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**The Dynamic Landscape of Novel Psychoactive Substance (NPS) Use in Ireland: Results from an Expert Consultation**

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### Article

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## **Abstract**

In Ireland, legislators encountered a new phenomenon in 2005 onwards with the advent of ‘legal highs’ sold in headshops. Use of ‘legal highs’ containing herbal and synthetic new psychoactive substances (NPS) was not confined to problematic drug users, and included social recreational users. Legislative controls were enacted in 2010, 2011 and 2015. This brief report presents descriptive findings from a consultation with national and regional experts on the NPS situation in 2016. Four themes emerged and centred on; ‘*Definitions of NPS used within Professional Roles*’; ‘*Professional Experiences of NPS*’; ‘*Types of NPS Users, Sourcing and Consequences of Use*’; and ‘*Service Response.*’ Findings underscored the mental health and addiction related consequences of NPS use, with prevention, clinical and treatment services ill- equipped to deal with the particular characteristics of this form of drug abuse. Enhanced strategies, services and clinical responses are warranted to address the challenges encountered.

## **Key Words**

Novel psychoactive substance, Ireland, mental health, addiction

## Introduction

In Ireland, legislators encountered a new phenomenon in 2005 onwards with the advent of ‘*legal highs*’ sold in headshops <sup>1</sup> (Kavanagh and Power, 2014). By May 2010, numbers of headshops had increased to 102, equating to one shop per 45,000 people (Smyth et al., 2015). A new wave of legitimate drug consumerism was observed and occurred at a time of poor street quality of conventional street drugs such as MDMA, amphetamine and cocaine (Van Hout, 2012). Headshop retailers complied with Irish law and marketed products as ‘*legal*’ and ‘*not for human consumption*’, despite products containing herbal and novel psychoactive substances (NPS) and labelled with drug associated nomenclature (Van Hout, 2012). Use of NPS was not confined to problematic drug users, and included social recreational users (McElrath and Van Hout, 2011; Van Hout and Brennan, 2011a; Van Hout and Bingham, 2012). Decisions to try NPS were reportedly influenced by 24 hour availability and pricing, home delivery, advertising, perceived level of protection and distance from the illegal drug trade, and lack of confirmed urine analysis for those in the treatment system (Van Hout and Brennan, 2011a;b;c; Ryall and Butler, 2011, McElrath and Van Hout, 2011; Van Hout and Bingham, 2012). Users appeared to perceive products as safe, with little awareness around lack of regulation and risk relating to toxicity (Van Hout, 2012). Clinical concerns at the time centred on the rise in presentation of users with psychosis and suicidal ideation (Tully et al., 2011; O'Domhnaill and Ni Chleirigh, 2011; El-Higaya et al., 2011; Uhoegbu et al., 2011).

Political and social concern contributed to a series of national legislative controls in 2010 and more recently in 2015 (Ryall and Butler, 2011; Health Research Board, 2016). Pre-legislative studies indicated that Irish NPS users were not deterred by impending legislative controls, and reported stockpiling of products (particularly the synthetic cathinone, Mephedrone) and

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<sup>1</sup> A head shop is a retail outlet which specialises in drug paraphernalia related to consumption of cannabis, other recreational drugs, and New Age herbs, as well as counterculture art, magazines, music, clothing and home decor.

accessing of online retailers (McElrath and Van Hout, 2011; Van Hout and Brennan, 2011a;b). Small-scale post legislative studies reported on a ‘*temporary displacement*’ with users either ceasing use or switching back to the conventional street sourcing (Van Hout and Brennan, 2011a;b; McElrath and Van Hout, 2011). In later years, legislative controls were speculated to have incurred some positive results, with small scale studies reporting on reduction of cathinone derivatives in post-mortem blood samples and urine samples of methadone programme patients (Kavanagh and Power, 2014); and reduced prevalence of NPS use in high risk youth (Smyth et al., 2015); and treated heroin dependent adults (O’Byrne et al., 2013). The Eurobarometer (2014) has however reported on increases in young persons (15-24 years) use in Ireland. In 2016, studies have reported on problematic use of synthetic cannabinoids (SCBs), 5f-AKB48 and 5F-PB-22 in border counties (Van Hout and Hearne, 2016), the rise in HIV incidence among people who inject drugs (PWID) using the synthetic cathinone, a-PVP (Giese et al., 2015) and media reporting on the spate of hospitalisations and fatalities due to consumption of other popular NPS; a-PVP, the stimulant 4-methoxy analog of methamphetamine (PMMA), the synthetic psychedelics 2,5-dimethoxy-4-bromophenethylamine (2C-B), the psychedelic phenethylamines (2-CP, 2-CI) and the derivative of 2-CI , 25I-NBOMe. This brief report presents descriptive findings from a consultation with national and regional health professional experts on the NPS phenomenon in Ireland in 2016.

