

1/ Trip report, or a detailed description using a conventional formal structure produced by a user in response to their personal experience with a psychoactive substance (Lahaie et al., 2013).

Table 3 / Tabulka 3

NPS discussed in Czech online discussion boards in 2013 and 2014 – NPS with five and more posts

NPS diskutované v českých online diskusních fórech v letech 2013 a 2014 – NPS s pěti a více příspěvky

	Commercial products		Research chemicals	
	2013	**2014**	**2013**	**2014**
NAME OF PRODUCT (number of posts; number of users describing direct experience); products and chemicals that were discussed in both years are in bold print	Funky (88;24) Cherry Cocolino (47;22) EX (13;6) Wlodziu (11;6) No Name (10;4) El Magico (9;5) Fresh and Funky (9;4) Pikon (9;1) Chujnia (8;3) White champagne (8;2) Herbal Blend (6;1) Ibiza (5;1)	n.a.	**3-MMC (92;14)** **pentedrone (52; 12)** **MPA (50;12)** **ethylphenidate (29;9)** **dextromethorphan (26;5)** **DMT (24;0)** **2C-B (21;8)** **6-APB (14;2)** **4-FA (13;6)** **AMT (11;7)** **4-MEC (11;2)** ethcathinone (9;6) **methoxetamine (9;3)** **5-Meo-DMT (8;1)** **2C-E (8;2)** **Nbome (7;0)** 3-FMC (7;1) **3-FA (6;0)** **2C-C (5;2)** 2C-Nbome (5;1)	**3-MMC (22;4)** **25I-NBOME (19;5)** **AMT (16;8)** **ethylphenidate (15;10)** **5-meo-DMT (14;3)** **DOB (14;6)** 25C-NBOH (13;4) MDPV (13;0) **NBOME (12;3)** 25i-NBOH (11;2) **DMT (9;1)** **4-FA (8;3)** AL-LAD (7;0) 25c-NBOME (6;2) 2-FMA (5;0) bk-2C-B (5;1) LSZ (5;0), **methoxetamine (5; 1)** **MPA(5;2)** **pentedrone (5;0)**
TOTAL number of unique products discussed	27	2	45	66
TOTAL number of posts in which a product discussed	258	2	453	291
Total PERCENTAGE of posts on specific NPS in the study period	20%	0.3%	36%	45%

The composition of the NPS used was a major topic. RCs were viewed by the forum members as products that contain the components as declared, while the composition of commercial products was viewed as unknown. The discussants tried to guess the composition on the basis of the effects and appearance of the substances and the information from international forums, often calling for a drug checking service. Some discussants considered that the use of commercial products posed a higher risk. Neither was the use of RCs considered safe: *"I don't understand how anybody can gamble with his health by taking something he really knows nothing about (with reference to a commercial product of unknown composition). RCs pose a great deal of risk anyway."*

In their efforts to orient themselves in a tangle of several hundred products of varying quality and originating from different sellers, the forums provided the discussants with a platform on which to share and exchange experiences. Before using a new NPS, the discussants asked others about their own experience. Some let their more experienced peers recommend a specific NPS which would meet their expectations. Posts referring to various attempts to maximise the "high" achieved by NPS use, e.g. through suitable combinations of several NPS, were also recorded: *"As I already had some MPA at home, I tried it both alone and together with 3-MMC. When taken alone, it really has no effect on the mood, although perhaps it does just a little. With 3-MMC, it seems to me that the states link up nicely."* The discussants tended to minimise adverse effects and the NPS-related risk of damage to health by means of alternative routes of administration, for example: *"For some substances, rectal administration is the best (…) In AMT use,*

for example, this greatly reduces the nausea which is common when it is digested." The discussants warned each other against the harm which other NPS users could be exposed to: "*Just to warn you. I used something between 0.5g and 0.75g of 3-MMC. As with mephedrone, very realistic hallucinations occurred."*

Knowledge attained through direct experience was added to by information from other sources, such as other internet discussion forums and scientific publications and the media, to create a comprehensive body of knowledge about the individual substances, including their chemical properties and the mechanism of their action on the human body, including their toxicity, as applicable. Some of the participants in the discussion possessed detailed knowledge of chemistry, biology, and even medicine. Despite a great amount of information from international forums, some of the forum participants found the experience of Czech NPS users more reliable and authentic: "*Have any of you got any negative feedback on 25i-nbome directly from the Czech Republic or your surroundings? Most of the messages from abroad do not sound very compelling to me."*

A body of information in its own right was provided by discussions about the legality of the substances. The discussants wanted to avoid the potential risk of ordering a substance which had already been banned. The safe delivery of a shipment requires the NPS to be legal both in the Czech Republic and the country where the shops dispatched their goods from.

3 / 2 Discussion about the Purchase of NPS

The second main thematic category involved discussions concerning the purchase of NPS. Forum members discussed different web-based marketplaces, their attributes, the process of shopping for NPS, and the quality of online shops. The selling, demanding the purchase, and sharing of NPS among the members occurred. A total of 38 shops were discussed in 2013, while in 2014 it was no more than 21. The shops are summarised in *Table 4*.

3 / 2 / 1 Online Shops under Discussion

The discussants tended to divide the online shops into Czech and foreign ones, according to the domain and the language interface. It should be noted at this point that the .cz domain suffix in the URL address does not necessarily guarantee that the shop is Czech. The shop Rc-lab.cz, for example, is in the Polish language. For some of the discussants it was the use of the Czech language in the interface of an e-shop that mattered; for example, the Rc-chem.eu marketplace was considered Czech despite its eu. domain suffix. Even this feature was complicated by the presence of several versions of the e-shop in different languages, with the translation often being generated by online machine translators: *"I would not take that Czech too seriously. It's just an online automated translation. When you go for Czech, price values are the same like in Euros, only currency suffix is changed to CZK."*

The year 2013 saw a gradual increase in problems with the operation of "Czech" online shops, such as Amsterdam Shop (selling mainly "commercial products") and Rc-chem.eu

Table 4 / Tabulka 4

Online shops with NPS discussed in Czech online discussion boards in 2013 and 2014 – shops with five and more posts

Online obchody s NPS diskutované v českých diskusních fórech v letech 2013 a 2014 – obchody s pěti a více příspěvky

	2013	2014
Name of shop (the figure in parentheses indicates the number of posts). Shops that were discussed in both years are in bold print.	Amsterdam Shop (136)	**Genuine RC shop (23)**
	Rcchem.eu (72)	Research-blotz.com (20)
	Legalweed shop (34)	Rcchem.eu (10)
	Euforia Shop (31)	Research-chemical-wholesale.com (9)
	Partyshop6.webnode.cz (16)	Rcnet-chemicals.com (6)
	Kolekcjoner.nl (11)	Buy-jwh.com (5)
	Rc-lab.cz (11)	Officialbenzofury.com (5)
	Triloxxboxx.cz (11)	Sklep-euforia.pl (5)
	Genuine RC shop (8)	
	Buckledbonzi.co.uk (7)	
	Mefedronshop.cz (7)	
	Upalacze.eu (7)	
	Astro-lab.com (6)	
	Botanic.cz (6)	
	Isomerism.org (5)	
TOTAL	**38 unique shops**	**21 unique shops**

(selling exclusively RCs). While Amsterdam Shop definitively wound up its activities in July 2013, Rc-chem.eu remained in operation, although intermittently, until 2014. By the end of 2014 users of discussion forums had concluded that "Czech" online shops had been taken down: *"There are no longer any e-shops in Czech I know of. You need to order from the EU."* One explanation is the effective law enforcement associated with the efforts to tackle the activities of such marketplaces: *"Thanks to the legislation effective in the Czech Republic ("promotion of drug use"), the operation of an RC shop is quite a risky business here."*

3 / 2 / 2 Experience with the Purchase of NPS

The discussants' description of the process of online shopping for NPS involved the exchange of their experience with the actual placement of orders for goods. Cash-on-delivery transactions (COD), where a customer pays at the post office when collecting the product, seemed to be popular with the discussants. Advance payment methods, including bank transfers and payments by means of debit/credit cards, the PayPal system, and the Bitcoin virtual currency, were not so popular, as they exposed the buyers to a higher risk of fraud and increased the total cost of the order: *"So the ordering system on Rc-chem.eu has changed a bit, for the worse, unfortunately. There is no cash-on-delivery any more. You must send the money upfront to a bank account in Hungary, which is quite pricy if you do it through a Czech bank." "Well, it's always a bit of a gamble to send money in advance; with these items, especially, it's hard to claim your rights – I'd be reluctant with greater amounts."*

The quality of online shops was a common topic of discussion. In this respect, too, the forum worked as a sort of counselling service where the less experienced looked for a shop on the basis of recommendations and evaluation from other participants in the discussion. When happy with a specific shop, the discussants tended to recommend it to others. They thought that positive characteristics of a shop included reliability, the provision of information about product composition, a simple payment system, short delivery time, and a wide assortment of goods. The image of a shop was further improved by bonuses, discounts, or other products added to the buys as extras: *"Hi, has anybody tried BK-2CB? They offer it now on rc-net with a 30% Christmas discount, so I'm thinking of giving it a try." "I did two orders from them. Once I got a present from them and the other time there was no postal charge. So just happy with that."*

Amsterdam Shop and Rc-chem.eu, the two marketplaces which were brought up the most frequently in connection with the year 2013, were often compared. The popularity of Amsterdam Shop was due to the low prices of the products on offer and the much preferred cash-on-delivery payment method: *"When compared to Rc-chem.eu, the AS (Amsterdam Shop) prices are superb, given that you don't pay fees, and the hassle in the bank, and you can get it sent COD! The question is, though, what the quality is."* Rather than price, it was the size of its assortment and the higher quality of the same products as those offered by Amsterdam Shop that the Rc-chem.eu marketplace, which specialised exclusively in research chemicals, seemed to attract its customers with: *"I was happy to find out that AS offers MPA at very reasonable prices with no extra fees. So I gave it a shot and used 0.5g of MPA. But it looks and tastes totally different from the stuff supplied by Rc-chem.eu and I was quite disappointed by the effect, too! It's a lot weaker, unfortunately." "With Rcchem.eu, you know what the substance is about – well, not 100%, but there's more to choose from."*

It was not rare for the discussants to encounter poor service and fraud from online vendors. Specifically, there were problems with the processing of orders for goods, long delivery times, and also failures to deliver pre-paid products. In 2014 the discussants began to scale up their use of the services provided by the *Safe or Scam* website, which is good for looking up reviews of online shops offering various product ranges which are posted by other buyers.

Some discussants offered to sell NPS that they had bought in greater quantities or acted as agents for a shop. Forum administrators tried to eliminate posts of this type. Some discussants wanted to buy NPS from others, for example, in situations in which they were hurriedly seeking a substitute for a shipment that had failed to arrive. The discussions also contained offers for collective shopping in web-based marketplaces motivated by savings on postal charges or good deals on buying in larger quantities. Some discussion forum members decided to take advantage of people's dissatisfaction with some of the shops because of their unreliability and considered becoming involved in the NPS distribution process: *"I just thought, given that AS shop is closing down, that I'd buy from my own source and sell it off. I'd send it COD or personal delivery around Prague, for you to be sure, no problem; moreover, I've been around on this forum for some time now."* Some of the discussants showed efforts to obtain instructions for manufacturing selected NPS and prepare substances on a makeshift basis.

4 DISCUSSION

The results of the study indicate that the content of the first thematic category (Discussion about NPS) was basically consistent with those of other studies, the objective of which was to analyse the content of forums for NPS users, especially the phenomena which reflect aspects of experience with the substances used (Deluca et al., 2012; Jebadurai et al., 2013; Schifano et al., 2009; Schifano et al., 2011; Schifano et al., 2005; Soussan & Kjellgren, 2014) and subject areas concerning counselling about the minimisation of risk and maximisation of effect (Barratt, 2012; Drápalová &

Table 5 / Tabulka 5

Results and proposal triangulation with other data sources

Výsledky a triangulace s dalšími zdroji

ANALYSIS OF DISCUSSION FORUMS		SOURCES FOR DATA TRIANGULATION		LIMITATIONS AND OTHER COMMENTS
RESULT OF ANALYSIS	**HYPOTHESIS**	**VERIFICATION SOURCES**	**RESULTS**	
i. Decline in activity on the forums under analysis (a drop in the total numbers of posts and discussants)	a. Decline in the level of NPS use in the Czech Republic in 2013-2014	General population surveys conducted by the National Focal Point (NFP)	2013: LTP 1.3%, LYP 0.3% 2014: LTP 0.3%, LYP 0%	The characteristics of the participants in online forums are unknown – they are unlikely to constitute a representative sample of the NPS user population. The number of posts does not necessarily reflect the level of use among the population of online forum members. The results of the general population surveys hover near the statistical error threshold.
		The Eurobarometer survey	2011: LYP 4% 2014: LYP 4%	
		Study on PDUs 2013 and 2014	2013: LYP 52% 2014: LYP 53%	
ii. General decline in the number of commercial products/collectors' items being discussed and a relative increase in the number of RCs discussed	b. Decline in the level of the use of "commercial products" c. Rise in the level of RC use d. Users of commercial products switched to RCs because of the latter's better availability and quality	General population surveys, the Eurobarometer survey	N/A No data on the use of specific substances is available.	The number of posts does not reflect the level of use among the population of participants in discussion forums. The number of posts, or "topicality", does not reflect the level of NPS use (e.g. controversies associated with the NPS).
		Study on PDUs 2013 and 2014	N/A Specific names of NPS to be included in the analysis.	
		I-TREND SASS monitoring	2014: 22% of shops selling CPs, 35% selling RCs 2015: 13% CPs, 43% RCs	The monitoring of discussion forums is primarily concerned with buyers' behaviour; the shop-specific monitoring looks into the supply and number of shops. The population of forum members does not reflect the behaviour of all the buyers. Problematic definition and perception of a shop as "Czech" (Czech domain, Czech IP address, Czech in the language interface, etc.).
		NFP/EMCDDA snapshot survey	N/A Product typology not specified.	
iii. Decline in the number of "Czech" shops and an increase in the utilisation of online shops abroad	e. Decline in the number of shops in the Czech language accessible via Czech search engines f. Increase in the utilisation of online shops abroad	I-TREND SASS monitoring	2014: 30 unique shops in Czech 2015: 32 unique shops in Czech	
		NMS/EMCDDA snapshot survey	2013: 26 shops in Czech 2014: 33 shops in Czech	
iv. Varying quality of commercial products and RCs	g. The composition of commercial products tends to vary over time h. Research chemicals do not always contain what they are declared to i. The content of RCs tends to vary over time	The www.party-trend.cz project database (user-supplied samples)	Out of 11 substances which were declared to contain a specific NPS, four contained more than one substance and three a substance other than that declared.	Neither data collection nor online purchases are randomised and are representative. Several online shops might not be "functioning" from the experience of users.
		I-TREND project sample analysis (RCs purchased from online shops)	Four out of 26 samples (25%) ordered online from "Czech" marketplaces did not contain the substance that was declared, two contained another additional substance, and one sample contained a mixture of three substances.	

SOURCES: National Monitoring Centre for Drugs and Addiction & ppm factum research (2014, 2015), Běláčková et al. (2015, 2016), Kmetonyová & Pažitný (2015), Martinez et al. (2016), Grohmannová et al. 2016, Eurobarometer (2011, 2014), Brunt et al. (2015)

Note: LTP = lifetime prevalence, LYP = last-year prevalence

ZDROJE: National Monitoring Centre for Drugs and Addiction & ppm factum research (2014, 2015), Běláčková et al. (2015, 2016), Kmetonyová & Pažitný (2015), Martinez et al. (2016), Grohmannová et al. 2016, Eurobarometer (2011, 2014), Brunt et al. (2015)

Poznámka: LTP = celoživotní prevalence, LYP = prevalence v předchozím roce

Běláčková, 2014; Soussan & Kjellgren, 2014). For some NPS users, the existence of Czech forums has an essential role in that it makes it possible to share NPS-specific experience which the discussants find more authentic than that of users from abroad. It is therefore fair to assume that Czech discussion forums for NPS users could also serve as a source of information about new and unexplored substances and their effects and potential for harm for both public health professionals and clinicians.

Discussions dealing with the purchase and sale of NPS provide an insight into the patterns of behaviour involved in shopping for NPS. Addressing the topic of the NPS market either in terms of the monitoring of online shops per se (Bruno et al., 2013; Hillebrand et al., 2010), or in more comprehensive terms, looking into the monitoring of the content of the internet as a whole (Corazza et al., 2014a; Schifano et al., 2009), previous studies only reported about the number and assortment of web-based marketplaces. Analysis of the content of forums may generate useful information about NPS users' buying strategies, about the practices of the shops, and, potentially, about the extent to which specific shops are utilised.

The quantitative part of this study suggests the possibility of using quantitative analysis in order to look for trends between different time periods. While the quantitative monitoring of the content of the internet in order to map the offer of online shops has been applied for several years – e.g. snapshot methods (Hillebrand et al., 2010) or the Psychonaut Web Mapping Project methods (Bruno et al., 2013; Deluca et al., 2012) – quantitative monitoring of internet forums is a new method, which was, to the best of our knowledge, applied for the first time as part of the I-TREND project (Martinez, 2013).

Using the results of the analysis of the discussion forums, we have identified four trends which should be subjected to triangulation with the results of the previous mon-

itoring and research studies in the field of NPS (*Table 5*). To what extent these trends are consistent with information obtained from other sources is discussed below.

One trend is the overall drop in the number of posts and the degree of activities on forums (i), which may imply a decline in the level of NPS use. While the prevalence of NPS use among the general population did decrease between 2013 and 2014 (National Monitoring Centre for Drugs and Addiction & ppm factum research, 2014, 2015), no such decline was recorded in specific subpopulations (Běláčková et al., 2016; Eurobarometer, 2011, 2014). The decline in the number of posts may thus suggest, for example, that the discussions have moved to other communication channels which are not freely accessible to the public. The question is, too, whether the concept of the "topicality" of a substance is really associated with NPS use; a high number of posts may not necessarily reflect the popularity of a substance as it can also indicate controversy surrounding the substance.

While the so-called "commercial products" almost disappeared from users' discussions from 2013 to 2014, there was a relative increase in the number of posts on RCs (ii). This may well be indicative of an overall decline in the use of "commercial products" in the Czech Republic, or their place having been taken by research chemicals. The qualitative analysis of the discussion forums suggests that it may be due to mistrust in the safety of "commercial products" or an increase in purchases from (RC) shops abroad. A similar trend is also indicated by the results of the monitoring of online shops carried out as part of the I-TREND project. They show that during the years 2014 and 2015 the ratio of shops selling "commercial products" to RC shops rose in favour of the latter (Kmetonyová & Pažitný, 2015). As neither the absolute number of posts on RCs nor the number of discussants grew, this may indicate an increase in the diversity of the substances used among the same group of users (the number of RCs under discussion rose from 45 in the previous year to 66) rather than the enlargement of the group of RC users (e.g. to include users of commercial products). Such developments correspond to the fact that in 2014, 22 new substances were identified in the Czech Republic by the EWS. Given that this is 24 substances less than in 2013 (NMS, 2015), one might assume a reduction in the variety of substances brought up in discussions. The truth is, nevertheless, that the chemical names of the substances under discussion partly overlapped in both years.

The conclusions ensuing from both the qualitative and quantitative analyses of discussion forums can be interpreted as indicative of the lower availability of Czech online marketplaces and the discussants' greater willingness to buy from shops abroad in 2014 in comparison with 2013 (iii). On the other hand, the data from the monitoring of online shops conducted by both the National Focal Point and the I-TREND project does not show any decline in the number of Czech online shops. Conversely, it suggests that their number is growing (Kmetonyová, Pažitný, 2015; Grohmannová et al., 2016). There may also be a discrepancy between the users' and the monitors' ideas of what a functioning "Czech" online shop actually is. It may also be that the users use only a fraction of the shops covered by the monitoring. Analysis of discussion forums which looks into buyers' behaviour may help in obtaining a more comprehensive picture of the supply of NPS via the internet.

Last but not least, the quality of "commercial products" received a negative response. Their composition was regarded as unknown and changeable (iv). The effects of some of the RCs that were described varied depending on the producers of the respective RCs, which may suggest that the RCs do not necessarily contain the NPS as declared, or they may be of dubious purity. This is also confirmed by the analyses of the content of NPS carried out under the I-TREND project, which led to the conclusion that the purity ranged from 100%-50%, depending on the type of RC. Approximately 55% of the RCs analysed in Poland did not contain the substances they were declared to; four out of 26 samples (25%) ordered online from "Czech" marketplaces did not contain the substance that was declared, two contained another additional substance, and one sample contained a mixture of three substances (Brunt et al., 2015).

The limitations of the qualitative and quantitative content analyses of discussion forums for NPS users include the specific nature of the population engaging in the online discussion of NPS (patterns of NPS use may not necessarily reflect the patterns of use among the population of recreational and problem users) and the low volume of discussions conducted in the Czech language in comparison with abroad. The volume of data encountered on forums abroad makes it possible to start subforums (threads) for individual NPS. In 2013 and 2014 5,169 of those were identified in Poland, France, the Netherlands, and the United Kingdom (Martinez & Cadet-Taďrou, 2015), while on Czech forums all the substances were discussed within two unstructured message boards. It is also possible, though, that there are covert discussion forums in the Czech Republic which could not be identified.

5 CONCLUSIONS

This work involved the analysis of the content of Czech internet forums for NPS users in the period from January 2013 to December 2014. The discussants shared a considerable amount of knowledge about NPS and buying them. The two years' monitoring of the discussions showed a decline in the number of discussants (-20%) and posts (-49%). During that period a dramatic decline in the proportion of posts dealing with the so-called "commercial products/collectors'

items" (from 20% to 0.3% of all the posts) and an increase in the proportion of posts on so-called research chemicals (from 36% to 45% of all the posts) were recorded. The qualitative content analysis of the posts indicates that this may be due to the reduced supply of commercial products on the market and the deterrent characteristics of these products, such as unknown composition and unpredictable effects. The most popular Czech web-based shops wound up their activities in 2013 and the forum members began to use the services of foreign online marketplaces.

