



European Monitoring Centre
for Drugs and Drug Addiction

BRIEFING PAPER

ONLINE SALES OF NEW PSYCHOACTIVE SUBSTANCES/
'LEGAL HIGHS': SUMMARY OF RESULTS FROM THE 2011
MULTILINGUAL SNAPSHOTS

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Background

The EMCDDA monitors unregulated psychoactive products — the so-called 'legal highs' — sold via the Internet and advertised with aggressive and sophisticated marketing strategies, and in some cases intentionally mislabelled with declared ingredients differing from the actual composition. The 'legal highs' market is distinguished by the speed at which suppliers circumvent drug controls by offering new alternatives. The EMCDDA has been monitoring the marketing of these new psychoactive substances since 2006 through multilingual Internet 'snapshots', which function as rapid assessments of the online availability of substances, undertaken during a limited time window. Changes in the methods used have increased the quality and coverage of these surveys, but mean that data for different snapshots may not be directly comparable. This paper presents findings from the two most recent snapshots, performed in January and July 2011.

EMCDDA snapshot methodology

EMCDDA snapshots aim to ascertain the ready online availability of new psychoactive substances/'legal highs' to users in the European Union (see box). The July 2011 snapshot was carried out in 18 ⁽¹⁾ EU languages (spoken as mother tongue by 97 % of the EU population) as well as in Russian and Ukrainian.

The EMCDDA snapshot methodology — core components

Scope:

- Online websites (retailers and wholesale) easily accessible to a random Internet user interested in buying psychoactive substances;
- Targeting and addressing an EU audience.

Exclusion criteria:

- Websites selling only paraphernalia or seeds or non psychoactive mushrooms;
- Websites not shipping psychoactive substances to an EU Member State;
- Discussion forums and/or drug-related chat rooms, social networking sites or tools such as Skype, Messenger, Facebook, Twitter, etc.

Identification of killer string:

Select the search string to achieve the maximum coverage. Identify 'killer' term or a 'killer' combination of terms for each search ('killer' = more relevant hits on the search performed).

Sampling to exhaustion:

Mandatory look at the first 100 links and after 101, 'sample to exhaustion' (ceasing when 20 successive links are irrelevant).

Use of multiple search engines:

Coverage and performance (in terms of accuracy of search) is enhanced with the use of Metacrawler.com + Google(.national) + 1 additional specific national search engine (the most relevant by languages).

Broad coverage of EU languages:

Maximise number of EU languages used for searching.

Common reporting template:

Search results reported the same way in different languages.

⁽¹⁾ Bulgarian, Czech, Danish, German, Greek, English, Spanish, French, Italian, Latvian, Hungarian, Maltese, Dutch, Polish, Portuguese, Romanian, Slovak and Swedish.

Three search engines ⁽²⁾ and six search strings ⁽³⁾ were used for each language. One search string used generic terms for new drugs/'legal highs' including 'legal highs' and 'research chemicals', and the remaining five strings focused on: 'herbal blends' (including, among others, 'Spice', salvia divinorum and kratom); GHB and GBL; hallucinogenic mushrooms; mephedrone; and substances related to pipradol (2-DPMP, desoxy-D2PM and D2PM). For each site identified, the following information was collected: site descriptors, products on sale, product descriptions, prices, countries of delivery, ingredients, health warnings and disclaimers.

Results

This snapshot identified 631 online shops selling new psychoactive substances/'legal highs' and shipping products to at least one EU Member State. This was twice the number of shops identified in January 2011 (314 shops) and a more than three-fold increase from January 2010 (170 shops). As the search strings had been fine-tuned between the January and July 2011 snapshots, a check was undertaken to assess whether the increase resulted from these methodological changes. A search conducted using strings identical to those used in January generated similar results, indicating that the identified increase in number of shops was a valid finding.

Establishing the country of origin for online shops is difficult. In cyberspace, with its lack of geographical boundaries, it is not difficult for sites to present as having origins in one country while operating from another. In addition, review of available indicators, such as contact information, country code domain, currency and shipping information, can point to more than one country. However, using the available parameters, it appeared that around a third of the shops identified (197 of 631) were based in the United States of America, and a fifth were based in the United Kingdom (Table 1). When compared with January 2011, the July 2011 snapshot identified a tripling of sites that were US-based and also increases in number of shops whose country of origin appeared to be the United Kingdom, the Netherlands, Germany, New Zealand, Poland and Canada. However, there were also exceptions to this, with a stable number of 'Russian' online shops, and a slight decrease in the number of 'Hungarian' and 'Romanian' sites identified.

Table 1: Likely country of origin for online shops in 2011 (*)

	Number of shops identified	
	July	January
United States	197	65
United Kingdom	121	74
Netherlands	61	41
Germany	50	26
New Zealand	31	10
Czech Republic	24	21
Poland	21	9
Canada	19	5
Hungary	15	16
Russia	11	11
Romania	10	13

(*) Only countries where 10 or more shops were identified are shown.