## **Methods**

A qualitative study was conducted with 13 national and regional health professional experts across Ireland, and was undertaken as part of a large scale European funded study across five Member States. Participants were selected based on their expert status, (national and if not national, their regional status representing all regions in Ireland), and secondly their expertise in

the area of NPS, public health and addiction treatment. Participants represented national child protection and welfare, addiction psychiatry, harm reduction and addiction treatment; and regional drug education, community drug and alcohol services, primary care addiction treatment and rehabilitation, and clinical service management. Ethical approval for the study was granted by Waterford Institute of Technology, Ireland in 2016. All participants were provided with information around the study's aims, advised of confidentiality and anonymity, with participation indicating informed consent. A structured guide of questions was designed by the NPS Transnational Team (see [www.npstransnational.org](http://www.npstransnational.org)) based on the literature, and prior experiences in conducting research on NPS. The guide contained questions relating to the participant profile, their professional role as it related to NPS, their experience of types of NPS users, patterns of use and harms related to NPS use, their views on specific supply, demand and harm reduction approaches. Transcribed data consisting of 14,450 words was analysed using content analysis, through application of a structured, systematic coding scheme, in the form of open, axial and selective coding categories derived directly from the text (Hsieh and Shannon, 2005). Four descriptive themes emerged from the data.

## **Results**

Four females and nine males, with ages ranging from 30 to 59 years partook. Duration of professional experience ranged from 8 to 37 years (average 18 years), with four participants responsible for and operating within national health policy, clinical and addiction service levels, and the remainder responsible for regional remit of education, addiction treatment in primary care and community drug services.

### *Definitions of NPS used within Professional Roles*

Definitions of NPS varied according to the participant's professional role, and were generally confined within the regulatory domain and Irish legislative context. Many participants

labelled NPS within the context of products sold in headshops prior to 2010 and defined them as ‘*head shop products*’ and *legal highs*”. Many referred to NPS by type/brand name, for example ‘*Mephedrone /Spice*’ or according to their psychoactive effect.

*‘I define them as either stimulant or depressant, and identify them by the name that the service user calls them “Spice, Bath Salts, Incense” or if they have fitted a known validated description.’*

Participants described at length the dynamic nature of the designer NPS market and how surveillance and detection struggle to tackle continuously adapted products. Challenges in verification of NPS centred on chemical detection in drug seizures and urine analysis. Undetected compounds purchased on the Internet and entering Ireland via the postal system are labelled as ‘*research chemical*’; ‘*animal or herbal products*’.

*‘NPS are changing faster than the regulatory definitions, and indeed than the scientific community can confidently identify them.’*

### *Professional Experiences of NPS*

Contact with NPS users depended on level of case load contact, and ranged from referrals from schools, parents, social workers and Gardai (Irish police) through to daily case load with service users. Difficulties in estimating extent of NPS use in Ireland despite the rise in service concerns and increased referrals within the context of poly substance use, centred on lack of detection in urine screening (in treatment and prison settings), and prevalence surveillance.

*‘Difficult to quantify but services state that there is increasing use reflected in profile of clients presenting to services, as element of poly-drug use presentations.’*

*‘As the NPS in vogue are being used on the street, we would often find that we are noticing a population effect’.*

A lack of user awareness of harm and potential for overdose was described by many participants, particularly in the case of younger, more inexperienced users. Concerns centred on the rise in serious mental health admissions, and difficulties in treatment.

*'The user cannot tell when the desired effect will begin, crescendo, or when the hangover will subside. This may be at odds with the seller's description or the users perception, and may result in unintended consequences, such as doubling up the dose, or significant post use depression, similar to "Suicide Tuesday" from cocaine use. There are also significant short and long-term mental health effects from NPS, which have yet to be evaluated to the same degree as say cannabis and psychosis.'*

#### *Types of NPS users, Sourcing and Consequences of Use*

Participants recognised the wide range of NPS use across the Irish population. Specific groups of NPS users were identified, with some not engaging with health services,

- 1) College students or young people at parties;
- 2) 'Chemsex' men who have sex with men (MSM);
- 3) Entrenched PWID seeking a cheap high not undetectable by routine screening;
- 4) Co-morbid individuals with (often) primary mental illness and self medicating.