The results of this analysis are congruent with other relevant evidence in that they suggest a decline in the occurrence of "commercial products/collectors' items" on the NPS market, which are partly giving way to substances sold under their chemical names. In addition, they all indicate the varying quality of the substances sold. A decrease in the level of NPS use in the Czech Republic, which might be implied by the lower number of posts concerning NPS, was confirmed only to a certain extent (among the general population). The results of this study are at odds with those of the monitoring of online shops selling NPS: unlike the discussants, the latter recorded an increase in the number of e-shops in the Czech language.

In order to provide a comprehensive picture of the issue of NPS use in the Czech Republic, analysis of internet discussion forums should be used in parallel with other both quantitative and qualitative methods for studying recreational users and problem users and the school and general populations or monitoring online marketplaces.

The role of the authors: Eva Drápalová and Vendula Běláčková adapted the study design to the Czech setting. Eva Drápalová collected the data and created the main analytical categories. Vendula Běláčková participated in the analysis of the data and in writting of the paper.
Conflict of interest: This study involved no conflicts of interest.

Role autorů: *Autorky Eva Drápalová a Vendula Běláčková přizpůsobily design studie českému prostředí. Eva Drápalová provedla sběr dat a vytvářela hlavní analytické kategorie. Vendula Běláčková se spolupodílela na analýze dat a na přípravě publikace.*
Konflikt zájmů: *V uvedené studii nedošlo ke střetu zájmů.*

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GENERAL INFORMATION ABOUT Ph.D. IN ADDICTOLOGY

1st Faculty of Medicine, Charles University in Prague, Czech Republic

Ph.D. IN ADDICTOLOGY

Duration: 4 years

Language: Czech or English. English speaking students are not required to master the Czech language. Czech speaking students will be strongly encouraged to use English language during their study course.

The program is offered on a *full-time* basis or in a *combined* form. The combined form of study provides an effective combination of full-time and distance learning, besides self-study also brings students into a direct contact with teachers.

The academic year is divided into two semesters, each followed by exam period. The winter semester starts at the end of September and lasts 15 weeks. It is interrupted by 2-week Christmas vacation and followed by a 4-week examination period. The summer semester lasts 15 weeks and is followed by an examination period and summer vacation.

1 Basic Information

The web pages of the 1st Faculty of Medicine include general information on the application procedures for academic study programs. The following links present information about entrance exams, terms, conditions for Czech (and Slovak) applicants and for applicants from abroad (e.g., VISA conditions).

If you are a Czech or Slovak applicant, please, go to:

http://www.lf1.cuni.cz/doktorske-studijni-programy-phd?f=pro-doktorandy

If you are an international applicant, please, go to:

http://www.lf1.cuni.cz/en/doctoral-studies1?f=phd

2 Characteristics of Ph.D. Study Program in Addictology

The main goal of the Ph.D. study program in Addictology is to prepare students to become independent investigators in academic as well as in non-academic research environments. During the study course the contribution to theory, public health science and translational science is emphasized.

The Ph.D. program in addictology presents a trans-disciplinary scientific perspective on addictology and prepares students to independently design and conduct studies *and interventions* of various aspects of the risk environment of substance use and addictive behaviours—from the individual to the policy level. Aimed at furthering evidence-based decision-making *in drug policy and practice*, the core of the program is in clinical work and public health research with a participatory community focus. Central to the program are methodological guidance and support towards the development of trans-disciplinary theory and empirical studies in addictology, combining quantitative and qualitative research methods from various disciplines into a common epistemological framework.

3 Graduate's Profile

Graduates of the doctoral program in addictology receive a comprehensive education aimed at (i) transdisciplinary research excellence in addictology, (ii) advanced knowledge and skills in the clinical practice in addictology, and (iii) a comprehensive theoretical and empirical understanding of the public health perspective in addictology. Through the trans-disciplinary study of addictive behaviors within their risk environment, students of the doctoral program will have gained an in-depth understanding of the ramifications of addictology for theory, policy and interventions.

Aimed at furthering evidence-based decision-making *in drug policy and practice*, the core of the program is in clinical and public health translational research with a participatory community focus. Central to the program is improvement of knowledge, skills and competencies in methodological guidance and support towards the development of trans-disciplinary theory and empirical studies in addictology, combining quantitative and qualitative research methods from various disciplines into a common epistemological framework.

Within their scientific work, graduates of addictology Ph.D. program are well prepared for:

- conducting a systematic literature review and process its results towards educational and research purposes
- conducting independent research; designing basic or applied studies in the field of addictology
- publish study results in domestic and international (English language) scientific journals and other types of scientific writing
- teaching students on pre-gradual levels
- presenting the results of their scientific work at conferences, in workshops and scientific meetings
- assessing new paradigm contributions to substance use and addictive behavior
- addressing complicated ethical dilemmas
- planning and implementation educational activities and strategies in addictology
- acquisition of funding and grant writing

4 Requirements

Interested Ph.D. applicants must have a masters degree (or equivalent, e.g., M.D.) in additology or a related field prior to their application. Also those who are awaiting their masters degree (or equivalent) within two months may apply.

It is strongly suggested that the interested Ph.D. applicants contact their potential Ph.D. supervisor and his/her research groups working within applicant's field of interest in the process of their application.

Available Ph.D. positions may also be announced at the department's website.

5 Entrance Exams

The applicant has to follow the Entrance Exams Procedure as stated by the 1st Medical Faculty, Charles University in Prague (see links

http://www.lf1.cuni.cz/doktorske-studijni-programy-phd?f=pro-doktorandy (Czech)

OR

http://www.lf1.cuni.cz/en/doctoral-studies1?f=phd (English).

6 Final State Exam

Is taken at the end of the Ph.D. study program. Successful students receive their Ph.D. Student has to defend a written doctoral thesis. Theory may be examined during doctoral thesis defense.

7 Further Information

For further information, please, refer to:

INDIVIDUAL STUDY PLAN AND STUDENT'S DUTIES AND REQUIREMENTS

http://www.adiktologie.cz/cz/articles/detail/609/4159/Individualni-studijni-plan-studijni-povinnosti-a-pozadavky

PŘEHLEDOVÝ ČLÁNEK

Vyhodnocování potenciálních rizik nových trendů v užívání psychoaktivních látek – rešerše literatury zaměřená na metody posuzování rizik (tzv. „risk assessment“)

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VÝCHODISKA: *V důsledku nárůstu využívání internetu v kombinaci s technickým pokrokem je možné v posledním desetiletí sledovat nové trendy ve výrobě a prodeji nových psychoaktivních substancí (NPS). Drogová politika založená na přístupu evidence-based požaduje důkladné posouzení případných rizik, tzv. risk assessment (RA). Na základě jeho výsledků jsou vytvářena doporučení ohledně zákazu nebo dalších intervencí ve vztahu ke konkrétním NPS.* ***CÍLE:*** *Pro účel tohoto článku byla provedena systematická konceptuální rešerše literatury, jež si kladla za cíl: (i) popsat současné modely RA, které jsou používány v praxi, (ii) popsat jejich nedostatky při vyhodnocování nových trendů v užívání psychoaktivních látek a (iii) navrhnout, jak se tyto metody mohou přizpůsobit zjištěným výzvám.* ***METODY:*** *V lednu 2014 bylo prohledáno 17 databází vědeckých článků a tzv. šedé literatury s využitím specifických vyhledávacích výrazů. 56 relevantních dokumentů bylo podrobeno kvalitativní obsahové analýze.* ***VÝSLEDKY:*** *Náplní procesu RA je sběr dat, jejich vyhodnocení a nalezení konsenzu při jejich interpretaci. Stávající proces RA je časově náročný a klade vysoké požadavky na kvalitu a spolehlivost dat. Rychlost, se kterou se na trhu objevují stále další NPS, spolu s nedostatkem informací o těchto látkách, vyvíjí tlak na stávající RA metody. To vede ke zkracování procesu RA. V důsledku toho jsou nyní v RA častěji využívána data s nižší spolehlivostí, ale vyšší relevancí (např. reporty uživatelů, analýzy internetových diskuzních fór, data ze služeb testování drog a dále nástroje používané v rámci metodologie Rapid assessment and response – RAR). K tomu, aby proces RA mohl nadále plnit svůj účel, bude třeba vyvinout kontinuální systém evaluace a následné re-evaluace rizik NPS. RA by bylo vhodné provádět také na lokální úrovni.* ***ZÁVĚR:*** *Výsledná doporučení RA by měla nad rámec kontrolních opatření doporučit vhodné intervence, a to například preventivní a léčebná opatření, nebo opatření snižující rizika. Nástroje kontroly by měly obsahovat širší paletu možností, než je pouhé zařazování rizikových NPS na seznamy zakázaných látek.*

KLÍČOVÁ SLOVA: POSUZOVÁNÍ RIZIK (RISK ASSESSMENT) – METODA RAPID ASSESSMENT AND RESPONSE – NOVÉ TRENDY V UŽÍVÁNÍ PSYCHOAKTIVNÍCH LÁTEK – KONCEPTUÁLNÍ REŠERŠE LITERATURY – NOVÉ PSYCHOAKTIVNÍ LÁTKY (NPS)

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REVIEW ARTICLE

Evaluating potential hazards of new trends in psychoactive substance use – literature review of "risk assessment" procedures

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BACKGROUND: In the last decade new trends in the manufacture and retail of new psychoactive substances (NPS) can be observed as a result of the rapid expansion of the Internet and technological developments. Evidence-based drug policy demands an elaborate assessment of the risks that could be caused by the new trends before control measures and other interventions are applied. AIMS: A systematic conceptual literature review was conducted, with the aims being to: (i) describe currently applied models of risk assessment in practice, (ii) specify the shortcomings of current models that are facing the challenges of new trends in psychoactive substance use, and (iii) propose adaptations of current models to meet these challenges. METHODS: 17 databases of peer-reviewed sources and grey literature were searched with specific search terms in January 2014. 56 relevant documents were further analysed with the use of qualitative content analysis by means of the NVIVO software. FINDINGS: Risk assessment (RA) procedures consist of three main parts – data collection, data evaluation, and data interpretation based on the consensus of experts. RA procedures take a long time and demand high-level scientific data in order to be reliable. The large numbers of newly emerging NPS and the lack of information have led to changes in the RA procedures. First, their duration is shortened. Second, data that has lower scientific reliability but high relevance is being assessed as well, i.e. consumer reports, online discussion forums, drug checking service data, or RAR (risk assessment and response) methods. Further RA procedures could evolve into a continuous process of evaluation and re-evaluation of NPS risks. Local-level risk assessment should be more involved. CONCLUSIONS: The outcomes of RA should include a greater variety of interventions than a suggestion for control (e.g. prevention, treatment, harm reduction measures, or other control instruments than the simple scheduling of the risky NPS).

KEY WORDS: RISK ASSESSMENT – RAPID ASSESSMENT AND RESPONSE – NEW TRENDS IN PSYCHOACTIVE SUBSTANCE USE – CONCEPTUAL LITERATURE REVIEW – NEW PSYCHOACTIVE SUBSTANCES

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1 INTRODUCTION

In the past decade, patterns in global drug trafficking have changed considerably with the emergence of the phenomenon of New Psychoactive Substances (NPS). Decision 2005/387/JHA of the Council of the European Union defines NPS 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" (Council of the European Union, 2005; Martinotti et al., 2015; UNODC, 2013). The EU Council Decision furthermore stipulates the exchange of information about NPS and the risk assessment and control of these substances.

While the above definition of NPS focuses on their legal status, the definition of a substance as an NPS is rather based on its individual history and the context of its marketing. These substances are popularly referred to as "legal highs" or "designer drugs" (Corazza et al., 2013b). They can be sold as "research chemicals" (RC) or under different fanciful names or brands (e.g. K2, Funky, Cocolino, etc.) (Corazza et al., 2014b). In order to circumvent the legislation and regulations, retailers sell NPS as "bath salts", "incense", or "goods not intended for human consumption (collector goods)" (Measham, 2011). NPS mimic the effects of "classic" illegal drugs such as cocaine, cannabis, heroin, or even ketamine. NPS are commonly marketed online, but different countries have seen them in retail shops or on a street-level market (also as adulterants to illegal drugs). They come in the form of powder, pills, capsules, herbal mixtures, resin, and others. What characterises them as a group, despite their diverse chemical structure, is a relative lack of research on these substances compared to drugs that are already controlled (Schifano et al., 2011). This complicates the decision about how and whether to regulate particular compounds; prohibition by means of the criminal law is technically difficult given the diversity and speed of development of NPS, and neither is it desirable, given that many of them can be used for industrial purposes or in pharmaceutical development (Measham, 2011; Winstock & Ramsey, 2010). The risk assessment (RA) of NPS evaluates the potential health and social harms that may be caused to societies, and it has become a priority of drug policy bodies at multiple levels (Dargan & Wood, 2013). The main characteristic of the NPS phenomenon and increasingly of drug markets in general is their unpredictable character. With 101 NPS newly registered in the EU in 2014 (EMCDDA, 2015), the creativity of 'designer drug cooks' seems boundless. NPS and the accelerated epidemiological cycle of new drug trends create a need to speed up the 'drug policymaking cycle'. In order to develop effective policies and, when indicated, interventions, policymakers and drug services require objective, factual information before new drug trends turn problematic. Regular monitoring of (online) drug markets and drug-using communities and expedited risk assessment procedures can serve to inform the development of more effective policy responses to the increasingly changing landscape of drug consumption. In this paper we report the results of a systematic literature review that aimed to describe the current status quo of risk assessment procedures in Europe and internationally. The specific aims of this review were to:

(i) describe currently applied models of risk assessment in practice (which organisations are responsible for RA, what the tools used in RA are, and what its implications for drug policy are), and (ii) outline the shortcomings of current models that are facing the challenges of new trends in psychoactive substance use and specify adaptations of current models to these challenges (how the RA system deals with the rapid emergence of NPS and the information, or lack thereof, about them).

2 METHODS

A systematic conceptual review of the RA of new trends in psychoactive substance use was conducted. A conceptual approach allows published material to be sorted through in a focused manner and is guided by a basic understanding of the research issues rather than by specific or expert knowledge of research methodology (Findley, 1989). On the topic of how to conduct a systematic literature review, see the Cochrane manual (Higgins & Green, 2006).

English-language peer-reviewed articles, publications, and grey literature (informally published written material, e.g. organisations' reports) were used as the sources of data. Selected scientific databases and electronic databases of grey literature (*Table 1*) were searched for specific descriptors pertaining to the research questions. Risk assessment-specific terms ("risk assessment", "assessment tool", "rapid assessment", "quick scan", and "assessing risks") and general terms ("substance abuse", "drug use", "patterns of drug use", "patterns of substance abuse", and "new trend") were reciprocally combined using Boolean connectors (i.e. „OR", „AND", and „NOT") and used as keyword strings for searching each database.

The search resulted in 91 potentially relevant articles or publications. Out of this sample, 50 publications were available in full text versions and were relevant to the topic under research. Six more publications that were referenced in the primarily searched literature were added to the sample. In total, 56 publications were subjected to content analysis using the NVivo 10 software. Out of the 56, 48 publications were peer-reviewed (four monographs, 44 journal articles) and nine were grey literature (six reports, two sets of guidelines, and one dissertation). 38 sources were theoretical articles, nine described RAR methods, four concerned the British RA approach, three the Dutch approach, and

Table 1 / Tabulka 1
List of databases searched for the purpose of this review
Seznam databází použitých pro vyhledávaní zdrojů

	Database	URL
Peer-reviewed literature databases	Google Scholar	scholar.google.com
	ProQuest	www.proquest.com
	EBSCO	www.ebsco.com
	SAGE	online.sagepub.com
	Scopus	www.scopus.com
	Web of Knowledge	apps.webofknowledge.com
	Ingenta Online and Ariel	www.ingentaconnect.com/
	JSTOR	www.jstor.com
	PsycINFO	www.apa.org/pubs/databases/psycinfo/index.aspx
	Pub Med/Index Medicus	www.ncbi.nlm.nih.gov/pubmed/
	ERIC	www.eric.ed.gov/ERICWebPortal/journalList/journalList.jsp
	Cochrane Library	www.thecochranelibrary.com/view/0/index.html
Grey literature databases	OpenSIGLE	www.opengrey.eu/
	National Criminal Justice Reference Service	www.ncjrs.gov/App/QA/SearchQA.aspx
	European Legal Database on Drugs	eldd.emcdda.europa.eu/
	Interventie-database	www.loketgezondleven.nl/interventies/i-database/
	NARCIS	www.narcis.info/

two the approach of the WHO. Basic coding of text areas relevant to each specific research question was performed. Other relevant topics were coded using open coding. The coding structure helped to categorise the findings and divide them into thematic segments according to the research questions.

3 FINDINGS

Our literature review identified several RA procedures that are conducted on the international, national, and local levels. A description of them and the challenges and subsequent responses are presented below, organised as responses to the research questions outlined in the Introduction.

3 / 1 Organisations responsible for conducting risk assessments

RA procedures are conducted on the international, European, and national levels. On the local level, related Rapid Assessment and Response (RAR) methods are employed.

On the international level, RA procedures are coordinated by the *World Health Organisation (WHO)* and performed by the *WHO's Expert Committee on Drug Dependence (ECDD)*, composed of various international experts. The ECDD recommends certain substances for scheduling or other regulatory action. Subsequent to an ECDD recommendation, the *Commission on Narcotic Drugs* adopts the recommendation. The RA process is conducted in accordance with *Guidance on the WHO review of psychoactive substances for international control* (WHO, 2010).

On the level of the European Union, RAs are coordinated by the EMCDDA. The decision of the Council of the European Union from 2005 (no. 2005/387/JHA) on the exchange of information on NPS and their risk assessment and control empowers the Scientific Committee of the EMCDDA with a central role in the assessment of risks associated with NPS. The Scientific Committee cooperates closely with Europol (the European police agency) and the European Medicines Agency (EMEA). The RA process team consists of experts in the fields of criminology, pharmacology, psychology, medicine, and the mental health field from key institutions and universities all over Europe (EMCDDA, 2009b).

While more or less structured expert RA procedures are specified by legislation in several EU member states, namely Denmark, Germany, Estonia, France, the Netherlands, and the United Kingdom (Hughes & Blidaru, 2009), the scheduling of NPS in the law is mostly decided on a political level in these countries. Only two of these six EU member states (the Netherlands and the United Kingdom) conduct elaborate national-level assessments of NPS that have an impact on the further control of the compounds that are assessed.

Much like in the international examples, in the Netherlands the Minister of Health and in the UK the Home Secretary request an RA from an independent body of various

experts; in the Netherlands it is the *Coordination Centre for the Assessment and Monitoring of New Drugs (CAM)* and in the UK the *Advisory Council on the Misuse of Drugs (ACMD)*. The results of the RA are summarised in a report that directly recommends an appropriate intervention (Bossong et al., 2005; Reuter, 2011).

The implementation of a Rapid Assessment and Response method (RAR) can be observed in some localities and regions. An RAR aims to assess a problem or situation in a short period of time, using all possible sources of data, and to design suitable interventions (in contrast to the national or international level, an intervention on a local level is a programme or service, rather than a regulatory option). An example RAR on the local level would be the Bergen Early Warning System (BEWS) in Norway, which successfully implemented a series of RARs performed by an outreach service (Mounteney, 2009). RAR studies can be conducted on the national or regional level as well (Ogborne, 2006).

3 / 2 Tools of risk assessment

Risk assessment uses three main tools in order to fulfil its function. First, a set of risk factors is established and then the data that has been collected is evaluated while using quantifying scales and considering the validity and relevance of the data. Third, an outcome that represents the opinion of each assessor needs to be reached.

3 / 2 / 1 Risk factors

In the literature, an important distinction is made between the often interchanged terms "harm" and "risk". Harm is defined as the amount and type of harm and risk as the likelihood that harm will occur (Steadman et al., 1994, p. 297). The British Medical Association defines risk as the probability that something unpleasant will happen (Jones, 1988). Harm does not occur alone and is enabled by the presence of a risk environment (Rhodes, 2002, 2009). This concept enables harm and risk to be perceived as a consequence of various biological, psychological, and social factors (Miovský et al., 2015). Equally, Steadman et al. (1994) emphasised the importance of a multidimensional perception of risk and introduced the concept of risk factors that are used by institutions during the RA process.

The risk factors differ from institution to institution (*Table 2*) but in general they concern biomedical, pharmaceutical, economic, and legal risks concerning individuals, social groups, and society, but not all these categories can be represented equally. For instance, the WHO's Expert Committee on Drug Dependence (ECDD) relies primarily on biomedical data and legal considerations. Social indicators are limited and lumped into the "other" category. On the other hand, the Dutch and UK procedures allow for quite an extensive input of social indicators and expertise.

Institutions performing RA are often criticised for not considering the possible benefits (e.g. replacement of a more harmful illegal substance or treatment purposes) (Reuter, 2011). For example, the risk assessment of the emerging head shops in Ireland mostly considered the benefits of their restriction, without taking into account any potential negatives except for the high costs. RA procedures in other research areas (e.g. environmental research) have a more elaborate system of weighing costs and benefits (Reuter, 2011). In any case, RA should aim to evaluate the effect of banning what is being examined and the negative effects that may be associated with such legislative action (Spruit, 2001).

Additionally, the potential harm caused by a change in the legal status of an NPS is not always sufficiently considered and it is hard to predict (Caulkins et al., 2011; Reuter, 2011). The tools for the prediction of the consequences of a ban are simply missing. For instance, the EMCDDA considers the involvement of organised crime resulting from the banning of a substance as an important issue, but their risk assessment guidelines (EMCDDA, 2009b) do not provide any guidance on how to assess the potential for criminal involvement once a substance is banned. Therefore a review of the current risk categories and the introduction of more comprehensive "harm matrices" that would put individual risks into a broader social context could be a solution to the current inefficiencies of RA (Caulkins et al., 2011).

3 / 2 / 2 Evaluation of data from multiple sources

The data concerning each specific risk factor that have been collected need to be evaluated further. Data quality and its relevance need to be considered. Then all the information on each risk factor is quantified.