⁽²⁾ Google, one 'national' search engine (the most relevant by language) and metacrawler.com

⁽³⁾ The search strings included 'buy' plus names or designations of new drugs/'legal highs'.

English continues to predominate as the main interface language used for online sales — 490 of the 621 online shops had English as an interface language, with 367 having an English only interface. German was the second most-used interface language, increasing from 62 online shops identified in January to 102 online shops in July. Although Spain and France were rarely identified as countries of origin for online shops, Spanish and French were relatively common as interface languages (43 online shops each), while Polish and Dutch were used by 37 shops.

Restrictions on deliveries and 'disclaimers'

Online shops operate in uncertain environments where there is a continual risk that the products they sell will be subjected to control measures in at least one country. Some online shops therefore place restrictions on the countries to which they will ship. They may publish a list of countries to which shipping is not possible (this can vary from product to product), or they encourage buyers to check legal status in their home country (sometimes linking to sites where this information is available). In January 2010, 30 out of 170 online shops (18 %) imposed restrictions on deliveries; this had risen to 253 out of 631 online shops (40 %) in July 2011.

The most common 'warning' or 'disclaimer' used by online shops was that products were 'not for human consumption'. Other warnings, such as 'for educational/research/botanical purposes only' and '[name of online shop] will not be liable to you or anyone else for any damages or injury caused by ingestion of these products' were also common. In both the January 2011 and July 2011 snapshots, around 65 % of identified sites were recorded as having some type of disclaimer or product warning.

Products and prices

New psychoactive substances/'legal highs' are marketed sometimes as substances with a chemical name and other times as a product name with or without information on ingredients. There are also many examples where substances are linked to a label, product name or code name/acronym, such as MDAI (Sparkle), methoxetamine (MXE), 6-APB (Benzo fury), naphyrone (NRG-1) and dextromethorphan (DXM). Some sites are extensive and can have over a hundred products, making complete data collection on product information impractical. Sampling of products was therefore limited to at least one product per category as utilised by shops/sites.

The most commonly sold new psychoactive substances/'legal highs' identified in July 2011, all found in 15 or more online shops, are presented in Table 2. Six of these substances are based on natural products: kratom, salvia, hallucinogenic mushrooms, damiana, cactus and wild dagga. At the time of writing, kratom or its psychoactive principle — mitragynine and 7-hydroxymitragynine — are controlled in six EU Member States and salvia or its psychoactive principle in 14 as well as Norway. The two main psychoactive ingredients in hallucinogenic mushrooms, psilocybin and psilocin, are controlled internationally through UN conventions. However, a lack of legal clarity with regard to mushrooms containing these substances is seemingly being exploited by online retailers. Damiana contains damianin about which little is known. It is reportedly used as an aphrodisiac and is advertised as having 'relaxing effects on the central nervous system'. Cactus is being sold under the names of 'San Pedro' or 'Peyote' cactus, which contain the controlled substance mescaline. Wild dagga is a plant species in the mint family, which reportedly has mild psychoactive properties comparable to cannabis.

The remaining products most frequently identified are different kinds of synthetic substances. These are MDAI (Sparkle), methoxetamine (MXE), 6-APB (Benzo fury), 4-MEC, MDPV, 5-IAI, dimethocaine, 5-APB, AM-2201, alpha-methyltryptamine (AMT), MDAT and mephedrone. The legal status of these substances ranges from not being controlled in any Member State (such as 5-APB and 5-IAI) to being widely controlled (such as MDPV and mephedrone). Some of these substances, such as 4-MEC, MDPV and naphyrone, are synthetic cathinones, like

mephedrone; others, such as JWH-250 and JWH-122 (found in 'Spice'), are synthetic cannabinoids.

Table 2: Most frequently identified new psychoactive substances/'legal highs' on sale and prices in 2011