*'There is a novice user who perceives less risk associated with NPS under the guise of disarming names, and street culture. These include party & festival goers and students. There is a regular pill user, who sees themselves as "street wise" and likes to think they know a lot about the different types of tablets and NPS being traded, and perceives they are in control of the NPS effects by balancing their use between "uppers and downers". Then there is the chaotic drug user,*

*who is taking NPS as part of polydrug use, in an attempt to maintain a habit, or keep withdrawal symptoms at bay’.*

Poly substance use including a repertoire of NPS and conventional drugs was described as common, with popular NPS including SCBs, psychedelics, gamma-Hydroxybutyric acid (GHB) alternatives, psychedelic phenethylamines containing the 2-C substances, and cathinone stimulants such as a-PVP and Mephedrone. More recent trends included the opioid fentanyl analogue, flurofentanyl. Route of administration varied, with PWID and ‘Chemsex’ users often injecting, and recreational users in social night life ingesting, insufflating or smoking. General reasons for use of NPS centred on user curiosity, social influences, availability in the form of a ‘cheap high’, potency in comparison to conventional drugs, and for pleasure.

*‘For a ‘high’, curiosity, enhance sexual experience, inexpensive or in some cases free, ‘everyone else at the party was using’*

Participants distinguished between types of user in relation to sourcing methods, with PWID sourcing via existing street and peer networks, and social and ‘Chemsex’ users purchasing online and from friends. The internet was used by less chaotic users to source information on the Surface and Dark Net, with availability supported via mobile phone technology and social media.

*‘Students tend to get substances off friends. PWID tend to get from dealers.*

*Chemsex may access drugs via websites and online shops with delivery to door’.*

Consequences of NPS use centred on short term impacts such paranoia, heightened aggression and sexual risk taking, insomnia and increased injecting risk behaviours in PWID. The stimulant nature of the NPS injected was observed to contribute to worsening outcomes relating to reduced harm reduction and compulsive re-dosing. Those engaging in injecting of NPS were reported to experience bacterial infections, cellulitis, phlebitis, deep vein



thrombosis (DVT), and weight loss, and more significantly than opiate injectors. Longer term impacts centred on unpleasant withdrawals, virus transmission (HIV and HCV), and deterioration of mental state.

*'Short term agitation, anxiety, aggression. Some reports of increased sexual activity. Serious sleep deprivation for stimulant based substances. Serious impact on mental health. Reports of drug induced psychosis and long term mental health problems such as depression.'*

An increase in severity and progression of dependence symptomatology were described, and particularly negative in terms of mental health impact.

*'More highly addictive and quicker to form habits. Cessation has a higher negative effect on the mental health.'*

Particular concerns were voiced with regard to deterioration of mental health in the form of emotional instability, suicidal ideation and prevalence of inappropriate, violent and unpredictable behaviours, and the risks of acute psychosis and the onset of enduring mental health issues for those that are already vulnerable. Psychotic episodes were described as difficult to treat and usually requiring long periods of hospitalisation.

### *Service Response*

Participants underscored the need for national evidence based approach to clearly address emerging issues in NPS. Harm reduction efforts were recommended to include information on adverse acute and long term consequences of use, and supported by universal face to face, peer dissemination and internet campaigns targeting the different types of NPS users and those affected in their social network.

*'The primary target audience for the current National Drug Strategy is aimed at opiate users which doesn't meet the needs of the NPS population The*

*development of a new strategy needs to reflect information in regards to prevention, early identification, early intervention and putting more resources into supporting protective factors.'*

The need for enhanced targeted treatment and rehabilitation, and dual diagnosis service responses to address the poly substance using trends and particular consequences of NPS use appeared warranted.

*'NPS are not recognised within treatment and rehabilitation pillars of National Drug Strategy, or prevention in relation to being able to deal with people who present with these issues. It has no clear dual diagnosis strategic objectives or actions. Mental health and psychosis are extreme in cases of NPS use and there are very limited dual diagnosis services.'*

Clinical services were deemed ill-equipped to deal with the repercussions of NPS use and dependence, with participants highlighting the need for clinical guidance, enhanced collaboration between addiction and mental health services, and additional staff training and resources.

*'Currently there is a scarcity of inpatient treatment facilities trained effectively to cope with NPS. Staff within services do not understand a lot of these drugs and their implications so adequate training is required.'*

## **Discussion**

Increasing trends in the diversification, trafficking and use of NPS continue to present a global public health challenge (European Monitoring Centre for Drugs and Drug Abuse, EMCDDA, 2016). Surveillance struggles to keep up with the ever increasing range of NPS with undocumented toxicological and psycho-activity risks (EMCDDA, 2015; Caudevilla, 2013: 2016). The Internet is driving change in contemporary global drug markets, and

particularly that of NPS (EMCDDA, 2016; Lavorgna, 2014; 2016; van Amsterdam et al., 2016). The study illustrated a descriptive ‘*snapshot*’ of expert perspectives on the current situation in Ireland. Legislative challenges were viewed to centre on the detection in chemical analysis of NPS entering Ireland via the postal system, and also in the urine screening of users in prison and treatment settings. Irish academics have highlighted the need for legislation to support collaborative intelligence gathering activities (Kavanagh and Power, 2014). For the most part legal status, legislative controls and regulation according to these experts had succeeded in closing headshop routes to supply, but with street and online availability contributing to continued and undeterred use of NPS among diverse populations of NPS users. The Global Drug Survey (2016) has reported that almost 10% of Irish users buy drugs on the internet, of which a third are NPS. Social media is also playing a major role in the marketing and sale of NPS (Orsolini et al., 2015), and in the supporting of “*Chemsex*” participation (Lewnard and Berrang-Ford, 2014; Gilbert et al., 2014).