Bodies performing RA have to assess data of very different origins: pharmacological data, toxicological analyses, and population studies combined with case studies, emergency reports, etc. The validity and relevance of the data need to be assessed, compared, and evaluated.

Considering the validity of the collected data, the EMCDDA divides the available sources of data for an RA into five categories, ordered from the most valid to the least valid: peer-reviewed scientific publications, official reports of international organisations and governmental institutions, other reports and/or scientific publications, unpublished data from forensic and clinical laboratories, and other sources (EU databases, media, individual reports, unofficial publications, and the Internet) (EMCDDA, 2009b).

Unpublished data, despite its lower ranking in the evidence hierarchy, can, however, still be very relevant (EMCDDA, 2009b). Additionally, very recent data is not likely to be published quickly, but the actual data can have very high importance for the assessment of a new psychoactive drug. The quality of these various sources

Table 2 / Tabulka 2
List of risk factors and criteria considered in the RA process according to various institutions
Seznam rizikových faktoru a kritérií, které jsou posuzovány při procesu RA různými institucemi

WHO Criteria	EMCDDA Criteria	CAM Criteria (The Netherlands)	ACMD Criteria (UK)
1. Chemistry	**1. Dependence and abuse potential**	**1. Individual health**	1. Drug-specific mortality
2. Ease of convertibility into controlled substances	– animal in vitro data, human data	– Physical dependence	2. Drug-related mortality
3. General pharmacology, pharmacokinetics, pharmacodynamics	**2. Prevalence of use**	– Psychological dependence	3. Drug-specific damage
4. Toxicology	**3. Health risks**	– Acute toxicity	4. Drug-related damage
5. Adverse reactions in humans	– acute, chronic, public health risks	– Chronic toxicity	5. Dependence
6. Dependence potential	**4. Social risks**	**2. Public health**	6. Specific impairment function
7. Abuse potential	– individual social risks	– Extent and frequency of use	7. Relative impairment function
8. Therapeutic applications, (therapeutic use, epidemiology of medical use)	– risks for direct social environment	– Vulnerability of the user	8. Loss of tangibles
9. Listing on the WHO model list of essential medicines	– society as a whole	– Availability of information on possible e?ects of the drug	9. Loss of relationships
10. Marketing authorisations (as a medicine)	– economic costs	– Availability of the drug	10. Injury
11. Industrial use	– effects related to cultural context	– Reliability of the drug's pharmaceutical quality	11. Crime
12. Non-medical use, abuse, and dependence	– appeal to specific subpopulations	– Reliability of the drug's distribution and sale	12. Environmental damage
13. Public health problems related to abuse and dependence	**5. Involvement of organised crime**	– Reported nature and extent of incidents	13. Family adversities
14. Licit production, consumption, and international trade	– systematic involvement of groups for financial gain	**3. Violation of civil order**	14. International damage
15. Illicit manufacture and trafficking and related information	– impact on production of other substances	– Annoyance to the general population	15. Economic cost
16. Current international controls and their impact	– involvement of the same group in different kinds of crime, violence	– Increased resort to use violence	16. Community
17. Current and past national controls	– impact on society	– Impaired reaction time (tra?c, labour)	
18. Other medical and scientific matters relevant for a recommendation on the scheduling of the substance	– evidence of money laundering or impact of organised crime on other socio-economic factors in society	**4. Criminal involvement**	
	– economic costs of consequences	– Criminality with respect to the final product	
	– violence between crime groups	– Criminality with respect to raw products	
	– corruption		

Sources: (Bossong et al., 2005; Caulkins et al., 2011; EMCDDA, 2009; Reuter, 2011; WHO, 2010)
Zdroje: (Bossong et al., 2005; Caulkins et al., 2011; EMCDDA, 2009; Reuter, 2011; WHO, 2010)

needs to be weighed, as do the various types of harms (to individual health, public health, or to society) that the data predict.

An RA procedure assesses the harmfulness of the substances being examined objectively and quantitatively (Caulkins et al., 2011). While the ECDD (WHO) do not closely describe the data evaluation process in their guidelines (WHO, 2010), the ADMC (UK) (Nutt et al., 2007) and CAM (The Netherlands) (van Amsterdam & van den Brink, 2010) have developed tools for risk factor quantification, some of which were adopted by the EMCDDA. The EMCDDA uses a semi-quantitative assessment procedure for its RA process. Experts judge each subgroup and assign it a score, which is referred to as a risk level. The scores are represented by numbers on a scale from 0 (no risk) to 4 (severe risk).

3 / 2 / 3 Deciding the final outcome of RA

Once the members of the body performing an RA quantify the risk factors, a final decision must be made. The RA outcome needs to represent the opinion of each of the members of the scientific committee. For instance, the head of the EMCDDA Scientific Committee collects the risk level values and average risk values from each member of the committee and the overall summary is then sent back to the members before the final meeting of the group. The group meets to discuss the findings and review the risk scores (EMCDDA, 2009b).

The discussion is led in consensus with the Delphi approach. That is a technique designed for obtaining a consensus in opinion within a group of experts which includes tools ranging from structured questionnaires to controlled opinion feedback (Dalkey & Helmer, 1963). Members of the EMCDDA Scientific Committee are allowed to re-evaluate their scores after discussion guided by the Delphi approach is finished. The new scores are gathered and the Scientific Committee creates an RA report and draws conclusions based on the second version of the scores.

According to van Amsterdam et al. (2004), the Dutch CAM does not base its final judgment on written scores only, but preferably on the outcomes of discussions between the experts. Expert discussion after primary judgments has been confirmed as a suitable tool for finding overall consensus on an issue that has been presented (van Amsterdam et al., 2004).

● 3 / 3 Implications of RA outcomes for drug policy

The outcomes of the risk assessments serve as background for interventions concerning the substance or trend being assessed, mostly as a legal response or preventive, treatment, and harm reduction intervention. The response of the authorities is, however, aimed at the scheduling of emerging substances in most cases. Council Decision 2005/387/JHA provides a framework for assessing the risks associated with NPS so that control measures for narcotic and psychotropic substances can be applied accordingly.

3 / 3 / 1 Is the outcome of RA binding for policymakers?

RA represents an evidence-based approach towards drug policymaking but from practice we can see that policymakers often do not take scientific knowledge into consideration in classifying and scheduling psychoactive substances (Caulkins et al., 2011; Nutt et al., 2007). The outcomes of more elaborate RA methods often clash with the approach of the authorities. For instance, the United States Drug Enforcement Agency (DEA) accepted that marijuana has a lower level of toxicity compared to other illegal substances, but did not approve the re-classification of marijuana to a lower-risk group because of other pharmacological and behavioural risks (Gable, 2004). Likewise, banning mephedrone in North Dakota was based on individual reports from emergency rooms.

"We had a couple of teenage girls in the hospital here after injecting "bath salts" intravenously, presumed to contain mephedrone. The news reports and general research were enough for the Board and the Attorney General. When the lab report came back it was actually 3,4-methylenedioxypyrovalerone (MDPV) so we scheduled that one as well." (Reuter, 2011)

Especially when facing the rapid growth of newly-emerged substances, drug policymakers often speed up the legislative process, which leads to even less informed decisions about the scheduling of the substance (Hughes & Blidaru, 2009). The Precautionary Principle, which has become an important part of the approach towards risk and harm in environmental policy and public health since the 1990s, could explain the regulation of NPS with minimal information about their risks. The principle states that a lack of scientific evidence should not be an obstacle to postponing possible regulatory measures when there is a possibility that the phenomenon being examined might pose a danger to public health (Reuter, 2011).

● 3 / 4 Challenges in risk assessment of new trends in psychoactive substance use and RA responses

The rationale and mechanisms of risk assessment on the national and international levels have been described above; the major limitations and challenges of these processes are presented below.

3 / 4 / 1 Rapid emergence of NPS vs. time-demanding risk assessment procedures

Since 2012, eight NPS have been assessed by the EMCDDA (EMCDDA, 2014, 2015). If one looks at the high numbers of newly-emerged NPS in Europe, which are reaching new records every consequent year, i.e. 81 NPS notified by the European Early Warning System in 2013 (EMCDDA, 2014) and 101 NPS notified in 2014 (EMCDDA, 2015), it cannot be assumed that all newly- emerged substances can be assessed before being scheduled. The reason for this is that the RA procedure is time- consuming and places heavy demands on resources. The challenges for risk assessment are such that it has to be completed in a timely manner and upon the basis of a limited amount of scientific information, and it has to compromise on formal data quality in favour of data relevance.

Conducting and publishing epidemiological or toxicological research may take years (Stimson et al., 1999). Conclusive biomedical evidence is mostly lacking when the

need for an assessment arises, as toxicological and pharmacological studies take substantial amounts of time (EMCDDA, 2009b, 2015).

The time between an RA being requested and an advisory report being delivered can vary across the institutions that perform them. The ECDD (WHO) assesses a limited number of substances every two years, while the ACMD in the UK is able to deliver an advisory letter in 3-6 months (Reuter, 2011). France, Austria, and Norway are able to shorten the RA procedure in cases of emergency. In the Netherlands the duration of RA is directly self-driven by the amount of perceived harm to deliver outcomes as fast as needed (Hughes & Blidaru, 2009). The number of RAs performed per year by the EMCDDA is rising (two RAs in 2013, six RAs in 2014 (EMCDDA, 2014, 2015)), but compared to the numbers of newly identified NPS it is still insufficient. Therefore faster substance scheduling processes have recently been introduced in some European countries (Hughes & Blidaru, 2009).

The use of various available data for assessment of risks is used in the RAR methodology. According to Stimson et al. (1999), RAR generates data gathered by multiple methods and from multiple sources in a cost-effective manner. Research questions are addressed at different levels of society (individual, community, cultural, and economic perspectives), and the overall risk environment is taken into account (Rhodes, 2002). In RAR various sources of data, such as policy documents, statistical data, research, and media reports, are collected in a short period of time, evaluated, and directly transformed into recommendations for appropriate interventions (Ogborne, 2006). A best practice example of the use of RAR in local settings is presented by the Early Warning System in Bergen (Norway). Using the routine collection of both quantitative and qualitative data, monitoring of media content, and information from key informants, the local outreach organisation running the RAR has been successful in identifying several new trends in the area, including an increase in heroin use among young people. The RAR was concluded in six months (from the start of the data collection until the end of the assessment) (Mounteney, 2009). Recently the RAR method has proved useful in providing a comprehensive overview of the use of NPS by PDUs in the Czech Republic, Greece, Poland, Portugal, and Romania (Grund et al., 2015).

3 / 4 / 2 Lack of information vs. new sources of data

The lack of information about NPS is determined not only by their novelty and rapid cycle but also by the incentive to market them under false pretences, with the information on content and effect lacking (Winstock & Ramsey, 2010). The lack of information affects both users and researchers.

Both the EMCDDA and the ACMD acknowledge the fact that reliable and valid scientific information will be very limited for RA purposes (Corkery et al., 2011; EMCDDA, 2009b). As Winstock and Ramsey (2010) note, clinical and toxicological data is generally limited or completely lacking; this makes the RA procedures rather vague compared to the standard in pharmaceutical safety studies. Therefore, alternative sources of relevant information are seen as valuable (Corkery et al., 2011). While the scientific validity of this data may not be optimal, its relevance, as outlined in Chapter 2.2.2.1, is high and it offers important information on adverse effects and other harms that may be associated with new substances.

In the light of toxicological/pharmacological data being lacking, data from Internet forums, grey literature, and unpublished surveys is becoming crucial for RA procedures. As we can see through the example of the EMCDDA RA procedure for mephedrone (4-methylmethcathinone), apart from data collected from surveys and toxicological analysis, less valid data coming from Internet forum reports and grey literature was also taken into consideration (EMCDDA, 2011). The RA of benzylpiperazine (BZP) included data from online consumer reports and clinical observation of intoxicated patients (EMCDDA, 2009a).

Analysis of online user reports and discussion forums where people actively discuss their experiences – both positive and negative – and efforts to counter these (harm reduction) provides valuable data on the effects of NPS and the harms they cause, along with focus groups with consumers and case reports (Bersani et al., 2014; Corazza et al., 2014a; Corazza et al., 2013a; Schifano et al., 2011; Schifano et al., 2009; Schifano et al., 2005; Soussan & Kjellgren, 2014; Winstock et al., 2011; Winstock et al., 2010). These forums represent an important source of information and such 'consumer reports' are increasingly taken into account by official authorities such as the EMCDDA. The Psychonaut, REDNET, iTrend, and other EU NPS activities have made valuable contributions to RAs, informing authorities such as the British ACMD (Corkery et al., 2011; Schifano et al., 2003).

Other important sources of information are Emergency Drug Medical Care and harm reduction projects or drug checking services at festivals and at nightlife venues or at prevention organisations. In the Netherlands, Portugal, and several other EU countries these projects contribute important data to the monitoring and RA of NPS and feed into national and the EU Early Warning Systems. The Dutch drug-checking service DIMS monitors the quality and purity of recreational drugs, focusing on identifying newly emerging threats and new trends on the scene (Spruit, 2001). The DIMS results are regularly referred to in national and international RAs (Brunt & Niesink, 2011).

4 DISCUSSION AND CONCLUSIONS

RA is a structural and coordinated, evidence-based, and transparent activity to collect relevant information on the potential risks (and, less conventionally, benefits) of NPS, aimed at informing both a transparent decision-making process of policymakers and regulatory bodies and stakeholders in prevention and harm reduction approaches. RA procedures are generally conducted at the international (European), and on a limited basis, on the national level. On the local level, methods of risk assessment are conducted that generally show the features of RAR. RA procedures aim to collect the most reliable information about the risks posed by NPS, which does indeed take a considerable amount of time. The challenges posed by NPS create a demand for interim, less time-consuming, RA that considers the best evidence available at the time of assessment (EMCDDA, 2009b). More timely or *real-time* data sources are required. Alternative sources such as online drug forums, data from drug testing services, consumer reports, etc. are increasingly used in risk assessments. The data available at the time of first assessment may not be reliable enough to support definite decisions about the potential risks and benefits of the substance being assessed (Reuter, 2011). Data from higher ranks of the hierarchy will still be demanded. Therefore the design of shorter assessments followed by longer thorough assessments, as described in the Netherlands, could be more suitable. According to Winstock and Ramsey (2010), there will also be a need for constant reviewing of substances that have already been assessed, because the environment in which the substances cause harm will be changing all the time (the legal status of the substance may cause other kinds of risks, more dangerous alternatives will appear on the market, and the overall risk posed by the substance will change).

RA is intended to feed into a transparent decision-making process. Policymakers and regulatory bodies mostly apply it in designing legal responses resulting in the substance that is assessed being banned. This commonly happens despite the fact that the bare scheduling of NPS is not going to solve the problem, because banned substances are going to be replaced immediately by other analogues about whose effects and toxicity even less information is available (Winstock & Ramsey, 2010). Banning popular substances may also create a black market, with the involvement of organised crime. Winstock and Ramsey call for a more diverse approach towards substances that are not assessed as dangerous and they suggest other interventions that would allow the retailing of NPS and would oblige the retailers to provide evidence of the safety of their product, as is the case with medical products. This approach was applied in New Zealand with benzylpiperazines (Sheridan et al., 2007) and recently it has also been introduced for other NPS. The effectiveness of these new approaches should be examined further and compared to the prohibition approaches applied in Europe.

At the same time, the use of RA in order to support the decision to ban a substance or not is a very narrow view of the purpose of RA itself (Cameron, 2006). As we can learn from the RAR method, a variety of recommendations for appropriate interventions ranging from prevention, treatment, and harm reduction to policy measures should be designed by policymakers. RAR methods seem to be well suited to the early identification of new drug trends at the local level, but could also be adapted to the national level. As emphasised by the LOCAL PASS project (http://www.localpass.eu/), localities often have to deal with the immediate consequences of a new trend and demand tailored interventions that could prevent the further spread of the trend. In this sense, an advantage of the up-to-date use of RAR outcomes compared to RA outcomes is that it creates commitment among the key stakeholders and it involves policymakers in the assessment (Caulkins et al., 2011; Fitch et al., 2003; Mounteney, 2009; Rhodes et al., 1999).

While the RAR approach has proven useful in many HIV prevention projects and was applied in a local Early Warning System in Bergen, Norway (Mounteney, 2009), the literature review did not bring specific evidence about RAR methods being applied to the NPS problem. It is interesting to question why this has been the case – whether the NPS phenomenon attracted relatively more attention on the national and international level, where policymakers are "biased" towards scheduling, or whether it has been assumed that the already-existing preventive, treatment, and harm reduction programmes should absorb non-legal responses to the phenomenon.

To conclude, RA procedures are challenged by the high number of NPS and Internet drug markets. Changes leading to shorter RA procedures and the use of alternative sources of data are already being implemented. The introduction of brief initial assessments with recommendations for the development of an initial response may benefit effective drug policing. These should be followed by more in-depth assessments when indicated or when the data is inconclusive, with the aim being to confirm or refute initial conclusions and recommendations.

Our data suggests that public policymaking is best served when risk assessments of emerging drug trends are situated within a cyclic and systematic process of monitoring and evaluation in which national and local-level efforts are included and the perspectives of (online) communities of people involved in NPS consumption and outreach workers are represented.

Beyond merely formulating legal responses to NPS (e.g. scheduling), the outcomes of risk assessments should inform other potential regulatory instruments, as well as prevention, harm reduction, and treatment responses.

The roles of the authors: Eva Drápalová, Jean-Paul Grund, and Vendula Běláčková conceived the study and drew up its design. Eva Drápalová performed the review, collected and analysed the data, and compiled the results. Jean-Paul Grund and Vendula Běláčková participated in the analysis of the data and the preparation of the paper for publication.
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Role autorů: *Eva Drápalová, Jean-Paul Grund a Vendula Běláčková navrhli tuto studii a její design. Eva Drápalová provedla rešerši, analyzovala sebraná data a shrnula výsledky. Jean-Paul Grund a Vendula Běláčková se spolupodíleli na analýze dat a přípravě této publikace.*
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Community Based Research Informing Planning & Implementation of Interventions

Results from a 5-Country RAR of New Psychoactive Drugs (NPS)

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Abstract

Background. The EC-DPIP **NPSinEurope.eu** project is piloting harm reduction interventions, targeting NPS consumption in communities of people who use drugs heavily (PUDH). The Department of Addictology, Charles University in Prague (DoA) conducted a RAR study of NPS use together with the local project partners.

Methods. Partners reviewed new drug trends in their countries, an Internet Snapshot and focus groups with key stakeholders. DoA developed al research materials and conducted the 5-country data analysis.

Results. NPS are available from a variety of sources. Smart shops boosted the popularity of NPS, but after legislative action most were closed or severely restricted their assortment. A variety of NPS are available via websites; synthetic cannabinoids and synthetic stimulants prevail. Injecting of mephedrone, MDPV or other synthetic stimulants among PUDH is reported in the Czech Republic, Poland and Romania, but to varying degrees. In Portugal and Greece, NPS are of less concern. In Greece the RAR was focussed on the use of Sisha (smoked methamphetamine).

Conclusions. Trends in NPS use vary greatly across Europe. Emerging drug trends are increasingly unpredictable, subject to (offline/online) availability, legal status/action, local preferences, access to traditional substances, such as cannabis, MDMA or heroin, and economic variables.

Local NGOs successfully conducted an assessment of the NPS situation in their communities and countries, informing the implementation of pilot harm reduction interventions.

Introduction

Scope and Objectives

This project (NPSinEurope.eu) aims to contribute to the development of innovative and effective health promotion interventions targeting emerging NPS use in Europe, in particular in response to more hazardous patterns of use and in vulnerable populations.

Aims of RAR study:

Identify and document the emergent use of NPS among People Who Use Drugs Heavily (PUDH) in the five EU member states and map the developing response in these countries.

Countries & Implementing Partners

Czech Republic – Sananim, Prague
Greece – Praksis, Athens
Poland – Monar, Krakov
Portugal – APDES, Porto
Romania – Carusel, Bucharest

Main Applicant

APDES, Porto, PT

Intervention Development

FRG, Amsterdam, NL

Methods and Materials

The local RAR consisted of three parts:

1) A desk review on the national NPS situation;

Each partner organisation collected and reviewed published and unpublished information pertaining to the key RAR questions concerning on NPS consumption: peer reviewed and "grey" scientific literature; government publications; statistics and estimates; local media reports; and information online.

2) An assessment of NPS availability in offline and online drug markets;

Offline availability of NPS was determined by literature review, inspection of data from early warning systems, drug testing programs (where available) , law enforcement or other relevant data sources, as well as in the separate focus group discussions. Online availability was assessed using the EMCDDA Snapshot Methodology.

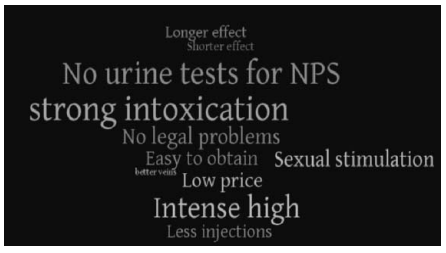
3) Focus groups with stakeholders in NPS use that explored specific questions more in-depth.

In each country focus groups were organised in two different cities/regions with evident NPS use with (i) knowledgeable professionals; and, (ii) with PUDH involved in NPS consumption. In total, 19 focus groups were conducted in 8 cities; ten with professionals and nine with PUDH and 111 participants in total.

The 5-country RAR data were subsequently subjected to a stepwise content analysis in order to describe the national situation, cultural interpretations and meanings of NPS use across user populations and national borders. The analysis aimed to describe the various viewpoints and the needs of the affected communities and other stakeholders that need to be addressed in service development.

Results

Positive and negative effects of NPS use (Focus Groups, all countries)



Availability

In the *Czech Republic*, *Poland*, *Portugal* and *Romania*, NPS availability increased sharply with the introduction of brick & mortar outlets (2007-2009) and decreased again after their closure (2001-2013). In *Greece*, NPS emerged in 2010 but gained only minor attention. But since 2010-2011, Greek PUDH have turned to "Sisa" (homemade methamphetamine). Although the closure of physical outlets resulted in important reductions in (novice) NPS consumption, websites targeting the studied countries mail NPS to anybody with a credit card. Importantly, (once bought in bulk online) NPS are increasingly retailed in traditional drug dealing structures.