New psychoactive substance/'legal high'	Number of shops identified		Nature	Price for 10 g (EUR)
	July	January		
Kratom	128	92	Natural	6–15
Salvia	110	72	Natural	6–12
Hallucinogenic mushrooms	72	44	Natural	10–14
MDAI (aminoindane)	61	45	Synthetic	100–110
Methoxetamine (arylcyclohexylamine)	58	14	Synthetic	145–195
6-APB (benzofuran)	49	35	Synthetic	230–260
4-MEC (cathinone)	32	11	Synthetic	120–200
MDPV (cathinone)	32	25	Synthetic	115–239
Cactus	30	17	Natural	20–40 (plant)
Methiopropamine (thiophene)	28	5	Synthetic	115–130
5-IAI (aminoindane)	27	25	Synthetic	95–120
Dimethocaine (benzoate)	27	22	Synthetic	85–150
Methylone (cathinone)	26	17	Synthetic	76–130
5-APB (benzofuran)	23	6	Synthetic	250–330
AM-2201 (cannabinoid)	22	1	Synthetic	180–210
JWH-018 (cannabinoid)	20	5	Natural	200–230
JWH-250 (cannabinoid)	19	4	Natural	110–195
AMT (tryptamine)	19	13	Synthetic	230–460
MDAT (aminotetralin)	18	22	Synthetic	110–130
Mephedrone (cathinone)	18	23	Synthetic	120–200
JWH-122 (cannabinoid)	17	4	Synthetic	50–55 / 200–240
Ayahuasca (active principle DMT)	17	10	Natural	15–30 (kit)
4-FA (phenethylamine)	17	2	Synthetic	120–200
3,4-DMMC (cathinone)	16	3	Synthetic	90–200
Hawaiian baby woodrose (active principle lysergamides)	16	10	Natural	4–8 (10 seeds)
GBL (GHB related)	15	12	Synthetic	35–45 (½ litre)

Online shops selling new drugs/'legal highs' operate on the edge of legality, and they are often both vague and creative in the descriptions given of their products and their purported uses. New psychoactive substances/'legal highs' may be sold as research chemicals, plant food, bath salts, exotic incenses, room odourisers, pond cleaners etc., alongside more indicative descriptors such as party pills, ethnobotanicals, herbal highs, and smoking blends. The use of some of these terms has been volatile, for example mephedrone pre-control was widely advertised as plant food, whereas after control 'research chemical' became common.

Polish sites used to sell 'legal highs' (*Dopalacze*), but after the introduction of national legislation to ban these substances, they were marketed as 'research chemicals'.

Many of the identified new-drugs products or brands had either no, or only superficial information about content. Among the more common product names/labels were: Benzo fury, Happy caps, Charge+, Pulse, Tribe, Afghan incense, NRG-1, NRG-2, White lady, Ivory wave, C original, lhigh, Cloud 10 storm, Gogaine and Charly Sheen. Studies focusing on what new psychoactive substances/'legal highs' actually contain show that, very often, the content differs from what is announced. Mephedrone, for example, was detected in products sold as naphyrone or NRG-1 in Ireland and the UK after its ban (Brandt et al., 2010). Similarly, another survey found that up to 70 % of the examined products labelled NRG-1 and NRG-2 contained mixtures of controlled cathinones and not the (at the time) uncontrolled naphyrone, as was claimed by the online retailers (Corazza et al., 2011). It is clear that the customer has no guarantee that the product purchased is the same as the one advertised. An additional risk is that the ingredients in the product might be controlled, in which case, the customer is unknowingly violating drug legislation.

Conclusions

Online vending of new psychoactive substances/'legal highs' appears to be expanding at an unprecedented speed. The factors behind this are difficult to ascertain. However, they may include an increase in online vending in response to growing market demand or expansion resulting from the closure of physical smart shops (for instance, in Poland). Notably, almost a third of the over-600 sites identified in January 2011 appeared to originate in the USA, with the number of US-based sites tripling since January 2011. Caution is required, however, as while Internet monitoring may provide some insight into the online availability of 'legal highs', what remains unclear is the actual size of the Internet market and the extent to which drug users are choosing to access the web as a main source of supply.

Internet monitoring of online sales is still in its infancy and has a number of limitations. The very size and scale of the Internet precludes the possibility of comprehensive monitoring of drug-related content, however, the snapshot methodology does allow repeated cross sectional samples, which can highlight important trends. While the EMCDDA snapshots provide an overview of the availability of psychoactive substances, no purchases were made. As such, it is not possible to confirm whether customers will receive their orders and, more importantly, whether the products shipped are the ones advertised. In their 2010 'legal highs' study, Hillebrand et al. conclude that there is a need to conduct regular forensic analyses of products sold in order to establish the ingredients and identify any related health risks. In the future, continuous online purchase and rigorous content analysis of substances sold over the Internet will be important, as their composition might be associated with significant toxicity and consequently might expose consumers to serious health risks.

Online sale of new psychoactive substances/'legal highs' is an international phenomenon, with many shops advertising worldwide delivery, and a majority of sites using English to market products. Online vendors have become increasingly cautious in adapting their sales practices, and this study identified an increase in online shops having product warnings and shipping restrictions. As seen in the case of mephedrone, control measures may reduce, but not eliminate, online vending, and they may have the effect of pushing prices upwards. The monitoring of online availability of new psychoactive substances/'legal highs' is a challenging task, particularly given its dynamic and 'virtual' nature. However, the challenge posed to legislative bodies and regulatory agencies by new psychoactive substances/'legal highs' online vending is unlikely to diminish in the near future, necessitating increasingly sophisticated and flexible monitoring mechanisms capable of following this particularly dynamic and expanding phenomenon.

References

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