Extent and nature of NPS use among PUDH

Use of NPS among PUDH concerns primarily *synthetic cathinones* and varies widely between the countries, from (nearly) absent in Portugal, to almost one and two thirds in cities in respectively the Czech Republic and Romania, to unmeasured, but clearly present, in Poland. Many Greek PUDH have either replaced or combine heroin with *Sisa*, which is smoked (±80%) or injected (20%). A regional trend in the Czech Republic concerns injection of *diverted opioid pain killers* (fentanyl & Vendal-Retard® (extended release morphine). In 2014 5.1% of Czech PWID had injected pharmaceutical opioids (23.6% in the Pilsen region). Opioid substitution treatment (OST) coverage in these regions is considered low.

Conclusions

- NPS are available to residents of the studied countries online, in black market structures and in peer networks, in which bulk online purchases are further distributed.
- The NPS most frequently consumed among PUDH across the 5 countries are synthetic cathinones.
- Among Greek PUDH, Sisa – cheap homemade methamphetamine – has largely substituted (expensive) heroin and cocaine.
- The legal status of NPS is viewed as a benefit by PUDH, but their constant purity, strong intoxication effects, low price and availability seem at least equally important. Legal status is less of a factor when NPS are bought in black market structures. .
- In the Czech Republic many PUDH in the region have turned to diverted pharmaceutical opioids, reportedly due to the unstable quality and availability of heroin, in a situation of low OST coverage.
- Heavy of cathinones or Sisa may lead to a range of serious physical and (mental) health problems, often similar to those of scheduled stimulants.
- Mental health problems and loss of control among PUDH are often heralded by fatigue, sleep deprivation and exhaustion and may be associated with either the pharmacology (drug) or alien status (setting) of the recently introduced substances.
- Short acting cathinones are associated with high injecting frequencies. Collective consumption, e.g. at the point of sale, stimulant related sexual and other risk behaviours may increase the burden of infectious diseases in studied countries.

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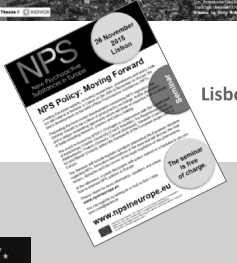
Internet, Unternet and harm reduction.



Or come to
Lisbon, 26-11-2015!

Acknowledgments

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PŘEHLEDOVÝ ČLÁNEK

Omamné a psychotropní látky jsou když … – návrh legislativní definice omamných a psychotropních látek v ČR

MRAVČÍK, V.[1,2,3], GROHMANNOVÁ, K.[1,2,3], ŠTEFUNKOVÁ, M.[2,4], BĚLÁČKOVÁ, V.[2,3], ZÁBRANSKÝ, T.[2,5]

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SOUHRN: *Článek reaguje na právní situaci vzniklou po vyhlášení nálezu Ústavního soudu ze dne 23. července 2013 sp. zn. Pl. ÚS 13/12, jenž označil za neústavní, aby „množství větší než malé" nelegálních drog (v českém právu označovaných „omamné a psychotropní látky", OPL) bylo určováno vládním nařízením. Autoři se domnívají, že vzhledem k absenci obecného vymezení pojmu OPL v české legislativě, tedy vymezení vlastností, které musí látka splnit, aby byla prohlášena za OPL, může dříve či později vést k obdobnému nálezu Ústavního soudu rovněž ve věci zákonného vymezení OPL pro účely trestního práva. Autoři se snaží shrnout platné mezinárodní a nadnárodní právní předpisy, praxi v některých rozvinutých zemích, a přicházejí s vlastním legislativním návrhem toho, co by mělo být za OPL považováno, který tímto předkládají k odborné i veřejné diskusi.*

KLÍČOVÁ SLOVA: OMAMNÁ A PSYCHOTROPNÍ LÁTKA – NOVÁ PSYCHOAKTIVNÍ LÁTKA – ZÁKONNÁ DEFINICE – HODNOCENÍ RIZIK

Došlo do redakce: 20 / ČERVENEC / 2015 **Přijato k tisku:** 4 / LEDEN / 2016

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REVIEW ARTICLE

Narcotic and Psychotropic Substances Are … – a Proposal for a Legal Definition of Illicit Drugs in the Czech Republic

MRAVČÍK, V.[1,2,3], GROHMANNOVÁ, K.[1,2,3], ŠTEFUNKOVÁ, M.[2,4], BĚLÁČKOVÁ, V.[2,3], ZÁBRANSKÝ, T.[2,5]

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SUMMARY: The article responds to the legal situation following the publication of a decision of the Constitutional Court (File Ref. Pl. ÚS 13/12, dated 23rd July 2013) to the effect that it is unconstitutional for a "quantity greater than small" of illicit drugs (referred to as "narcotic and psychotropic substances" in the Czech laws) to be determined by a government regulation (by-law). The authors assume that because of the absence of a general definition of illicit drugs, including a definition of the principal characteristics of this category of substances, in the Czech legislation a similar judgement of the Constitutional Court may be expected sooner or later with regard to the legal determination of "what illicit drugs are" in terms of the criminal law. The authors attempt to summarise the effective international and supranational legislation and practice in selected developed countries while proposing a legislative definition of what should be considered illicit drugs for further expert and public debate.

KEY WORDS: NARCOTIC AND PSYCHOTROPIC SUBSTANCES – NEW PSYCHOACTIVE SUBSTANCES – LEGISLATIVE DEFINITION – RISK ASSESSMENT

Submitted: 20 / JULY / 2015 **Accepted:** 4 / JANUARY / 2016

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1 BACKGROUND

On 23 August 2013 the decision of the Constitutional Court File Ref. Pl. ÚS 13/12 was promulgated in the Collection of Laws under No. 259/2013 Coll. It quashed some of the stipulations of Section 289 (2) of Act No. 40/2009 Coll., the Penal Code, as well as annulling the effect of the stipulations of Section 2 and Schedule No. 2 incorporated into Government Regulation No. 467/2009 Coll., specifying for the purposes of the Penal Code what constitutes a poison and defining the quantities greater than small for narcotic substances, psychotropic substances, any preparations containing such substances, and poisons. This effectively revoked parts of legal regulations which prescribed quantities greater than small for the individual illicit drugs, i.e. the levels constituting the legal thresholds for persons in unauthorised possession of such substances for personal use to be held liable for administrative or criminal offences. In support of its decision, the Constitutional Court referred to the Charter of Fundamental Rights and Freedoms, Art. 39, and the Constitution of the Czech Republic, Art. 78, which stipulate that only a law designates what constitutes a criminal offence, and it is exclusively the parliament that is competent to pass laws, not the executive governmental bodies and their instruments, including government regulations. The Constitutional Court argues that a government regulation would be acceptable in this respect if it further specified statutory stipulations governing the area at least in general terms. In this particular case, however, the government had nothing to specify on the basis of the empowering provision, as the law prescribed no guidance whatsoever as to how to proceed with setting threshold quantities.

An amendment to Act No. 167/1998 Coll., on addictive substances (the Act on Addictive Substances), effective since January 2014, caused the schedules thereto containing a list of illicit drugs also to be transferred to Government Regulation No. 463/2013 Coll., on the lists of addictive substances. The change was primarily driven by efforts to accelerate the process of incorporating new psychoactive substances into the list of controlled drugs. Nevertheless, the question arises of whether the instance of moving the lists of illicit drugs from the law (or schedules thereto) to by-laws does not provide grounds for also applying the objections of the Constitutional Court concerning the legislative solution to threshold quantities of individual drugs to the definitions pertaining to illicit drugs for the purposes of determining the terms of criminal liability which are laid down in a government regulation.

This issue has not been addressed yet. The reason is that the Constitutional Court considers cases on the basis of a petition for the institution of proceedings (see the Constitution of the Czech Republic, Art. 83 et seq., Regulation No. 1/1993 Coll., and Act No. 182/1993 Sb., on the Constitutional Court). It is possible, however, that a petition for a review of the constitutionality of the way the term "narcotic and psychotropic substances" is defined for criminal purposes will be lodged at some time in the future. It is particularly likely with respect to the issue of so-called new psychoactive substances (see further below).

2 DEFINITION OF NARCOTIC AND PSYCHOTROPIC SUBSTANCES (ILLICIT DRUGS) IN THE CURRENT CZECH LEGISLATION

The basic legal framework for the handling of narcotic and psychotropic substances is the Act on Addictive Substances. While the introductory provisions of Section 2 of that law stipulate what a preparation, poppy straw, cannabis, coca bush, and the export and import of addictive substances are, no general definitions of the individual addictive substances or their characteristics are specified there. For the purposes of this Act, addictive substances mean narcotic and psychotropic substances listed in Schedules 1 to 7 attached to the Government Regulation on the list of addictive substances (Section 2a of the Act on Addictive Substances). The empowering provision of the Act (Section 44c) only adds that the lists contain substances controlled by international conventions and other substances which come under control because of the scope of their abuse or because of their immediate or indirect adverse effect on health. All the same, the schedules of Government Regulation No. 463/2013 Coll. to which the Act on Addictive Substances refers constitute simple inventories of substances and generally mirror the structure of the schedules of the 1961 Single Convention on Narcotic Drugs and the 1971 Convention on Psychotropic Substances, which the Czech Republic is bound by.[1] The Penal Code, i.e. Act No. 40/2009, also works with the term 'addictive substance', which may be somewhat confusing. In comparison with the Act on Addictive Substances, Section 130 of the Penal Code defines addictive substances in considerably broader terms, taking into account their properties. Besides controlled drugs, the definition of addictive substances for the purposes of the Penal Code encompasses legal substances such as alcohol and other substances that can have adverse effects on a person's mental condition or their regulatory and cognitive abilities and social behaviour. According to Section 4 of the Act on Addictive Substances, it is not allowed to handle narcotic and psychotropic substances and preparations without a permit. Without a permit, any such handling is deemed unauthorised and can constitute e.g. the crime of the unauthorised production and other handling of narcotic and psychotropic substances and poisons (Section 283 of the Pe-

1/ The Single Convention on Narcotic Drugs of 1961, published by virtue of Decree of the Minister of Foreign Affairs No. 47/1965 Coll., and the Convention on Psychotropic Substances of 1971, published by virtue of Decree of the Minister of Foreign Affairs No. 62/1989 Coll.

nal Code). Specific substances which are considered "narcotic and psychotropic" for the purposes of the Penal Code and for subsequent consequences in terms of the criminal law are set out in the Act on Addictive Substances (Section 289 [1] of the Penal Code). One of the core tenets of criminal law is the *nullum crimen sine lege (no crime without law)* principle. Its importance is underlined by the fact that it is explicitly referred to in Art. 39 of the Charter of Fundamental Rights and Freedoms (Regulation No. 2/1993 Coll.). In simple terms, this principle holds that it is the law only that determines which act is a criminal offence. All the conceptual elements of each criminal offence which delineate the boundaries of criminal liability must thus be clearly and accurately set out in the penal code or in another relevant piece of legislation (Act). While certain features may still be specified in a bylaw, such a regulation must always be derived from a law (Act) that governs the feature at least in general terms (Šámal et al., 2012). Nevertheless, bylaws *per se* cannot determine the terms of criminal liability. Significantly, it was the contradiction of the *nullum crimen sine lege* principle that the Constitutional Court used to support its arguments in its above-cited decision. As regards the definition of narcotic and psychotropic substances, in line with this principle, the Penal Code refers to the Act on Addictive Substances, which, however, refers to the schedules of a bylaw, and this cannot be considered sufficient in terms of the criminal law. The absence of a detailed statutory definition of the term "narcotic and psychotropic substances" (in the form of a description of the properties of the substances which could also be used as criteria for including substances in the lists of illicit drugs) in the effective legal regulation appears problematic, particularly with respect to new psychoactive substances which are not controlled under the international conventions but which each country decides to control in its own way by means of its respective national legislative system.

3 NEW PSYCHOACTIVE SUBSTANCES

The term "new psychoactive substances" (NPS) refers to psychoactive substances of various chemical groups which are not controlled under the international UN conventions and are generally not controlled as narcotic and psychotropic substances at the national or EU levels either. NPS cover the full spectrum of effects, ranging from stimulating, euphorising, and hallucinogenic to depressant. The first significant appearance of NPS on the drug scene dates back to the 1990s and is associated with Alexander Shulgin and his co-workers engaging in the development and testing of stimulating and hallucinogenic compounds (Shulgin & Shulgin, 1991, 1997). It was only at the beginning of this century that a boom in the supply of NPS was experienced; in recent years international and national control mechanisms have identified hundreds of new substances, including those derived from the well-known controlled drugs (Carroll, Lewin, Mascarella, Seltzman, & Reddy, 2012; Páleníček, Kubů, & Mravčík, 2004). In Europe these new substances are collectively referred to as "new psychoactive substances", "legal highs", or "research chemicals", while in the USA they are often called "bath salts"; in the Czech Republic they are known as "*nové psychoaktivní látky*" (new psychoactive substances), "*nové syntetické drogy*" (new synthetic drugs), or "*nové drogy*" (new drugs).

In 2014 101 new psychoactive substances were identified in the EU by the Early Warning System. When compared to previous years, it is the largest number of substances reported within a single year (81 in 2013, 73 in 2012, and 49 in 2011). The largest groups comprised synthetic cannabinoids and synthetic cathinones (EMCDDA, 2015). The Czech Republic reported the identification of 19 new psychoactive substances to the Early Warning System in 2014; 13 of them were identified for the first time in the Czech Republic and for one of them it was the first time it had occurred within the EU. They were most commonly cathinones (six substances), phenetylamines (four), and arylcyclohexylamines (three) (Mravčík, Grohmannová, Běláčková, & Zábranský, 2015; Národní monitorovací středisko pro drogy a závislosti, 2015).

NPS are mainly exported from Asian countries, especially from China and India, and they are processed and packaged in Europe. They are sold under various trade names, chemical names, or abbreviations derived from their chemical denomination. NPS are often offered via freely accessible online markets. In recent years the trade in NPS has increasingly been shifting to anonymised segments of the internet which remain hidden from standard browsers and which are also used for dealing in illicit drugs and other illegal commodities (EMCDDA, 2015).

The increasing emergence of ever-newer psychoactive substances has caused a growing number of countries to control a growing number of NPS which, paradoxically, results in the production, supply, and use of additional substances which were not previously known or widespread. Hence, NPS pose a challenge for the existing prohibitionist system of drug control at the global, European, and national levels (Běláčková, Mravčík, & Zábranský, 2011; Griffiths, Evans-Brown, & Sedefov, 2013; Hughes & Griffiths, 2014), as well as raising questions about its effectiveness (Lancet editorial, 2010; Measham, Moore, Newcombe, & 2010).

4 DEFINITION OF ILLICIT DRUGS AND CRITERIA FOR ASSESSING THEM WITHIN THE UN INTERNATIONAL CONTROL SYSTEM

As indicated above, the Czech legislation concerning the control and regulation of narcotic and psychotropic substances is greatly influenced by the obligations of the Czech Republic ensuing from international documents. In this re-

spect, the essential documents (not only for the Czech Republic) comprise UN drug conventions, especially the Single Convention on Narcotic Drugs of 1961 and the Convention on Psychotropic Substances of 1971.[2] The Single Convention contains lists of substances regarded as narcotic while laying down control measures which the signatories to the Convention are obliged to adopt in handling such substances. The Convention includes four schedules with lists of substances determining the systems of control set out in Article 2 thereof. Unlike the previous international drug control documents which the Single Convention replaced, changes and additions to these lists can be made without going through the lengthy process of having an amendment to the entire Convention approved. The mechanism of changes which can be initiated by any of the parties to the Convention or the World Health Organisation (WHO) is set out in Article 3 of the Convention. The Convention on Psychotropic Substances is of a similar nature. It specifies the system of control for psychotropic substances listed in its Schedules I to IV. The lists can also be modified as needed, following the process stipulated in Article 2. Both conventions leave it up to the WHO to determine whether a substance should be subjected to international control or whether it should be excluded from the international control regime. For these purposes, the WHO established the Expert Committee on Drug Dependence (ECDD).

In Article 2, Item 4, the 1971 Convention explicitly provides that it is the responsibility of the WHO to find:

- whether a substance has the capacity to induce a state of dependence and stimulate or depress the central nervous system, whether it can result in hallucinations or disturbances in motor functions, thinking, behaviour, perception or mood, or
- has the capacity to lead to similar abuse and similar ill effects to a substance which is already controlled, and
- whether there is sufficient evidence that the substance is being or is likely to be abused so as to cause health or social harm (determining the degree or likelihood of abuse).

According to these international conventions, control should apply to those substances which may produce "similar abuse and similar ill effects" to those already included in the schedules. In the event that a new substance displays similarities to multiple substances listed in the schedules of both conventions, the ECDD primarily examines the possibility of applying the control measures according to the 1961 Convention. If that alternative is ruled out, it proceeds to assess the substances against the criteria laid down by the Convention of 1971 (Hallam, Bewley-Taylor, & Jelsma, 2014; Health Canada, 2014; WHO, 2010).

The results of the assessment of a substance under consideration, including the extent of its abuse, the degree of seriousness of the public health and social problems, and the degree of therapeutic usefulness of the substance, together with recommendations on control measures, are submitted by the WHO to the UN Commission on Narcotic Drugs (CND), which is competent to decide whether a change in the lists of substances incorporated within the international conventions should be made. The CND convenes in Vienna annually, in March. Maintaining prescribed regional representation, it consists of representatives of 83 countries which are replaced at regular four-year intervals. The Czech Republic was also elected a member of the CND for the 2014-2017 period.

Any decision of the Commission concerning a change in the schedules on the basis of a proposal made by a party to the Convention is subject to review by the Economic and Social Council of the United Nations.

While undoubtedly more effective than amendments to the Conventions, this mechanism still involves a rather lengthy and formalistic process, which poses a problem particularly as far as new psychoactive substances are concerned.

More effective monitoring and exchange of information about these substances on the international level should be facilitated by the Early Warning Advisory (EWA) platform, administered by the United Nations Office for Drugs and Crime (UNODC).[3] In addition to promoting international control, the UNODC calls upon the member states to apply more flexible monitoring and control mechanisms at both the regional and national levels (UNODC, 2013).

While the Conventions differ in their criteria for listing substances in specific schedules, it can be summarised that the schedules reflect the extent of the risk and harm which the individual substances (potentially) present and whether they can be used or are being used for therapeutic purposes (*Figure 1*). The groups can be characterised as follows:

- the most rigorous control measures apply to substances of which the abuse constitutes an especially serious risk to public health and which have very limited, if any, therapeutic value;
- less strict measures apply to substances of which the abuse constitutes a substantial risk to public health and which have little to moderate therapeutic value;
- control measures of low strictness apply to substances of which the abuse constitutes a substantial risk to

2/ The body of the UN drug conventions also encompasses the UN Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988 (promulgated by a communication of the Czech Ministry of Foreign Affairs under No. 462/1991 Coll.), which, however, does not define narcotic and psychotropic substances.

3/ https://www.unodc.org/LSS/Home/NPS

Figure 1 / Obrázek 1
Schedules contained in the UN drug control conventions
Seznamy v rámci úmluv OSN o kontrole drog

Single Convention on Narcotic Drugs, 1961

Schedule I	Schedule II	Schedule III	Schedule IV
Substances with high dependence-inducing potential and liable to abuse and precursors easily convertible into substances of a similar dependence-inducing capacity and liable to abuse (such as cannabis, opium, heroin, cocaine, coca leaves, and oxycodone)	Substances with lower dependence-inducing potential and liable to of abuse in comparison with substances included in Schedule I.	Preparations containing small quantities of narcotic substances; they are unlikely to be abused and are exempted from the majority of control measures applicable to the drugs they contain (e.g. < 2.5% of codeine, < 0.1% of cocaine)	Certain substances with "particularly dangerous properties" and little or no therapeutic value (such as cannabis and heroin) which are also listed in Schedule I

Convention on Psychotropic Substances, 1971

Schedule I	Schedule II	Schedule III	Schedule IV
Drugs posing a high risk of abuse and a particularly serious threat to public health, with little or no therapeutic value (such as LSD, MDMA, and cathinone)	Drugs posing a risk of abuse and a serious threat to public health which have a low to moderate therapeutic value (such as dronabinol and amphetamines)	Drugs posing a risk of abuse and a serious threat to public health which have a moderate to high therapeutic value (such as barbiturates and buprenorphine)	Drugs posing a risk of abuse and a moderate threat to public health, with a high therapeutic value (such as tranquillisers, including diazepam)

Source: WHO (2010)
Zdroj: WHO (2010)

public health and which have moderate to great therapeutic value;
- the least strict regime applies to substances of which the abuse constitutes a smaller but still significant risk to public health and which have a therapeutic value from little to great.

It is apparent that the strictness of the control regimes applied to some of the substances does not match the degree of risk they actually pose. Inconsistencies can be found both within the group of illicit drugs and with regard to comparing those with tobacco and alcohol, despite the fact that such comparisons take account of indicators pertaining to both individual risks (such as fatality, comorbidity, dependence-inducing potential, loss of tangible assets, and damage to social ties) and social risks (such as crime, economic costs, and loss of social cohesion) which go hand in hand with the substances in question (Nutt, King, & Phillips, 2010; Taylor et al., 2012; van Amsterdam, Opperhuizen, Koeter, & van den Brink, 2010).

The situation becomes even more complicated with new psychoactive substances. While there is enough evidence on which to evaluate the danger posed by "old", "traditional" drugs, given the relatively long history of their use, the lack of information about the risks of NPS is of major concern.

5 CRITERIA FOR ASSESSING AND CONTROLLING NEW PSYCHOACTIVE SUBSTANCES IN THE EU

In order to share information and develop a joint strategy for assessing the risk posed by NPS and introducing mechanisms to control them, in 1997 the Council of the EU adopted a Joint Action concerning new synthetic drugs (No. 97/396/JHA). This initiative was aimed at synthetic drugs which are not controlled by the international conventions. The joint action gave rise to the Early Warning System (EWS), coordinated by the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) in association with Interpol.

Responding to the developments in the supply of new drugs, the Joint Action on new synthetic drugs was replaced in 2005 by the Council Decision on the information exchange, risk assessment, and control of new psychoactive substances (No. 2005/387/JHA), which, in addition to new synthetic substances not accounted for by the international convention, deals with new narcotic and psychotropic substances in general, including veterinary and human medici-

nal products which are not subject to control measures laid down in the international conventions. It also addresses the re-emergence of some of the "old" psychotropic substances and/or high-risk drug-using practices (Council of the European Union, 2005). The Czech Republic joined the EWS-related activities as part of its EU accession process in 2002; a dedicated multidisciplinary working group, coordinated by the National Monitoring Centre for Drugs and Addiction, was appointed by the Government Council for Drug Policy Coordination (GCDPC) for this purpose.

The EMCDDA sets out six main indicators to assess the harm of any NPS and to decide whether the formal risk assessment process should be launched in relation to the NPS under consideration. Such a process may subsequently lead to issuing recommendations for member states to control such a substance as an illicit drug (European Monitoring Centre for Drugs and Drug Addiction, 2007):

- the number and amount of seizures
- evidence of (international) trafficking
- evidence of the involvement of organised crime in production and distribution
- the toxicological and pharmaceutical properties of the substance or their estimates on the basis of an analogy with better-studied existing compounds
- evidence of the potential for further (rapid) spread of the substance
- evidence of use, intoxications, or fatalities in connection with the substance

EU member states differ in their responses to the challenge of assessing the risk and conducting effective control of NPS. Three approaches, which do not necessarily contradict each other, can generally be identified: (i) NPS are controlled on the basis of consumer protection laws and legislation governing pharmaceuticals (e.g. Poland, Austria, and the United Kingdom), (ii) the existing laws and legislative processes are extended and/or adjusted (e.g. Hungary, Finland, and the Czech Republic, too), and (iii) completely new legal regulations specifically intended to control NPS are introduced (e.g. Austria and Portugal). All such cases involve a prohibitory scheme, or this scheme being extended to cover the hitherto licit substances. In order to accelerate the legislative process, some countries have introduced "temporary control regimes" featuring lists of potentially risky substances with a limited period of validity (Latvia, Slovakia, the United Kingdom, and Hungary). This measure works as a legislative tool for a practically immediate reduction of the availability of NPS on the market, as well as making it possible to collect topical information needed for a competent decision about permanent control measures. The only country in the world whose legal framework has departed from the prohibitory approach is New Zealand, where psychoactive substances with a demonstrably low risk for users have come under governmental regulation since 2013 (the law permits their manufacturing and sale under certain licensing conditions) (EMCDDA, 2009). However, their attempt at a non-prohibitory approach fell victim to election-related "politicking" (Legal Highs NZ, 2015); on 8 May 2014 these substances became effectively illegal even there, as the regulatory requirements assumed a prohibitive effect because of the extremely high cost of the licensing process for "new substances" and, in particular, the ban on using laboratory animals, or performing tests on them, to demonstrate safety/harm to health (this gave rise to a drug "catch-22" situation in New Zealand). In addition, all the licences for low-risk and low-effect psychotropic substances that had been granted were revoked (Pychoactive Substances Regulatory Authority, 2014).

In July 2011 the European Commission submitted an evaluation report on the implementation of the existing European legislation, i.e. Council Decision 2005/387/JHA on the information exchange, risk assessment and control of new psychoactive substances. While finding this legislative tool useful, the report noted its gaps with regard to the scope and complexity of the issue. A new draft was prepared on the basis of this evaluation. However, when discussed by the Horizontal Working Party on Drugs of the Council of the EU (the Horizontal Drugs Group, HDG), it did not receive sufficient support from member states. Although this agenda was raised on more occasions during the HDG sessions, consensus was not reached. The subject of the debates was the very legal substance of the new legislation and the consequences it entails. The recent (May 2015) vote by the Committee of Permanent Representatives in the European Union (Comité des Représentants Permanents, COREPER) in favour of the effort to develop a brand new piece of legislation can be considered a milestone in the relatively long process of creating a new legal framework. It should provide the basis for a system resting on four pillars: (1) a simple system of information exchange among member states, the EMCDDA, and Europol, (2) risk assessment procedures aimed at identifying NPS-related risks, (3) temporary bans in emergencies which make it possible to effectively achieve the immediate reduction of the supply of NPS by means of implementing regulations, and (4) criminal sanctions for the production and sale of NPS (European Commission, 2015).

6 CONCLUSION – PROPOSAL FOR DEFINING ILLICIT DRUGS IN THE CZECH ACT ON ADDICTIVE SUBSTANCES

In particular, the absence of a general definition of illicit drugs ("narcotic and psychotropic substances") from the Czech legal framework, or the definition of the characteristics which a substance must possess to be declared an illicit drug, poses a problem in terms of controlling substances

which are not listed in schedules to the international conventions. In addition, it might be found unconstitutional in terms of the criminal law to have illicit drugs defined in a government regulation only. The solution may be to define narcotic and psychotropic substances in the Act on Addictive Substances while laying down the procedure for assessing substances before including them in schedules to the government regulation. The Act on Addictive Substances would thus determine specific properties for a substance to be considered narcotic and psychotropic, as well as providing guidance on how to assess substances for the risks they may pose.

We therefore suggest that the Act on Addictive Substances should define narcotic and/or psychotropic substances "as natural or synthetic psychoactive substances of which the handling should be controlled in the public interest because of their negative health and/or social effects on individuals and the community."

We further propose that the empowering provisions of the Act on Addictive Substances should be extended to include the description of the procedure for assessing the substances. It could read as follows:

"Prior to including a substance in Schedules 1 to 7 to its regulation, the Government will consider whether the substance stimulates or depresses the central nervous system, whether it induces hallucinations or affects motor functions, cognition, behaviour, perception or mood, whether it is capable of inducing dependence, whether it may have adverse effects, or whether it is capable of causing harm to health and social functioning. It also considers information pertaining to supply, production, trafficking, distribution, use, intoxications, and deaths associated with the substance. The Government also takes into account whether the molecular structure of the substance makes it capable of inducing a biological response similar to that produced by the substances controlled under the Single Convention on Narcotic Drugs and the Convention on Psychotropic Substances or the substances of which the control was recommended by virtue of Council Decision 2005/387/JHA of 10 May 2005, on the information exchange, risk assessment and control of new psychoactive substances. Additionally, the Government takes account of whether the substance can be or is used for therapeutic or other legitimate purposes." A detailed procedure can be set out in a bylaw or the statutes or the code of practice of a relevant expert body responsible for the actual assessment of substances. A draft version of such a procedure, including an outline of risk assessment processes at the international level and in other countries, was elaborated in a technical monograph on new psychoactive substances (Mravčík et al., 2015).

It would be advisable for the Act on Addictive Substances to incorporate a temporary control regime involving a list of narcotic and psychotropic substances with a time-limited validity in order to reduce the supply of NPS on which little information is available for risk assessment purposes and which are reasonably feared to present a potential risk of health and/or social harm to individuals and the community. The NPS would be placed on this temporary list, and controlled, until sufficient information is collected for assessing their risks and making further decisions accordingly. After a certain period, a substance may be included in the list of illicit drugs ("narcotic and psychotropic substances"), i.e. in a relevant schedule to the government regulation, or it may prove pointless to control the substance, and its status of a controlled substance expires.

In April 2015 the above proposals were discussed within the interdepartmental and interdisciplinary working group of the Government Council for Drug Policy Coordination (GCDPC), which was established in 2013 in order to analyse the situation and subsequent action following the Decision of the Constitutional Court, No. 13/12, dated 23 August 2013, and which also addresses other aspects of the legal framework for the regulation and criminal prosecution of the handling of illicit drugs. After being discussed at this expert level, the final draft amendment to the Act on Addictive Substances concerning the definition of narcotic and psychotropic substances should be submitted to the GCDPC and subsequently to the Government with a request for it to enter the legislative process.

The role of the authors: Viktor Mravčík, Kateřina Grohmannová, and Michaela Štefunková performed the literature search. Viktor Mravčík drafted the initial version of the article. All the authors contributed to the writing of the article and approved its final version.
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Konflikt zájmů: *Bez konfliktu zájmů.*

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NEWS

WWW.NPSINEUROPE.EU

Public health, treatment and harm reduction services across Europe are not always prepared for the rapidly expanding use of NPS and lack capacity and tools for addressing the rising use of these substances among marginalized, often young, drug consumers, nor for addressing the risks and potential harms associated with these substances. ***NPS in Europe*** launched a series of reports, addressing the phenomenon on political and practical level.

Partner of ***NPS in Europe*** are Apdes, Portugal, Charles University, Prague, Rainbow Group and Correlation Network, Amsterdam, Sananim, Prague, Monar, Krakow and Praksis, Athens.

Mapping EU 28

The report provides an overview of the use of new psychoactive substances in populations of People Who Use Drugs Heavily in the EU28 countries.

5 country RAR report

The RAR aimed to identify and document the emergent use of new psychoactive substances (NPS) among People Who Use Drugs Heavily) in Portugal, Romania, Greece, Poland and the Czech Republic.

Implementation report

The Implementation Report describes the outcomes and results of the RAR Implementations, which have been carried out in the 5 countries.

Lessons Learned & Recommendations NPS training Curriculum

The report draw 'lessons learned' and provides a number of recommendations when it comes to improved policy and practice in regard to NPS use.

NPS training Curriculum

The training supports the development of appropriate NPS responses with service providers and peers across Europe by raising awareness of new psychoactive substances, policy affecting them and identifying good practice on responding to NPS. For further questions about training modalities please contact Correlation Network at administration@correlation-net.org

LISBON ADDICTIONS 2017

Over 600 participants from 58 countries attended the First European conference on addictive behaviours and dependencies held in Lisbon in 2015. The conference sold out several months before the event. Selected presentations and posters are still available on the conference website at www.lisbonaddictions.eu

Following this success, the organisers have decided to launch **Lisbon Addictions 2017**, which will take place in the Lisboa Congress Centre (a new venue, which can accommodate up to 850 participants), **from 24 to 26 October 2017**.

Once again, the conference will be jointly organised by the Portuguese General Directorate for Intervention on Addictive Behaviours and Dependencies (SICAD), the journal Addiction, the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) and the International Society of Addiction Journal Editors (ISAJE).

Key dates: Registration opening in Autumn 2016. Call for abstracts to be launched in Autumn.

http://www.lisbonaddictions.eu/start

Local PASS Toolkit: způsob snižování míry užívání psychoaktivních látek na lokální úrovni

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***VÝCHODISKA**: Nové drogy, jejichž rizika stále nejsou dostatečně známa, lákají různé skupiny lidí. Zmapování lokálních trendů je nezbytnou podmínkou jak těmto trendům předcházet, aby nepřekročily únosnou mez a nestaly se problémem i v nejširším měřítku. Je třeba, aby zodpovědní činitelé na místní úrovni byli obeznámeni z riziky nových lokálních trendů a možnými způsoby řešení vzniklých situací. **CÍLE**: V reakci na tuto potřebu vznikl Evropský projekt Local PASS. Hlavními cíli projektu bylo zpracovat standardizovanou lokálně uplatnitelnou metodiku určenou k mapování situace, posuzování rizik a plánování intervencí, dále sdílení, diskutování a kritické hodnocení příkladů nejlepší praxe v oblasti řešení problematiky nových drog a v neposlední řadě zvyšování informovanosti veřejnosti a politiků ve vztahu k otázce užívání nových drog. **METODY A SOUBOR:** Na sběru dat se podílelo devět partnerských subjektů z pěti různých evropských zemí. Použitými metodami byly přehled dostupné literatury, rozhovory s klíčovými informanty (pět až šest informantů z každé země), ohniskové skupiny (jeden zástupce na partnerský subjekt) a online šetření (470 respondentů ze všech pěti zemí dohromady). **VÝSLEDKY**: Mezi hlavní zjištění patří nutnost znát cílovou skupinu konkrétních nových drog, poskytované informace o konkrétních drogách je třeba adresně směřovat na danou cílovou skupinu a nezbytnou podmínkou efektivity intervencí je dobrá komunikace a spolupráce mezi všemi aktéry. **ZÁVĚRY**: Všechny poznatky byly zapracovány do metodiky Local PASS Toolkit, jež je souborem doporučení, diagramů a nástrojů, které lze využít k časné identifikaci nových trendů v užívání a zneužívání návykových látek v lokálním měřítku a k přijetí opatření v reakci na zjištěný stav. Deklarovanými cíli jsou zajišťování relevantních informací pro tvorbu protidrogových politik na lokální úrovni, přispívání k transparentnímu rozhodování a poskytování relevantních a výzkumem ověřených podkladů pro implementaci a koncipování odpovídajících opatření v reakci na nové trendy v užívání drog.*

KLÍČOVÁ SLOVA: UŽÍVÁNÍ PSYCHOAKTIVNÍCH LÁTEK – NOVÉ DROGY – NOVÉ TRENDY V OBLASTI DROG – LOKÁLNÍ PROTIDROGOVÁ POLITIKA

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The Local PASS Toolkit: A Local approach towards the reduction of PsychoActive Substance uSe

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BACKGROUND: New drugs, of which the risks are still unknown, are attractive to various groups of people. The identification of local trends is crucial in order to prevent these trends from diffusing beyond a tipping point and becoming problematic at the macro level as well. Local authorities need to know the risks of new trends in the local situation, and how to respond to them. AIMS: In response to this need, the European Local PASS project was set up. The main aims of the project were to: develop standardised local guidelines for identification, risk assessment, and interventions; share knowledge on, discuss, and review best practice approaches to responding to emerging drugs, and raise social and political awareness of the consumption of new drugs. DESIGN, MEASUREMENTS, AND SAMPLE: Nine international partners from five European countries helped to collect data by means of a literature review, key informant interviews (five or six informants from each country), focus groups (one representative per partner), and an online survey (470 respondents from the five countries together). RESULTS: Some of the main findings are that it is crucial to know the target group of a newly emerging drug, the information provided on this drug needs to be tailored to the target group, and good communication and collaboration between all stakeholders is essential. CONCLUSIONS: All the findings have been processed into the Local PASS Toolkit, which is a set of guidelines, flowcharts, and tools that can be used for the early identification of, and an early response to, newly emerging trends in drug use and abuse in local settings. Its explicit goals are to inform local drug policy making, to contribute to a transparent decision-making process, and to provide relevant and evidence-based input into the implementation or design of appropriate responses to emerging drug trends.

KEY WORDS: PSYCHOACTIVE SUBSTANCE USE – NEWLY EMERGING DRUGS – NEW DRUG TREND – LOCAL DRUG POLICY

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1 INTRODUCTION

Substance use patterns in the EU are constantly changing, and recently have been influenced by developments in the new psychoactive substance (NPS) markets (EMCDDA, 2014; Griffiths et al., 2010; Hillebrand et al., 2010). The existing national and EU-level monitoring systems detect trends in new drugs, but in practice these give local authorities no or insufficient guidance as to how to respond to them. Local authorities would benefit from knowing what the risks posed by new trends in the local situation are, and how to respond to them. Since national trends often start locally (Nabben et al., 2010), the identification of local trends is crucial in order to prevent these trends from diffusing beyond a tipping point and becoming problematic at the macro level as well. Despite a variety of local consultations where new developments are discussed (e.g. by care institutions or the police), information often remains fragmented. The identification of new developments that deserve more attention may therefore come too late. To prevent this, a timely and complete overview of new or emerging trends on the local level and appropriate responses to them are essential. The Local PASS project developed a standardised local system for (1) the identification and (2) risk assessment of new developments in psychoactive substance use, and (3) developing an effective plan for local interventions. In this short report we present the project and its results, with a focus on the Local PASS Toolkit.

2 METHODS

The work was divided into workstreams for early identification, risk assessment, and interventions, and each assessed the best practices in their subject area. Within each workstream four different methods of data collection were used. These were literature reviews, key informant interviews, focus groups, and an online survey.

For the literature reviews a systematic research of the available literature was conducted to summarise the state of the knowledge on early identification, risk assessment, and intervention into emerging drug trends, with a focus on NPS. Peer-reviewed articles and publications were chosen as the sources of data. In addition, the grey literature was studied, such as reports from organisations and information from websites and fora.

The key informant (KI) interviews consisted of semi-structured interviews with five or six key informants from all of the Local PASS partner countries (i.e. Bulgaria, the Czech Republic, Italy, the Netherlands, and Portugal). The key informants represented various stakeholders from the local drug policy system (research workers, contact workers, peer workers, other workers in the drug use setting, policy makers in the public health sector, law enforcement representatives, epidemiologists, or other experts). They were interviewed to gain information on recent trends in drug use that had evolved in their locality. The aim was to obtain as detailed as possible a description of the most recent and significant trend(s) in drug use in the partner localities and their local drug policy framework on the topics of identification, risk assessment, and interventions.

The focus group meetings were semi-structured (brainstorming) sessions. Their aim was twofold: on the one hand, to clarify the information from the key informant interviews, and on the other hand, to gain additional information on the identification of new drug trends and responses to them. A total of three focus groups were held; one per workstream. At least one representative from each partner attended the focus groups and discussed the results from the KI interviews in depth.

The survey was conducted to collect quantifiable information on local trend identification, risk assessment, and interventions. The questions were based on the information gathered from the interviews, focus groups, and literature reviews. It was built into the online SurveyGizmo tool, and a separate version was made for each project partner's language (Bulgarian, Czech, Italian, Dutch, and Portuguese). The respondents were stakeholders in emerging drug trends – from service providers to policy makers and field workers. They were approached via e-mail. The survey was accessible online from August 15 to September 30 2014, with subsequent waves of reminders to fill out the survey. A total of 470 participants filled out the survey.

For more detailed information on the methodology we refer to the Best Practice Reports on the Local PASS website: www.localpass.eu.

3 KEY RESULTS

Some key findings recurred throughout the data collected. First, it is important to know the target groups: who they are, what defines and drives them, where they can be found, and how to gain their trust. To achieve this, active outreach and peer support are necessary. Training staff who work with (potential) users and involving the community and/or the users' networks also form part of this. Second, a group of local stakeholders establishing lines of communication is needed for sharing information about new trends and assessing their risks. Third, when information is provided, this needs to be tailored to the target group one wishes to reach, and one must ensure it is complete, correct, up-to-date, and easy to find. Fourth, a control policy installed by the (local) government which is not too oppressive is more desirable than a very strict one. Finally, good communication and collaboration between all stakeholders is essential. This includes local-level governance that listens to suggestions from care providers with hands-on experience, and an attitude that is open to change when circumstances require it.

4 THE LOCAL PASS TOOLKIT

The key elements mentioned above, together with all the other project results, were processed into the Local PASS Toolkit. This toolkit comprises a set of guidelines, flowcharts, and tools that can be used for the early identification of newly emerging trends in drug use and abuse in each locality and an early response to them (see http://www.localpass.eu/cms/local-pass-toolkit/ for the Toolkit and flowcharts). Its explicit goals are to inform local drug policy making, to contribute to a transparent decision-making process, and to provide relevant and evidence-based input into the implementation or design of appropriate responses to emerging drug trends. The toolkit can be implemented by local stakeholders, and requires only moderate research skills. The three guidelines within the toolkit – the Identification Guideline, the Risk Assessment Guideline, and the Intervention Guideline – present an overview of the procedures and tools involved in organising the identification and risk assessment of newly emerging drug trends and interventions towards these at the local level. The flowchart in *Figure 1* below is a representation of the organisational structure and the process flow of the Local PASS toolkit.

The core of the three Guidelines is presented here (see http://www.localpass.eu/cms/local-pass-toolkit/ for the complete guidelines).

4 / 1 Identification

The Local PASS Toolkit starts with the identification process. The aim of this process is to:

- identify trends at an early stage, before they reach the tipping point;
- obtain information about the trend;
- enable the efficient exchange of information between the persons involved in local drug policy decision making and implementation;
- provide data for the higher levels of drug policy decision making and implementation;
- alert relevant key players within the drug policy system in the event of a potentially high-risk trend.

This data is used for making a decision about whether or not it represents a new trend. When they do, and when this trend is considered possibly harmful, the local risk assessment process will be initiated.

See http://www.localpass.eu/cms/local-pass-toolkit/for the Identification flowchart.

4 / 2 Risk assessment

The aims of the risk assessment process are to:

- collect data about the risks posed by the new trend;
- assess the relevance of the available data and to evaluate it;
- inform drug policy decision making on the local level;
- provide data necessary for implementing or designing appropriate responses to the new trend.

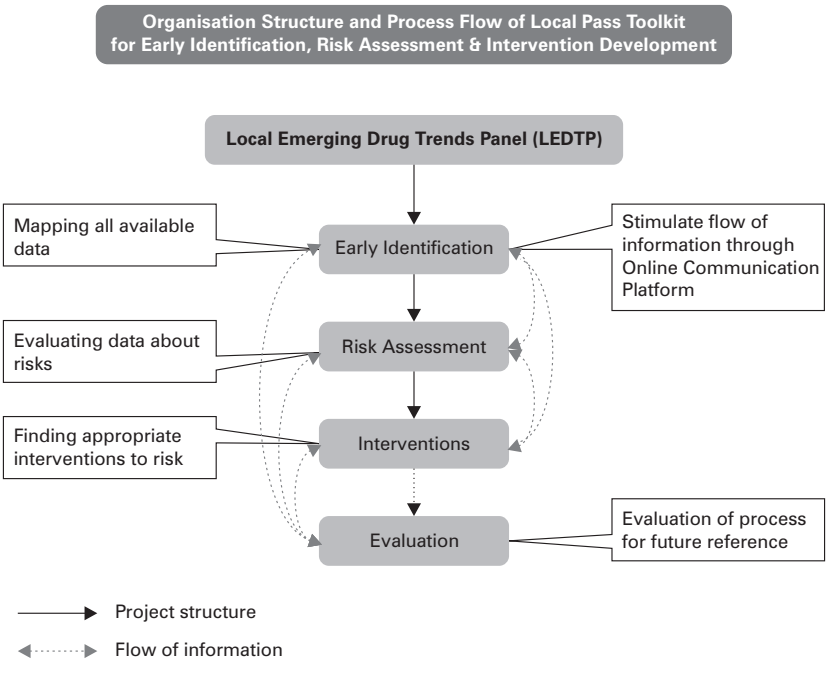

Figure 1 / Obrázek 1

Schematic representation of the structure and process flow of the Local PASS toolkit

Schematické znázornění struktury a vzájemných vztahů mezi jednotlivými komponenty a aktivitami metodiky Local PASS Toolkit

On the basis of the collected data, a rapid assessment can be performed. If this points to risks posed by the new trend to the local community, an elaborate risk assessment will be performed. This will yield input for identifying (an) appropriate intervention(s).

See http://www.localpass.eu/cms/local-pass-toolkit/for the Risk assessment flowchart.

4 / 3 Interventions

The process of implementing a local intervention will be performed in order to:

- respond to a newly emerging drug trend with the correct interventions;
- counter the risks associated with this new trend;
- prevent the trend from reaching the tipping point and spreading to larger user groups within the locality, as well as outside it;
- enable the efficient exchange of information between the persons involved in the drug policy and healthcare system;
- provide data for the higher levels of the drug policy system.

On the basis of the risks associated with the trend, interventions tailored to the identified target group(s) can be selected and prioritised. After the intervention has been carried out, an evaluation of the process will enable the sharing of experiences and storing lessons learned for future reference.

See http://www.localpass.eu/cms/local-pass-toolkit/for the Interventions flowchart.

5 BENEFITS

The Local PASS Toolkit will better enable municipalities and other local stakeholders to: (i) identify emerging drug trends early on, before they tip over into a phase of wider diffusion; (ii) assess the risks involved and the potential harms that might occur, and (iii) implement and/or develop appropriate interventions when indicated by the risk assessment. The short-term benefits of this may be closer and quicker collaboration with all stakeholders, an earlier response, and interventions that are tailored to the target group. In the long run an early response to emerging drug trends may lead to a reduction in the use of psychoactive substances, a decrease in drug-related problems, and a reduction in the costs for society in terms of, for instance, treatment, prosecution, and healthcare.

The roles of the authors: Renée Otte co-conducted the study (project leader for content and leader of Workstream 3 on interventions). She wrote the short report, based on the Final Report of the Local PASS project (written by Renée Otte) and the Summary of the Final Report (written by Ankie Schoenmakers). Vendula Běláčková co-designed and co-conducted the study (leader of workstream 1 on identification). She reviewed the short report. Ankie Schoenmakers co-conducted the study (leader of workstream 4 on the dissemination of the results). She reviewed the short report, which was partly based on the Summary of the Final Report she had written. Jean-Paul Grund co-designed and co-conducted the study (leader of Workstream 3 on risk assessment). He reviewed the short report.

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Role autorů: *Renée Otte se podílela na realizaci studie (vedoucí projektu pro obsahovou část a vedoucí Pracovní oblasti (Workstream) 3 věnované intervencím. Je autorkou této krátké zprávy, zpracované na základě závěrečné zprávy z projektu Local PASS (jíž je sama autorkou) a resumé závěrečné zprávy (autorkou je Ankie Schoenmakers). Vendula Běláčková je spoluautorkou designu studie a podílela se rovněž na její vlastní realizaci (vedoucí Pracovní oblasti 1 věnované mapování situace). Podílela se na finální verzi této krátké zprávy. Ankie Schoenmakers se podílela na realizaci studie (vedoucí Pracovní oblasti 4 zaměřené na diseminaci výsledků). Podílela se na finálním znění této krátké zprávy, která z části vychází z resumé závěrečné zprávy, jíž je autorkou. Jean-Paul Grund je spoluautorem designu studie a podílel se rovněž na její vlastní realizaci (vedoucí Pracovní oblasti 3 věnované posuzování rizik). Podílel se na finálním znění této krátké zprávy.*

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Nové psychoaktivní látky mezi intenzivními uživateli drog v Evropě: efektivní intervence v oblasti minimalizace rizik a možné překážky v jejich realizaci

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VÝCHODISKA: *Článek popisuje nastavení, metodiku a výsledky intervencí realizovaných v pěti různých evropských zemích (Řecko, Polsko, Česká republika, Rumunsko a Portugalsko) v rámci projektu „Nové psychoaktivní látky v Evropě" („NPS in Europe"). **CÍLE:** Článek předkládá informace o praktických intervencích na lokální úrovni. Přibližuje, jakým způsobem jednotliví projektoví partneři plánovali, organizovali a monitorovali své praktické intervence a jak byly výzkumné poznatky přímo přenášeny do praxe. **METODY:** Za účelem plánování, organizace a monitoringu místních intervencí byla zpracována specifická metodika, která umožnila stratifikovat jednotlivé problémy a potřeby do různých úrovní, např. fyzické, sociální, politické a ekonomické. **VÝSLEDKY:** Jedním z hlavních závěrů je konstatování, že implementaci efektivních intervencí často brání legislativní omezení: stále větší počet nových psychoaktivních látek (NPL) se ocitá na seznamech zakázaných substancí, což současně přispívá k nárůstu počtu nových neznámých látek s neznámými zdravotními riziky. Na individuální úrovni lze konstatovat, že NPL se často užívají, protože (doposud) nespadají do režimu kontroly vymezeného protidrogovými úmluvami OSN a jsou snadno dostupné, ale nejsou nutně primární drogou. Studie provedené metodikou RAR a intervence v pěti různých zemích rovněž ukázaly, že poskytovatelé služeb, jakými jsou např. zařízení pro uživatele drog a organizace zaměřující se na minimalizaci rizik, jakož i uživatelé NPL nemají k dispozici základní informace o problematice užívání NPL, o účincích a rizicích jednotlivých drog, a nevědí proto, jakou formu edukace vůči intenzivním uživatelům drog v tomto ohledu zvolit. V neposlední řadě bylo zjištěno, že ve všech pěti zúčastněných evropských zemích chybí politická vůle k podpoře intervencí v oblasti minimalizace rizik ve vztahu k NPL. **ZÁVĚRY:** Metodické pojetí i výsledky intervencí mohou posloužit jako vodítko a model dobré praxe pro ty služby pro uživatele drog, které chtějí vytvářet efektivní intervence zaměřené na minimalizaci rizik v oblasti užívání NPL.*

KLÍČOVÁ SLOVA: NPS IN EUROPE – INTENZIVNÍ UŽIVATELÉ DROG – RAR – PRAXE – INTERVENCE NA MÍSTNÍ ÚROVNI – PŘEKÁŽKY A VÝZVY – METODIKA – DOPORUČENÍ

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New Psychoactive Substances among People Who Use Drugs Heavily (PUDH): challenges and effective responses for harm reduction services in Europe

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BACKGROUND: This article describes the set-up, the methodology and the outcomes of the local interventions and responses in five European countries (Greece, Poland, the Czech Republic, Romania and Portugal), which were carried out within the framework of the 'NPS in Europe Project'. AIM: The article provides information on the practical interventions on a local level. It specifies how the project partners planned, organised and monitored their practical interventions and how the research findings were directly translated into action. METHODOLOGY: To plan, organise and monitor the local interventions a specific methodology was developed which stratified problems and needs into different levels, including the physical, social, policy and economic levels. RESULTS: One of the main conclusions is that the implementation of effective interventions is often impeded by legal restrictions: an increasing number of NPS ends up on the list of forbidden substances, which contributes to an increase in the number of new unknown substances with unknown health risks. On the individual level it can be stated that NPS are often used because they are not (yet) controlled by the UN Drug Convention and are easy to access, but they are not necessarily the drug of first choice. The RAR surveys and the interventions in the five countries also showed that service providers, such as drug services and harm reduction organisations, as well as NPS users, lack essential information about NPS use, the associated effects and the risks posed by the various drugs and do not know which kind of harm reduction messages should be promoted among PUDH. Last but not least. there is a clear indication in all five of these European countries that there is resistance on a political level to investing in harm reduction interventions in the field of NPS. CONCLUSIONS: The methodological approach, as well as the results of the interventions, can be used as guidance and a model of good practice by drug services which want to develop effective harm reduction interventions in the field of NPS use.

KEY WORDS: NPS IN EUROPE – PEOPLE WHO USE DRUGS HEAVILY – RAR – PRACTICE – LOCAL INTERVENTION – BARRIERS AND CHALLENGES – METHODOLOGY – RECOMMENDATIONS

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1 INTRODUCTION

The basic principle of the 'NPS in Europe' project was to combine research elements and practical interventions and to bring research findings directly into practice, in order to gain added value on a practical level right away. This was realised by carrying out an RAR survey and by implementing appropriate responses based on the outcomes of the RAR. The RAR and the interventions were implemented on a local level in five European countries (Greece, Poland, the Czech Republic, Romania and Portugal).

An integrated research-practice approach ensures close cooperation between researchers, professionals and peers. Too often research activities are organised in a way that is isolated from the level of practice, without including the experience and expertise of community services. As a consequence, outcomes and findings are not necessarily connected to practice and cannot be transferred into practical interventions.

One of the cornerstones of the 'NPS in Europe' project was the close cooperation with the local partners. Activities and interventions had to be feasible and had to fit the needs and the resources on the local level. The research was carried out by the local partners themselves: a desk review of the national situation was carried out, the NPS availability of the online and offline markets was analysed and focus groups with People Who Use Drugs Heavily (PUDH) and professionals were organised. The staff were trained and received a manual to support the various research activities.

On the basis of the outcomes of the RAR survey, the local partners developed a strategy to respond to the challenges with regard to NPS use. Different interventions were carried out, monitored and evaluated. An Intervention Guide was developed to support the local partners during this process. Supervision and support were provided in order to safeguard the process.

This article will briefly highlight the main outcomes of the intervention phase, analyse the overall challenges and give an overview of the national and local findings. On the basis of these experiences, some overall conclusions are drawn which can support and improve future interventions.

2 METHODOLOGY OF THE IMPLEMENTATION PHASE

After the RAR study, which was carried out in Greece, Poland, the Czech Republic, Romania and Portugal, all the local partners summarised and analysed their findings. The partners were urged to stratify their problems and needs into different levels, including the physical, social, policy and economic levels. In practice, this stratifying approach worked well. The partners were challenged to differentiate problems and needs and to develop a set of interventions targeting different levels.

In addition to that, potential barriers were assessed, as well as solutions which could help to overcome these barriers. Through doing this, the partners were able to anticipate potential barriers directly and minimise the risk of unexpected problems. (*Table 1.*)

The local partners were also asked to compile a list of relevant stakeholders and to describe their role during the implementation phase. These stakeholders were approached at the very beginning of the project to ensure their full commitment. (*Table 2.)*

Last but not least, the local partners were responsible for monitoring their interventions by filling in a log frame matrix. This matrix was updated once a month and shared and discussed with the person who supervised the local interventions in all five countries. Relevant information was shared between the local partners to stimulate mutual learning. (*Table 3.*)

The implementation phase had a duration of eight months. After finalising the interventions, all the local partners compiled an Implementation Report, which included a description of the main problems and needs, the various interventions, the barriers during the implementation phase and recommendations for follow-up activities on the national and local levels.

To share the knowledge, expertise and lessons learned, all the local partners organised national training sessions for relevant stakeholders in the field.

3 PROBLEMS AND RESPONSES BY COUNTRY

Greece

Greece is currently facing the disastrous consequences of the financial crisis and the austerity measures. Youth unemployment is close to 60% and homelessness has increased by 25% since 2009. Because of the austerity measures, the Greek government has had to reduce public health investments to 6% of GDP (which is 3% less than the ECOSOC average). Social and welfare programmes have been cut down by 40%.

KEELPNO reports that Greece has approximately 25,000 drug users, of whom 10,000 live in Athens. However, outreach and harm reduction services have only limited resources to provide sufficient social and health services to drug users. The most popular drug is heroin.

There is no data available which can give us the extent of NPS use among PUDH in Greece. This means that all the information that is available on NPS is mainly derived from seizures.

The most popular drugs in Greece are currently Shisha (methamphetamine in crystalline form, widely used on the open drug scenes in Athens) and two categories of NPS: synthetic cannabinoids and synthetic cathinones.

Table 1 / Tabulka 1
From Problem to Response
Od identifikace problému k jeho řešení

Level of intervention	Problems and needs	Objectives and aims	Proposed interventions	Expected Barriers	Solutions to overcome barriers
Physical					
Social					
Policy					
Economic					

Table 1 assesses the problems and needs and describes the objectives and the planning of the intervention.
Tabulka 1 obsahuje přehled identifikovaných problémů a potřeb a popis cílů a plánování intervencí.

Table 2 / Tabulka 2
Relevant Stakeholders
Hlavní aktéři

Response Level	Stakeholders	Role of the stakeholders
Physical level		
Social Level		
Policy Level		
Economic Level		

Table 2 gives an overview of the relevant stakeholders on the local and national levels and also describes their specific roles during the intervention.
Tabulka 2 obsahuje přehled hlavních aktérů na místní a celostátní úrovni a popisuje současně jejich konkrétní roli v rámci realizace intervencí.

Table 3 / Tabulka 3
Log Frame Matrix
Matice logického rámce

Overall objective: …..			
Objectives	**Activities**	**Indicators**	**Assessment**

Table 3 is the log frame matrix, which clearly describes the objectives, the activities and the indicators. A separate assessment row describes the progress of the activities and monitors problems and delays.
Tabulka 3 představuje matici logického rámce, která přehledně popisuje jednotlivé cíle, aktivity a indikátory. Poslední sloupec pak slouží k průběžnému vyhodnocování aktivit a monitorování problémů a prodlev při jejich realizaci.

Shisha is not an NPS, but was very popular for 2–3 years (2011–2013) and mainly because of the extremely low price (€1–3 per dose). It is an amphetamine-based drug mixed with liquids (e.g. battery liquid) and is called the 'cocaine of the poor'. It is mainly smoked (80%) or injected (20%). The other NPS are mostly popular because it is very easy to purchase them. There is no information about Greek online shops selling NPS. There is at least one mini-market selling NPS in Northern Greece.

The growing popularity of Shisha has caused many social and health problems among PUDH. Reported side effects of using Shisha include frequent psychotic incidents, loss of weight, internal burning and open wounds in the body and in the mouth, insomnia, sexual over-stimulation and violence. Because of the negative connotations associated with the use of Shisha, users have become more careful and use less Shisha. The producers realised that. The new Shisha has a better quality and prices have also increased to €3–6 per dose.

The use of Shisha could not be directly linked to the increase of HIV and HCV diagnoses among PUDH in Athens. Nevertheless, it is obvious that Harm Reduction interventions should be adjusted more to the smoked use of Shisha. TB and other respiratory diseases were never mentioned either by the PUDH or by the professionals. As one of the effects of Shisha is sexual over-stimulation, the widespread distribution of condoms seems important.

Praksis, the local partner which was responsible for the RAR survey and the implementation phase in Greece, developed and implemented the following set of interventions:

- focus group session with PUDH to collect information, develop effective interventions and engage PUDH in the activities of Praksis;
- informing national policy makers about the situation concerning PUDH and Shisha in particular to advocate support for effective harm reduction policies;
- informing representatives of the local authorities in Athens about the situation concerning PUDH and Shisha to reinforce effective local harm reduction interventions.

Because of the chaotic political situation in Greece, it has become almost impossible to address the issue of Shisha and the need for harm reduction services on the local and national levels. Policy makers, as well as the contact persons within the local authorities, have been changing constantly. The political discussion on leaving the eurozone, the various referenda and the national elections have made any other discussion irrelevant. In addition to that, most outreach programmes on the national level have stopped because of a lack of funding.

As a result of these barriers on the policy level, the interventions of Praksis mainly focused on the improvement of the social and physical well-being of drug users. The focus group sessions with PUDH helped to analyse and understand the specific problems of Shisha users in Athens. The organisation strives for a stronger involvement of PUDH in the development and implementation of interventions. A skill-building session on peer involvement strategies has been organised for staff within Praksis.

Portugal

NPS use among PUDH is rather exceptional in Portugal. NPS are mostly used by young people in recreational and experimental settings. Studies have shown that only 0.4% of the general public have tried NPS, while NPS use among young people is more prevalent, with lifetime use being 29% and last year prevalence 19% (The Gallup Organisation, 2011; Balsa et al., 2013). Curiosity and the will to experiment are important reasons why young people choose NPS. During the focus group sessions it was stressed that the accessibility and availability of substances are important. If traditional drugs such as cannabis, cocaine and MDMA were less available, people chose NPS as a substitute. If traditional drugs were more available, fewer NPS were used. Traditional drugs seem to be preferred. The main reasons for that were negative experiences with NPS, such as aggression, anxiety and intoxication.

NPS use has always strongly been linked to the existence of smart shops (since 2007). In 2013 smart shops were banned. The NPS market changed. Online shops do exist and sell different kinds of NPS. Since the ban on smart shops fewer people have been admitted to emergency services. However, there is criticism of this intervention. The market is ever-changing and there is only limited control over what is being sold.

APDES, the local partner in Portugal, has developed a multi-layered intervention, including the following elements:

1/ Development and implementation of the NETreach work strategy – an online outreach strategy with the idea of providing online and offline harm reduction services to hard-to-reach groups via the internet. The NETreach strategy was developed at the very beginning of the project. The implementing team was trained according to a specific training manual, in a number of areas, including:

- NPS, the dark web, peer-led online communities;
- best practices in NETreach work, websites with updated information about NPS and drug-checking results;
- NETreach work: strategies to intervene online through one-dimensional (providing updated information on the website and social network pages), two-dimensional (e-counselling though mail and Facebook messages) and three-dimensional platforms (intervention in forums);
- Netnography and other methodologies to observe online dynamics and evaluate the intervention.

2/ Empowerment and networking on a local level, by sharing practical tools and by reinforcing communication structures. In total, four network meetings were organised: two in Viseu (N=10) and two in Lisbon (N=20). During the meetings the Local Pass Toolkit[1] was presented. The participants in the meetings were interested in implementing the tool. It was agreed that the participants would collect information on new drug trends in their local context. This information was shared and discussed during the second meeting.

3/ Create awareness among policy makers to promote effective harm reduction services, targeting NPS users. Policy makers were invited to the NETreach work training sessions to increase knowledge and raise awareness of effective NPS harm reduction strategies.

4/ Investigate (offline and online) drug markets, in order to enhance warning systems and information pathways between relevant stakeholders in the field:

1/ The Local Pass Toolkit has been developed within the framework of the European Local Pass project; www.localpass.eu

- The implementation team monitors the offline and online markets through drug checking and the T.E.D.I. network. Exchange and discussions are organised once a month to keep staff members up to date.
- The local partner in Portugal managed to develop and implement interventions on different levels and increased knowledge and awareness among the relevant stakeholders. The cooperation and networking structures were enhanced.

Barriers were experienced when it came to the monitoring part. The NPS market is changing quickly and it needs a considerable amount of time to stay updated. The groups of NPS users are online as well and therefore are difficult to reach. The NETreach strategy is an effective strategy, but needs to be implemented on a broader level. Another problem which was mentioned is the fact that health and emergency services are insufficiently informed about the effects of NPS, which makes it difficult for them to intervene in cases of emergency.

Poland

The number of NPS users in the overall population is rather low: 1.4%– 2% in the 15–64 age group. The prevalence of NPS use among young people between 20–24 years is 8%. There is no information available about NPS use among PUDH.

NPS were introduced onto the legal market in Poland as 'collectors' items, which are not for human consumption'. The first smart shops appeared in 2009 (42 shops). In July 2010 there were already 260 shops and in October 2010 the Sanitary Inspection closed more than 1300 shops (Sienawska, 2013). Since then the NPS market has mainly been online. There are online shops selling research chemicals which pretend to be professional sites for chemists. In addition there are online smart shops with colourful advertisements, selling products, mixtures and plant-based substances with fancy names. There are also a few offline shops which are known for selling NPS. Because of their unclear legal status these shops change their location regularly and buyers have to be known by the staff. NPS are also sold in specialised shops, such as sex shops, small gambling venues, and shops for bodybuilders.

PUDH use NPS because of the availability of the substances, as well as their legal status. Those who are in substitution treatment prefer NPS because they cannot be traced in urine tests. It also appears that there are quite a number of shops selling NPS near methadone treatment programmes.

The number of non-fatal overdoses has doubled in the past two years. It is unclear which substances caused the overdoses. NPS use differs greatly between the various regions of Poland and the lack of information might cause data poisoning to some extent. The regional differences are also due to non-uniform data collection methods.

Similarly to other countries in Europe, the government is constantly expanding the list of prohibited substances. Currently, there are 114 NPS listed, which will be approved by the government in 2015. Legal loopholes which make it possible to import NPS will be closed.

Monar, the local partner within Poland, developed and implemented a series of interventions, targeting different levels:

- increase the knowledge among professionals about NPS use and the related risks (including the link between NPS and risky sexual behaviour), by providing information and training;
- increase the knowledge among PUDH about NPS use and the related risks (including the link between NPS and risky sexual behaviour) by giving easy access to the internet, by organising focus groups and by training peers;
- increase knowledge and awareness among local policy makers with regard to NPS use and the need to develop effective HR services by organising several meetings with different contact persons and departments of the City Hall;
- develop new sources of information on NPS and harm reduction by developing sub-websites and by updating them regularly;
- advocacy activities to encourage and stimulate a more evidence-informed and rational policy approach by writing regular comments and articles;
- contribute to an improvement of the current Early Warning System in Poland by discussing the outcomes of the RAR Report with the head of the Polish Reitox Focal Point.

By developing diverse levels of interventions Monar managed to tackle the issue of NPS use from different angles. On the basis of the RAR Report and the related interventions, a number of relevant lessons could be drawn. Good communication between professionals, peers and researchers is a condition for interventions which combine research and practice elements.

Professionals and peers lack knowledge. Not much is known about the different substances, the effects and the associated risks. This applies to NPS users too. Interventions in Poland should definitely focus on providing information and training. Online information sources should become available and need to be updated regularly. Cooperation with the Reitox Focal Point is therefore essential and can contribute to an improved Early Warning System.

Romania

Drug consumption in Romania, and especially in Bucharest, has changed rapidly in recent years. The consumption of cocaine, heroin and cannabis has stabilised or decreased, while the illicit use of prescription opiates and new synthetic drugs has increased.

It is nearly impossible to give accurate information on drug use and NPS use in particular in Romania, because harm reduction and drug services are nearly non-existent and under-developed outside Bucharest.

In Romania NPS became popular in 2009. The most popular NPS are mephedrone, synthetic cathinones and synthetic cannabinoids. In general PUDH do not use synthetic cannabinoids, but stick to stimulants, which they inject. NPS are often mixed with traditional drugs, such as heroin. The reasons for switching from heroin to NPS were their legal status, availability and accessibility and the bad quality of the heroin.

Because of the short intoxication period the frequency of injecting among injecting NPS users is extremely high: 72% inject more than five times a day. Many users report that they inject more than 25 times a day, which increases the risk of HIV and Hepatitis C infections, in particular because there is a lack of needle exchange programmes in Bucharest. The prevalence of HIV among NPS users is 71%, compared to 39% among heroin users (based on a study in 2012 in Bucharest). The available evidence suggests a link between the high frequency of injecting and the increased number of HIV infections.

Other health-related problems which are reported by NPS users are anxiety, psychotic behaviour, insomnia, physical exhaustion and panic attacks. These side effects were reported by many users. It is unclear which kinds of substances are being used, as NPS are generally sold as 'legal highs'. Because of their negative experiences with NPS, quite a number of PUDH switched back to heroin again.

Carusel, the local partner in Bucharest, implemented a number of interventions to address the problems which were assessed in the RAR survey. The activities mainly focused directly on PUDH. Training sessions were organised to inform NPS users about safe injecting practices, harm reduction, overdose management and panic attacks. In addition, five peer educators were recruited and trained to provide information and harm reduction strategies to their peers.

One of the most important lessons learned is that PUDH who inject NPS have developed their own methods to control their drug use and to minimise risk behaviour. One of the users, for example, stated that he always splits his drug into very small portions. He injects small doses every 10 minutes. After having used the first half, he leaves the place and goes somewhere to cool down. By doing so he can save a portion for later and avoids panic attacks at the same time. By collecting and sharing these stories other users can learn about effective self-control mechanisms and experiment with them.

The trained peers were able to transfer their newly gained knowledge directly into practice. One of the peers managed an overdose and was able to save the life of a friend soon after the training. This increases the credibility of the peers among users.

An important barrier in providing HR services to NPS users is the lack of resources and manpower. Harm reduction services lack essential materials (e.g. good-quality needles), as well as outreach workers and peers. PUDH in Bucharest are widely spread and hang out in different parts of the city (each spot has a different group of users and different patterns of use). This requires knowledge of the drug-using community, as well as credibility and trust, which needs to be built up carefully.

Peers can play an important role in overcoming this problem. The peer education programme should therefore be extended and continued.

Czech Republic

NPS appeared in the Czech Republic in 2009. Among PUDH cathinones (mainly in Prague) and opiate medications (mainly in Pilsen) became popular. In Prague PUDH started to switch from injecting methamphetamine to mephedrone and cathinones.

The appearance of NPS in 2009 was closely associated with the launch of the online market and the smart shops. NPS are also sold in brick-and-mortar shops. After a change in the legislation in 2011 33 new substances were added to the list of forbidden narcotic substances. Smart shops were closed down. NPS became less available and PUDH switched back again to injecting methamphetamine. There has been a declining trend of PUDH injecting NPS since 2011. Most PUDH think that NPS are dangerous and inferior to methamphetamine.

In Pilsen (Western Bohemia) a different trend can be observed. Since 2012 the injection of opioid painkillers, such as Fentanyl and Vendal Retard, has become popular among PUDH. More than 23% of the PUDH in Pilsen inject Fentanyl patches, compared to 5.1% of the PUDH in the whole republic.

Sananim, the local partner in Prague, implemented a number of interventions on different levels, including:

- harm reduction activities and campaigns targeting NPS users by publishing regular articles on NPS use in the 'Dekontanimace' Magazine (a magazine for drug users with 6000 readers);
- training and capacity building for professionals and peers working with NPS users – a summer school and a seminar on NPS;

- development and implementation of peer-driven intervention among NPS users;
- collecting information on NPS use and associated risks and updating the information on www.edekontaminace.cz;
- preparing and organising policy dialogue meetings with the National Focal Point in order to improve the Early Warning System;
- preparing a summary of the RAR Report and presenting the outcomes and conclusions to relevant policymakers, politicians and police officers.

The activities of Sananim were carried out on different intervention levels. A broad range of stakeholders was included in the activities. The summer school and the NPS seminar attracted a large group of professionals and peers. It proved possible to involve the policymaking level and it will be regularly updated on the situation of NPS users. Most importantly, Sananim managed to set up a peer-driven intervention, which was proved to work. This might stimulate other harm reduction services in the Czech Republic to develop and implement peer work.

4 PROBLEMS AND BARRIERS TO DEVELOPING AND IMPLEMENTING EFFECTIVE RESPONSES

When the situation in the various countries is analysed, a number of common characteristics can be identified.

4 / 1 NPS are not necessarily the first choice

The growing popularity of NPS must be seen in direct conjunction with the criminalisation of traditional drugs, such as heroin, cocaine, amphetamines, cannabis and MDMA. Research has indicated that many users switched to NPS because of their availability, legal status and the costs of the particular substance (Global Drug Survey 2015). This does not necessarily mean that NPS are less harmful than traditional drugs. The rate of those seeking emergency medical treatment was in some cases three times higher among NPS users (especially among those who used synthetic cannabinoids). In other words, NPS are not specifically preferred, but are cheaper and easier to get.

4 / 2 NPS start as legal highs, but most often end up on the list of forbidden narcotic substances

This has a proven effect on the availability of the substance and might result in a decreasing use of this specific substance. Nevertheless, the forbidden substances are still available via the online market or drug dealers, together with a huge number of new NPS, including mixtures of new substances, with appealing new names and without clear information on their effects and the health risks they pose. Thus, although the prohibition of NPS might have short-term effects on the availability of certain drugs, it contributes to a balloon effect and stimulates the constant development of new substances with different ingredients and unknown potential risks. This balloon effect also makes it much more difficult to monitor NPS use, to develop effective HR and prevention strategies and to inform users on potential risks in a timely and adequate manner.

4 / 3 The prohibition of smart shops has made NPS less available, but also creates a loss of opportunities

The disappearance of smart shops made NPS less available, but at the same time increased the number of online sites which sell NPS throughout Europe. The smart shops, however, at least offered the opportunity to monitor NPS use and to apply prevention and harm reduction in close cooperation with their owners. Online NPS shops are less approachable and it is more difficult to engage them in harm reduction interventions.

4 / 4 Increased risk behaviour

In some countries a clear link between NPS use and increased risk behaviour was found. In Romania the prevalence of HIV among IDU increased significantly after PUDH switched to NPS use (NPS users in Bucharest often inject NPS more than 20 times a day). HR services need to be aware of these impeding factors and should be ready to adapt their services and interventions to these realities.

4 / 5 Lack of knowledge and information among professionals, peers and NPS users

The RAR survey indicated a clear lack of information among professionals, peers and NPS users. It is often unclear what kinds of substances are being used and what kinds of effects are linked to the use of the different NPS. In Romania all NPS are called legal highs and users do not know at all what they are buying. Laboratory research is only carried out sporadically, but would help to give an understanding of certain patterns of use.

4 / 6 Lack of effective strategies to reach hard-to-reach NPS users

A large group of NPS users is hard to reach. This applies in particular since NPS are sold via the online market. If users are not yet known to HR services, new approaches are needed to get into contact with the target group. Internet-based support and information services are needed.

4 / 7 Cooperation between relevant players in the field

Researchers and practitioners often work in isolation from each other. Researchers are seen as unwelcome invaders, sucking information and knowledge out of professionals and PWUDs. Meanwhile, researchers experience the interference of professionals and community members as obstructing and disturbing.

4 / 8 Non-functioning Early Warning System

All the local project partners mentioned that the (European) Early Warning System is not helpful for their daily work. The constant increase in the numbers of new drugs requires a quick and flexible system, linking outreach and field workers to the newest information.

4 / 9 Lack of political will, funding and resources to invest in harm reduction services targeting NPS use

The RAR survey indicated that HR services are underfunded. NPS have a certain priority when it comes to drug prevention measures, which might partly be due to the fact that many users are relatively young. Myths about the effects of NPS – often driven by the mass media – cause hysteria and stand in the way of a rational and evidence-informed policy towards NPS. Policy makers are wary about supporting harm reduction in connection with this group and do not provide sufficient resources to provide sufficient and effective HR services for NPS users.

5 RECOMMENDATIONS AND CONCLUSIONS

On the basis of the outcomes of the RAR survey and the barriers to an effective response that were identified, a number of recommendations and conclusions can be drawn.

- The decriminalisation and regulation of traditional and new drugs and substances should be part of an effective drug policy. This applies in particular when NPS are more harmful than traditional drugs.
- The Early Warning System needs to be improved. Communication structures must stimulate HR services to share their observations. Warnings from the Reitox Focal Point should be shared directly with HR services.
- Low-threshold drug checking is needed! It will help NPS users to make responsible decisions and support HR services in their interventions.
- Monitoring of the NPS market and the new drug trends is essential to develop effective policies and HR strategies.
- HR services must be sustained and extended with specific HR interventions, such as online outreach.
- Better cooperation between the research and practice levels will support the development and implementation of evidence-based interventions. Equality, transparency and a common approach can contribute to an increased knowledge base and more evidence-informed interventions. This applies in particular to NPS, where hysteria and myths emerge frequently.
- Regular training for professionals and peers needs to be organised on a local level, including information on new drug trends, new substances, the effects of different NPS, overdose prevention, etc.
- Peer intervention programmes must be stimulated and set up. It is clear that peers can play an important role in approaching hard-to-reach groups, in monitoring drug trends and in providing HR services.
- Self-control mechanisms should be stimulated among NPS users, as they can contribute to their health literacy and empowerment.

The role of the authors: Katrin Schiffer and Eberhard Schatz are project coordinators within the De Regenboog Groep and coordinate Correlation – the European Network for Social Inclusion & Health. Both authors actively participated as work package coordinators in the 'NPS in Europe' Project. They were responsible for developing and monitoring the practical interventions in the five European countries. They provided practical support and guidance to the local partners and supported the evaluation of the interventions on a local level. Furthermore, they were actively involved in the dissemination activities and the capacity-building elements within the project. Both authors approved the final version of the manuscript.

The article was based on the input and the documentation of the local partners:

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tických intervencí v pěti evropských zemích. Poskytovali praktickou podporu a metodické vedení partnerům v jednotlivých státech a zajišťovali rovněž podporu při evaluaci intervencí realizovaných na místní úrovni. Současně se aktivně podíleli na komponentech projektu věnovaných šíření aktivit a budování kapacit. Oba autoři schválili konečnou podobu rukopisu.

Článek čerpá z podkladů a dokumentace poskytnuté jednotlivými partnery projektu, jimiž byli:

- *APDES (Portugalsko): Costa, Ana; Pires, Cristiana; Queiroz, Jose; Oliveira, Maria João; Rodrigues Cláudia; Valente, Helena; Martins, Daniel*
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Konflikt zájmů: *Bez konfliktu zájmů.*

Netreach: realizace „terénních“ intervencí zaměřených na minimalizaci rizik z užívání drog v prostředí internetu

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SOUHRN: *Proces globalizace a nové technologie umožnily nástup emancipovaných a globálních drogových kultur fungujících v prostředí internetu a současně ovlivnily způsob, jímž lidé kupují a užívají drogy, vyhledávají si informace o drogách a vyměňují si s ostatním uživateli své zkušenosti a poznatky týkající se jejich užívání. Nová realita skýtá rovněž nové možnosti intervencí a odborníci na oblast minimalizace rizik (harm reduction) by měli disponovat takovými prostředky, aby byli schopni na novou situaci adekvátně reagovat. Tato práce prezentuje koncept terénních intervencí "netreach", jenž má poskytnout rámec pro aplikaci filozofie a praxe harm reduction a terénní práce na prostředí internetu. Představeny a popsány jsou zde dvě intervence typu „netreach": intervence zaměřená na minimalizaci rizik, kterou realizuje dr. Fernando Caudevilla jako Doktor X v rámci diskusních fór na prodejních portálech v prostředí deep webu, a intervence zaměřená na „terénní práci" v prostředí internetu, zejména její plánování a dosavadní zkušenosti s její implementací, realizovaná organizací Agęncia Piaget para o Desenvolvimento – APDES – v rámci evropského projektu „Nové psychoaktivní látky mezi intenzivními uživateli drog". Tyto intervence mají potenciál proniknout k internetové komunitě uživatelů drog. Mohou být v tomto smyslu doplňkovou metodikou, která obohatí terénní intervence a zareaguje odpovídajícím způsobem na výzvy, které představují nové psychoaktivní látky a rozvoj technologií.*

KLÍČOVÁ SLOVA: INTERNET – TERÉNNÍ PRÁCE V PROSTŘEDÍ INTERNETU (NETREACH WORK) – MINIMALIZACE RIZIK (HARM REDUCTION) – DROGOVÉ KULTURY NA INTERNETU

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Netreach Work: Implementing Web-based Harm Reduction Interventions with Online Drug Users

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SUMMARY: The globalisation process and new technologies paved the way for the emergence of empowered and global online drug cultures and shaped the way people purchase and use drugs, search for drug information, and discuss and share drug use practices and knowledge with their peers. This growing reality is opening up a new field of intervention, and harm reduction professionals should equip themselves to respond to this reality. This paper presents "netreach work" as an intervention framework that adapts the harm reduction and outreach philosophy and practices to the online environment. Two netreach interventions are presented and described: the harm reduction intervention of Fernando Caudevilla as Doctor X in the Deep Web marketplace forums and the planning and experience of the netreach intervention of Agęncia Piaget para o Desenvolvimento – APDES – under the European project "New Psychoactive Substances (NPS) among Problem Drug Users". These interventions have the potential to reach online drug users. In this sense they can be a complementary methodology to enrich the outreach interventions and to respond to the challenges posed by both NPS and technological developments.

KEY WORDS: INTERNET – NETREACH WORK – HARM REDUCTION – ONLINE DRUG CULTURES

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1 INTRODUCTION

In the last decade the purchasing of drugs and the demand for them have been changing and have been strongly influenced by technological advances, especially the internet, that allow the democratization of information, knowledge exchange, and also new online drug marketplaces.

Barratt (2011) reported that among the group of people who use drugs, the subgroup of partygoers is more connected with technology, both offline – through electronic dance events in order to enhance the clubbing experience – and online – through the use of the internet. In the 1990s several websites and discussion forums (e.g. Erowid and Bluelight) emerged that advocated the right to use drugs and to obtain credible information about drugs (Powers, 2014, Barratt, 2011). In this sense, the internet enabled the emergence of online drug cultures – a set of practices that exist in the mediated interplay of micro-level interactions and macro-level social processes (Milner, 2011: 16).

In the last decade the role of the internet as a platform for buying and selling drugs has been increasing (Barratt, 2012). Currently, online marketplaces located in the Deep Web – the intentionally hidden part of the internet, not accessible through regular search engines (Mounteney et al., 2015) – are challenging the supply and demand of drugs. These markets are following the example of other online marketplaces (e.g. e-Bay) by depersonalizing the seller-buyer relationship, protecting the transaction by the use of cryptocurrency, and making it possible for the users to participate in the evaluation of the quality of the drugs they buy. The rise of these online drug markets led to the "empowerment of online communities where users could discuss drugs, share information and document personal experiences" (Pires et al., 2015: 60). Considering this, the third role of the internet is to allow online social interaction – specifically in discussion forums. "Internet forums are produced and reproduced as places where people are continually defining and negotiating cultural understandings and meanings" (Barratt, 2011: 184). Here the discourses of informed drug use are extensively used, reinforcing the acceptability and normalization of the behaviours and moving away from other kinds of drug use defined as problematic by these cybernauts. Denouncing the neoliberal value of self-control, harm reduction discourses are constant in these spaces, and enable an informed drug user to feel supported and develop a sense of belonging (Barratt, 2011, Soussan and Kjellgren, 2014; Móró and Rácz, 2013). However, it is important to highlight the fact that these online dynamics do not necessarily reduce the harms related to drug use (Barratt, 2011).

2 NETREACH WORK: HARM REDUCTION IS GOING ONLINE

This paper intends to explore the potential of netreach work – web-based harm reduction as an intervention strategy to intervene with online drug users. Harm reduction can be defined as "policies, programmes and practices that aim to reduce the harms associated with the use of psychoactive drugs in people unable or unwilling to stop" (Harm Reduction International, 2015). The innovation of netreach work is the embracing of the internet and technology as intervention tools, since the harm reduction principles are still relevant.

Internet drug forums can be suitable environments in which to provide harm reduction information to drug users. In this space, netreach work has the potential to bridge the gaps that exist between professional and peer-led harm reduction initiatives, especially among online recreational drug users (Pires et al., 2015). Specifically regarding new psychoactive substances (NPS), the EMCDDA (2015:64) reported that "the Internet is also increasingly important as a platform for the provision of information and counselling. One development has been the use of "online-outreach" interventions to reach the new target groups. Examples include drug user-led initiatives, such as forums and blogs, which provide consumer protection information and advice."

In 2009, the EMCDDA released a report describing some of the web-based initiatives implemented in Europe, and reported that this approach had the potential to reach users in their private settings. However, it was concluded that more research was needed to measure the effectiveness of such web-based approaches. In 2015, Pires et al. mapped and described some of the netreach initiatives implemented in Europe, for example self-assessment tests, peer-led discussion forums, mobile device applications (apps), etc. They concluded that the majority of these interventions are implemented by professionals working in teams and organizations intervening with drug users in party settings, reinforcing the idea that this target group has a higher level of engagement with technology when compared with other drug users' communities. These teams go online and target drug users and provide harm reduction information and counselling, information about offline health services, and alerts and warnings about dangerous substances or adulteration patterns.

To illustrate netreach work, we will describe two web-based harm reduction interventions that can be considered innovative:

- an intervention implemented by Fernando Caudevilla (aka Doctor X) in DarkNet forums. This is an innovative intervention mainly because it was implemented by a physician, a drug expert, in drug discussion forums on the Deep Web.

- an intervention implemented by APDES under the EU-funded project "NPS in Europe". This intervention was innovative since it tried to target specifically NPS users and also because it was designed to be an action research intervention in order to intervene directly with drug users while evaluating the suitability, effectiveness, and impact of the strategy.

2 / 1 Dr. X – season in Deep Web forums

Fernando Caudevilla has been running threads in drugs forums located on the Deep Web and associated with Deep Web marketplaces (such as Silk Road, Silk Road 2.0, and Evolution Marketplace). On these sites he was participating in threads about Drugs and Health, presenting himself as Doctor X, an online professional able to provide reliable information and advise drug users from a harm reduction perspective ("Ask a Drug Expert Physician about Drugs and Health"). In a very short period of time, this thread became one of the most popular in the Silk Road forum. During a 22-month period, by 3 February 2015, Doctor X had received 136,407 visits and answered 1,146 questions: 931 in the public forum, accessible to any visitor, and 215 as private messages from people who, for whatever reasons, wanted to ask their questions with more intimacy. The majority of the questions received were about traditional drugs (such as MDMA, cocaine, and cannabis), but there were also questions about NPS.

"*When taking NBomes my girlfriend gets red splotches on her face, legs, neck, back, and stomach (vasoconstriction). It usually happens towards the end of the trip and gets worse when we stay up and trip all night, usually redosing once. The tabs are no more than 1200ug each. Is there a reason this happens to her and not me? Is there any way to help with this? I know it is not life-threatening unless it gets really bad and she gets stuck in her pants or something. But I keep her out of her pants a lot so that's no worry lol. But seriously. She is also anaemic; does this have anything to do with it? Now that I think about it, it has happened with MDMA, and it happened on M1 as well, I think (which was sent to me as MDMA)*" (Evolution Forum, 12 December 2014).

Considering the questions received, Fernando Caudevilla was able to provide information about drug use, pharmacological interaction, the risks of drug use in particular conditions (contraindications), toxicity, and harm reduction measures.

The experience of a drug information and counselling service in Deep Web marketplace forums, provided by a professional physician specializing in drugs and harm reduction, is an opportunity to reach drug users in the places where they are.

2 / 2 APDES' pilot netreach intervention

Besides coordinating the European project "NPS in Europe", APDES was also one of the implementing partners.[1] The implementing partners should be involved in two phases of the project implementation, specifically the local implementation of the Rapid Assessment & Response (RAR)[2] to assess the local realities in terms of the supply and demand of NPS, followed by the implementation of a pilot intervention to respond to the needs and target groups that had previously been identified. In Portugal, APDES used this multi-mixed methodology and implemented focus groups in Lisbon and Oporto. These focus groups targeted professionals and peers working with PUDH or other populations (such as recreational drug users and men who have sex with men). The analysis of the focus groups demonstrated that drug users still prefer more traditional drugs. The use of NPS was more significant when the smartshops were open, mainly because of their physical availability, legal status, and the belief that they were more secure and pure. However, several NPS users reported negative experiences using these drugs, and as they have good access to their drugs of choice (mainly MDMA, cocaine, and cannabis), they do not need to search for substitutes. Additionally, because of the Portuguese decriminalization model, users reported that they did not need to be creative to find legal substitutes. After the closedown of the smartshops, therefore, NPS use diminished, not only because of the reform of the law but especially because of the perceived availability and quality of more traditional drugs. However, NPS did not disappear: there is a group of drug users, especially psychonauts, who intentionally seek and use these drugs.

After the RAR, the pilot intervention, netreach work, intended to reach and intervene with these users was launched. Its implementation comprised the following phases:

- Netreach training: APDES defined the CHECK!N team – a Portuguese outreach team working in the party setting which would be responsible for the implementation of this pilot intervention. Composed of six outreach professionals, this team attended a 12-hour training session focused on NPS, online drug communities, the Deep Web, and the specific features of netreach work. Given his expertise, Fernando Caudevilla also provided the implementing team with two hours of online training;
- Needs assessment: the implementing team had to identify all the Portuguese forums with threads fo-

1/ The other implementing partners were: Sanamin (Czech Republic), Monar (Poland), Carusel (Romania), and Praksis (Greece).

2/ This methodology was created by Jean-Paul Grund, in close collaboration with the Department of Addictology at Charles University (Czech Republic).

cused on drug use, and specifically on NPS use, and describe each of them in ethnographic terms. A total of eight forums were identified: two forums specialized in one or several drugs; the others were focused on trance music or general issues;

- Implementation: each implementer had to intervene in one or two forums, feeding some of the discussions with information and harm reduction messages, or creating new discussion topics related to NPS and harm reduction. However, three months is not enough time to draw conclusions about the outcomes of the intervention;
- Evaluation: the evaluation was focused on the learning outcomes of the implementation team, and also their professional perception of the relevance, utility, potential, and limitations of netreach work. This evaluation combined online ethnographic data with a focus group with the implementing team.

Concerning the evaluation, the implementing team considered this experience enriching and believe that this is an effective approach to reaching people who would otherwise remain hidden: people using drugs in their private settings or searching for drug-related information online. However, they argued that three months is not enough time to create and implement a consistent netreach strategy. They also highlighted the fact that resources such as funding and knowledge (about NPS, dosage, effects, contraindications, etc.) are needed to connect with online drug users and to be considered a reliable source of information. "*The CHECK!N team is clearly in an advantageous position to do it. But bigger investment would be necessary (...) this would require much time, money, and knowledge in many areas*" (FG excerpt, PM, 2015).

Since the Portuguese forums have low levels of participation, the implementers felt the necessity to go global. "(…) *It makes perfect sense to do netreach on a global scale, not specifically by country. Our perception is that users go to international forums and not to Portuguese forums*" (FG excerpt, ID, 2015).

Finally, the implementers considered that it made no sense to implement netreach activities targeting only NPS users. They should also address drug users in general.

3 DISCUSSION

These "virtual outreach techniques" – defined in this paper as netreach work – are perceived as reliable and effective and can provide useful information for drug users, although many aspects deserve further and deeper evaluation. They also have their own limitations and disadvantages, as messages in an internet forum provide very limited information in comparison with a real, face-to-face interview and intervention. In this sense it is important to remember that many drug users are reluctant to ask their questions in standard health services because they feel they will be judged, or are afraid of moral prejudices on the part of practitioners. Additionally, in many parts of the world, services oriented towards drug users are simply non-existent. Global netreach interventions could thus work as a reliable means of helping these users reduce the risks of their drug use.

Considering these two experiences, it is important to highlight that the implementers should introduce themselves as a credible and professional source of information. To do so, they should be connected to some offline service and be professionals working in the drugs field. This identification is very important to guarantee that online drug users can distinguish professionals from non-professionals among those who offer harm reduction support online.

As regards the specific issue of interventions on the Deep Web, professionals should possess a thorough understanding of the dynamics of online marketplaces and also of different kinds of drugs, considering that the users of these networks are highly knowledgeable about drugs, so their doubts and needs could be really specific.

4 CONCLUSION

This paper explored the impact of technology, especially the internet, on the way people are buying and using drugs and searching for information. The netreach concept was presented as an intervention approach that adapts the outreach philosophy to online settings. Considering its relationship with technology and the use of internet facilities, the target groups of this intervention are mainly recreational drug users, partygoers, and psychonauts, with outreach teams working in party settings being in a privileged position to design and implement netreach activities. However, and according to the EMCDDA (2009), web-based interventions should be managed by trained and experienced counsellors, protection of privacy should be guaranteed, and interventions should be linked to offline services so that users in need may be referred to the existing health and social services. It is also important to highlight the fact that netreach work should not be used as a substitute for outreach work: this web-based approach could help professionals connect with online drug-using communities and monitor emerging trends in drug use, but it cannot replace the multifaceted nature of face-to-face outreach contacts. These two approaches are complementary, not mutually exclusive.

Considering the specific features of netreach work, it is also recommended that the intervention should be national or global rather than hyperlocal, particularly in the era of globalization in which we can talk about EU or global citizens who travel, buy drugs, and connect with other drug users all around the world.

Netreach is a specific work area that needs time and specific resources. In this sense, more funding is needed in order to implement consistent and effective netreach interventions.

Finally, research and evaluation of netreach practices are needed to measure the effectiveness and impact of these interventions in influencing changes in behaviour.

The roles of the authors: Cristiana Vale Pires was the implementation coordinator of the APDES Local Pilot Intervention and co-conducted this study. She designed the netreach methodology and wrote the Local Pilot Intervention report. Helena Valente co-designed and co-conducted this study. She reviewed the Local Pilot Intervention report. Fernando Caudevilla co-conducted this study. He participated in the implementation of the Local Pilot Intervention by providing training.
Conflict of interest: None of the authors report any conflict of interest.

Role autorů: *Cristiana Vale Pires byla koordinátorkou implementace lokální pilotní intervence realizované organizací APDES a podílela se na provádění studie. Je tvůrkyní metodiky terénní práce v prostředí internetu a autorkou zprávy o implementaci lokální pilotní intervence. Helena Valente se podílela na tvorbě designu a realizaci této studie a podílela se rovněž na finální verzi zprávy o implementaci lokální pilotní intervence. Fernando Caudevilla se podílel na realizaci této studie. Jako školitel se rovněž účastnil implementace lokální pilotní intervence.*
Konflikt zájmů: *Nikdo z autorů neuvádí žádný střet zájmů.*

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NEWS

NPS POLICY – MOVING FORWARD

Reporting the Seminar

Leading European experts, including researchers, practitioners, and policymakers, met at a seminar in Lisbon on 26th November (9 a.m.–5.30 p.m.) to discuss the latest developments in the field of New Psychoactive Substances (NPS).
The event was hosted by APDES (Portugal) in collaboration with the Department of Addictology, Charles University in Prague (Czech Republic), the Regenboog Groep (Netherlands), Praksis (Greece), Carusel (Romania), Sananim (Czech Republic), and Monar (Poland), within the framework of the European project NPS in Europe.
The seminar included keynote speakers presenting the European situation regarding NPS and innovative interventions in the area and discussed the challenges, obstacles, and successes in relation to the legal regulation of this phenomenon.
The welcoming session was facilitated by José Queiroz (Executive Director of APDES) and Joaquim Fonseca (Director of the Division for Intervention on Addictive Behaviours and Dependencies from the Regional Health Administration), who welcomed the participants and explained the overall objectives of this seminar and its plan.
The seminar included four sessions. During the morning there were two different sessions which were very well attended in terms of areas of expertise and nationalities. These sessions were focused on the latest developments in research and interventions concerning NPS and provided data for the later discussion of the NPS policy.
The first session was dedicated to the presentation of the "NPS in Europe" project (by Cristiana Pires, APDES) and the Rapid Assessment & Response (RAR) methodology (by Jean-Paul Grund, CUNI, & Katrin Schiffer, Rainbow Group), and the presentation of three of the pilot interventions planned and implemented under the project. Cristiana Pires (APDES), Alez Herzog (Sanamin), and Grzegorz Wodowski (Monar) presented the main processes and results of their tailored pilot interventions. This session was very effective in explaining the implementation dimensions of the "NPS in Europe" project and also in demonstrating the diversity that exists in terms of the local expressions of the NPS phenomenon and ways to respond to it.
For the second session, several European professionals and researchers with expertise in the field of NPS were invited to participate. This session was chaired by Dr. Graça Vilar from SICAD (General Directorate for Intervention on Addictive Behaviours and Dependencies, Portugal) and integrated four relevant presentations:

- Dr. Adam Winstock presented the Global Drug Survey methodology, and, in a very dynamic way, highlighted the main results regarding NPS: markets, substances used, users' profiles etc.;
- Dr. Fernando Caudevilla shared his knowledge about the dynamics of the Deep Web and also his relevant professional experience in online harm reduction, specifically in the Deep Web Marketplaces' forums, where he works under the alias of Doctor X;
- Helena Valente (APDES) provided a presentation about the relevance of Drug Checking as an outreach frontline service to detect NPS and new drug trends. By presenting data on the APDES drug checking service – CHECK!NG – she also provided relevant data about the impact of this service in changing users' behaviours.

Session on NPS in Europe: Project overview and results

Session on EU28 Inventory by Jean-Paul Grund

Policy Debate – EU NPS Legal Framework

Since Maria Carvalho (Kosmicare/Boom Festival) could not attend the seminar, Helena also presented Boom Festival's Kosmicare service – an emergency harm reduction service provided by a multidisciplinary team of volunteers that supports users undergoing difficult psychedelic experiences;

- Finally, Fred Bladou's (AIDES, France) presentation focused on NPS use in a sexual context, specifically among men who have sex with men. He shared data concerning chemsex and slamming in Paris, patterns of NPS use, and also specific risks such as HIV and other STI infections.

In this session different expressions and uses of NPS were addressed and at the same time good intervention practices were shared, for example drug checking and netreach work (web-based harm reduction). However, one of the main conclusions that arose from this session was that even though there is an emergence of sophisticated Deep Web Marketplaces and a growing number of new psychoactive substances, users still prefer more traditional drugs. In fact, legal frameworks seem to be the main variable that motivates users to search for legal psychoactive substances or alternative markets (mainly because of the repressive laws or the low level of quality of street drugs). All the speakers agreed that the only approach that could be effective in responding to the NPS phenomenon in a holistic manner would be to experiment with an alternative regulatory model to that for the so-called "traditional drugs".

Jean-Paul Grund (CUNI) opened the afternoon sessions by providing the main data collected under the EU28 Inventory. This presentation highlighted the diversity of NPS and NPS use among the different European countries, and provided data for the later policy discussion.

The last session was a policy debate focused on the European NPS Legal Frameworks. This debate was chaired by José Queiroz (APDES) and Eberhard Schatz (RG) was the rapporteur. This session was enriched by the presence of the national representatives of the REITOX Network focal points, namely Patrícia Pissarra, (SICAD, Portugal), Artur Malczewski (Head of the Polish Focal Point), Gerasimos Papanastasatos (Office of the National Drug Coordinator, Greece) and Katerina Grohmannova (EWS on NPS, Czech Republic). The session focused on the functioning of the Early Warning System, communication with the national outreach teams and services, and the effectiveness of the current EU NPS-specific legal framework in facing the challenges of this phenomenon. The participants agreed that there are some gaps in the legislation and the current European legislative frameworks cannot fully tackle the NPS-related issues, such as the online markets and the constant appearance of new substances. The audience interacted with the speakers, asking challenging questions related to the project funding, the repressiveness of the legal framework, and the lack of support for innovative intervention approaches.

Eberhard Schatz (Rainbow Group) closed the seminar by summarising the main topics discussed during the day and also inviting the audience and speakers for a closing cocktail.

This seminar had almost 100 registrations. The audience was international, and the majority of the participants were professionals working in the drug field, but also researchers, peers, students, and policymakers.

The agenda of this seminar was very rich and the feedback from the audience was very positive. By presenting the most recent developments concerning the regulation of NPS, this seminar was a good opportunity for exchanging examples of good practice and fruitful discussion and provided a unique networking opportunity based on expertise from a variety of fields, including research, practice, and policymaking.

Cristiana Vale Pires, Ana Costa, and Helena Valente
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Part of the seminar's audience

APPENDIX: RECENT Department of Addictology NPS STUDIES AND PROJECTS

NEW PSYCHOACTIVE SUBSTANCES AMONG PROBLEM DRUG USERS – TOWARDS EFFECTIVE AND COMPREHENSIVE HEALTH RESPONSES IN EUROPE (NPSinEUROPE.EU)

Financial support for the NPS project (JUST/2013/DPIP/AG/4774) was provided by the Drug Prevention and Information Program of the European Union (EU DPIP). Institutional support was provided by Charles University in Prague (No. PRVOUK-P03/LF1/9).

Project aims:

To contribute to the development of innovative and effective health promotion interventions regarding emerging NPS use in Europe by bringing together quality research capacity, a selected group of experienced service providers in the field of health promotion and harm reduction, and the Correlation Network.

Specific objectives:

- provide an overview of the use of new psychoactive substances (NPS) in populations of problem drug users (PDUs) in the EU28 countries and identify the associated risks for harm and the existing legislative, preventive and harm reduction responses;
- assess, identify and describe harmful patterns of NPS use among PDUs, NPS related risks and harms in 5 selected countries, as well as identify and prepare adequate tailored public health responses;
- develop and implement targeted pilot interventions for prevention, demand reduction and harm reduction targeting NPS use among PDUs;
- build best practice guidance and capacity among harm reduction workers towards improving harm reduction responses; and
- disseminate the results of the Europe-wide inventory, 5 country assessment and local pilots on public health responses, through an online resource centre and a training manual, and at regional and national conferences.

Partnership:

Implementing partners

APDES, Portugal (Lead Agency): Jose Queiroz, Ana Costa, Cristiana Pires, Helena Valente, Maria Joao Oliveira, Claudia Rodrigues, Daniel Martins

Charles University in Prague (Czech Republic): Jean-Paul Grund (Principal Investigator), Lenka Vavrinčíková (Project Coordinator), Barbara Janíková, Hana Fidesová, Michal Miovský, Michaela Malinová (Project Support)

Rainbow Group and Correlation Network, the Netherlands: Eberhard Schatz, Katrin Prins-Schiffer

Associate partners

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MONAR, Poland: Grzegorz Wodowski, Bartosz Michalewski

PRAKSIS, Greece: Marianella Kloka, Ionna Pertsinidou, Spiros Konidaris, Ioanna Bahti

SANANIM, Czech Republic: Jiří Richter, Tomáš Vejrych, Aleš Herzog

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Simona Šabić (Slovenia)
Víctor Galán Amador (Spain)
Magnus Brahn (Sweden)
Frank Zobel (Switzerland)
Martha Dalton (UK)

Project outputs:

NPSinEurope.eu published a series of research and implementation reports, lessons learned & policy recommendations and a training curriculum, which can be downloaded from ***http://npsineurope.eu/index.php/12-nps-publications***.

The project results and outcomes were presented at various national meetings organised by the project partners, a European policy seminar "NPS Policy: Moving Forward," organised by the project and at several international conferences and meetings. Finally, in November 2015, professional and peer drug workers from across Europe were trained on NPS & harm reduction in a 2.5 day course at the premises of the EMCDDA in Lisbon, Portugal.

NPS
New Psychoactive Substances in Europe

Department of Addictology, First Faculty of Medicine, CUNI Prague, http://www.adiktologie.cz/en/articles/414/Research-projects

A LOCAL APPROACH TOWARDS THE REDUCTION OF PSYCHOACTIVE SUBSTANCE USE (LOCAL PASS)

Project aims:

The aim of the LOCAL PASS project, funded by the European Commission between 1st March, 2013 and 28th February, 2015 (JUST/2012/DPIP/AG/3600), was to develop an effective, standardised local system and guidelines for (i) identification and (ii) risk assessment of new developments related to psychoactive substance use, and (iii) to develop an effective plan for local interventions.
The same methods were applied to all three workstreams: a literature review, structured 'Key Informant' interviews, focus groups, and an online survey in the five project partner countries (BG, CZ, IT, NL, PT).

Project outputs:

The LOCAL PASS toolkit developed within the project will enable municipalities and other local stakeholders better to: (i) identify emerging drug trends early on, before they tip over into a phase of wider diffusion; (ii) assess the risks involved and the potential harms that might occur, and (iii) implement and/or develop appropriate interventions when indicated by the risk assessment.
The short-term benefits of this may be closer and quicker collaboration with all stakeholders, an earlier response, and interventions that are tailored to the target group. In the long run an early response to emerging drug trends may lead to a reduction in the use of psychoactive substances, a decrease in drug-related problems, and a reduction in the costs to society in terms of, for instance, treatment, prosecution, and healthcare.
More information, including an interactive map of new trends in psychoactive substance use and local responses to them in the EU, can be found at www.localpass.eu.
Project coordinator: Renee Otte, Ph.D.
WS leaders: Ing. Mgr. Vendula Belackova, Jean-Paul Grund, Ph.D., Renee Otte, Ph.D., Ankie ten Velde
PROJECT TEAM (partner organisations):
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Charlotte van Dam (Novadic Kentron),
Henk Garretsen (Tranzo), Jolanda Mathijssen (Tranzo), Jeanne Teuwsen (Municipality of Breda), Carien van Weezel (Municipality of Breda), Franc Francia (Emilia Romagna Region), Edoardo Polidori (Emilia Romagna Region), Silvia Marani (AUSL Bologna, IT),
Raimondo Pavarin (AUSL Bologna),
Armenio Pereira (Social Development Institute – PT), Ines Pereira (Social Development Institute), Marlene Marques (Municipality of Agueda, PT), Dina Calado (Municipality of Agueda),
Eliana Neves (Municipality of Agueda),
Iva Paneva (Association Our World, BG),
Anna Konstantinova (Association Our World),
Svetlana Koena (Municipality of Varna),
Borislav Stanchev (Municipality of Varna)

NEW DRUGS – MARKET ANALYSIS, EPIDEMIOLOGY OF USE, AND IDENTIFICATION OF PREVENTIVE AND HARM MINIMISATION STRATEGIES

The main goal of the project *New drugs – market analysis, epidemiology of use and identification of preventive and harm minimisation strategies*, which was funded by the Internal Grant Agency of the Ministry of Health of the Czech Republic (grant No. NT-14064-33, conducted in the period 1st Jan 2013–31st Dec 2015) was a comprehensive analysis of the use of the "new synthetic drugs" (NSDs), which influence the lifestyle of vulnerable population groups (mainly adolescents and young adults) in the Czech Republic and elsewhere in the world.

Project aims:

The aims of the project were: (i) to identify the epidemiological indicators of NSD use in the general population of the Czech Republic and in specific vulnerable groups (children and adolescents, problematic drug users, recreational drug users, and new groups of substance users) and assess their values; (ii) to identify the most commonly used "new drugs" and to classify them according to their compounds, comprehensive risks, and distribution channels; (iii) to analyse the patterns of use of the new synthetic drugs and the related risks in specific subpopulations; (iv) to design a methodology for routine (early) risk assessment with respect to the use of the new synthetic drugs in the Czech Republic; (v) to design specific preventive tools and risk minimisation interventions with respect to the new synthetic drugs.

Project findings:

(i) The lifetime prevalence of NSD use is approximately one-sixth of those who took part in the nightlife scene during the last 12 months. This represents only a fraction of the same indicator for the use of "traditional drugs", but it is higher than the use of other "new" substances (typically, GHB). NSD use at least once during the last 12 months was reported by as many as half of the problem drug users in some regions of the Czech Republic.
(ii) In the Czech Republic, most NSDs are cathinones sold under different marketing names on the street. The most commonly reported negative effects include headaches, acute cardiovascular problems, psychological disorders, nausea and vomiting, impaired coordination, hyperthermia, visual disorders, and intense hallucinations.
(iii) For the population of recreational drug users, the main risks are seen in the unknown content of the active substance in the mixture that is used, and in insufficient information on safe dosage and on interactions with other substances. For the population of problem drug users, it is also frequent injecting of the NSDs and the related risk of blood-borne infections and other health complications.
The project presented a proposal for amendments to the laws that deal with the definitions of psychoactive substances in the Czech Republic, and for the process of assessing the risks posed by NSDs for

legislative purposes. The project reviewed the existing literature on prevention and treatment interventions, and adopted them to the context of the Czech Republic.
Principal investigators: Tomáš Zábranský, MD, Ph.D., MUDr. Viktor Mravčík, Ph.D.
Co-investigator: Ing. Magdalena Kvíčalová (TG Masaryk Water Research Institute)
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I-TREND – "INTERNET TOOLS FOR RESEARCH IN EUROPE ON NEW DRUGS": INTERDISCIPLINARY AND INTEGRATED APPROACHES TO SUBSTANCES, USERS, AND MARKETS

I-TREND (JUST/2012/DPIP/AG/3641; April 1, 2013 – June 30, 2015) is a European research project which aimed to help prevent the health and social harms associated with New/Novel Psychoactive Substances (NPS), or 'New Synthetic Drugs', which are widely available on the internet. I-TREND consisted of five European countries (France, the Czech Republic, the United Kingdom, the Netherlands, and Poland). The objective of the I-TREND project was to help prevent the health and social harms linked to the new psychoactive substances (NPS) and to focus on informing the response to the emerging risks. The principal activities of the project were monitoring online user forums and online shops, the analysis of samples and the exchange of reference standards among laboratories, an online survey, and triangulation with field data from the existing drug monitoring network. Using a combination of data sources (e.g. law enforcement seizures, evidence on increased interest in NPS among users, NPS-related fatalities) and consultations with key stakeholders, each country developed a Top List of NPS for in-depth investigation.
A detailed overview of each selected NPS was produced, covering various aspects such as toxicity information, toxicological content, legal status, users' practices and perception, and online availability. All this information was extracted from I-TREND activities (online survey, monitoring of forums and webshops). Some of these substances, particularly those which were popular in each country, were further analysed at the international level in order to gain a multicultural overview of the NPS phenomenon.
The project developed innovative methodologies in all the above-mentioned areas, among them a semi-automated scraping software for the monitoring of online shops, quantitative monitoring of online discussion forums, and a comprehensive survey tool to assess NPS use in online populations.
The outcomes of the project are presented at http://www.i-trend.eu/.

PROJECT TEAM – partner organisations:

Monitoring Centre for Drugs and Drug Addiction – OFDT (FR): Agnès Cadet-Tairou, Head of TREND department, Emmanuel Lahaie, Magali Martinez, project manager, Virginie Duthey
The Centre for Public Health (CPH), Liverpool John Moores University (UK): Jim McVeigh, Reader in Substance Use, Deputy Director, Amanda Atkinson, Senior Researcher, CPH, Simon Brandt, Dave Seddon
Warsaw School of Social Sciences and Humanities – SWPS (PL): Piotr Salustowicz, Michal Kidawa, Artur Malczewski, Slawomir Mandes
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New Psychoactive Substances in Europe

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