Trends in poly substance use of popular NPS included synthetic cannabinoids, stimulant and psychedelic drugs. Motives for use are similar to that reported elsewhere (Van Hout, 2014; Van Hout & Hearne, 2015; Soussan & Kjellgren, 2016; GDS, 2016). Despite legislation viewed as cross cutting between law enforcement and health (Ryall and Butler, 2011); service responses and preventative measures have not kept up with the increase in poly drug referrals which involve NPS, and the diverse range of NPS used in Ireland. Experts underscored concerns around service provision and clinical responses to the serious mental and physical health consequences of NPS, most often within poly drug repertoires, and compounded when injected. For those engaged in high risk behaviour such as ‘*Chemsex*’ and/or injecting drug use, risks of blood borne virus transmission are a significant concern (Giese et al., 2015; European Chemsex Forum, 2016). An investment in staff training and resources, within an

evidence based approach is required in order to address the challenges relating to NPS use, and particularly now in the formulation of the next National Drug Strategy to support multidisciplinary efforts in prevention and treatment cognisant of the dual diagnosis complications.

## **Conclusion**

The study whilst small scale is unique in terms of providing the national and regional snapshot of expert perspectives around NPS use in the Republic. Whilst legislation has reduced shop sales of NPS, online retail and influx of psychoactive substances into the Republic via the postal system remains an issue. Best practices from elsewhere are warranted to inform the next National Drug Strategy, and support prevention, harm reduction and clinical responses.

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## **References**

Bolding G, Hart G, Sherr L, Elford J. (2006) Use of crystal methamphetamine among gay men in London. *Addiction*, 101, 1622–30.

Bourne A, Reid D, Hickson F, Torres-Rueda S, Weatherburn P (2015a). “Chemsex” and harm reduction need among gay men in south London. *International Journal of Drug Policy*. [Epub ahead of print.]

Bourne A, Reid D, Hickson F, Torres-Rueda S, Weatherburn P (2015b) Illicit drug use in sexual settings ('chemsex') and HIV/STI transmission risk behaviour among gay men in

South London: findings from a qualitative study. *Sexually Transmitted Infections*, 91(8), 564-8.

Brennan, R., Van Hout, M. C. (2014). Gamma-hydroxybutyrate (GHB): a scoping review of pharmacology, toxicology, motives for use, and user groups. *Journal of Psychoactive Drugs*, 46(3), 243–251. <http://dx.doi.org/10.1080/02791072.2014>.

Caudevilla, F.(2016). The emergence of deep web marketplaces: a health perspective. In (Chapter 7) *The internet and drug markets*. European Monitoring Centre for Drugs and Drug Addiction: Insights 21, Publications Office of the European Union, Luxembourg.

Caudevilla, F., Ventura, M., Indave Ruiz, B. I., Fornís, I. (2013). Presence and composition of cathinone derivatives in drug taken from a drug test service in Spain (2010–2012). *Human Psychopharmacology: Clinical and Experimental*, 28(4):341-4.

Cochran SD, Ackerman D, Mays VM, Ross MW. (2004) Prevalence of non-medical drug use and dependence among homosexuallyactive men and women in the US population. *Addiction*; 99: 989–98.

Colfax G, Guzman R. (2006) Club drugs and HIV infection: a review. *Clin Infect Dis*; 42: 1463–69.

Connolly, J. (2012) Impact of legislation to control head shops. *Drugnet Ireland*, 40 (Winter), 29.

El-Higaya E, Ahmed M., & Hallahan B (2011) Whack induced psychosis: a case series. *Irish Journal of Psychological Medicine*, 28, 1, S11–S13.

EUROBAROMETER (2014) European Commission: Brussels.

EUROPEAN CHEMSEX FORUM (2016). 6-8APRIL 2016 London, UK.

European Monitoring Centre for Drugs and Drug Addiction (2015) New psychoactive substances in Europe. EMCDDA: Lisbon.

Global Drugs Survey (2016). Accessed June 20<sup>th</sup> 2016 from <https://www.globaldrugssurvey.com/>

Giese, C., Igoe, D., Gibbons, Z., Hurley, C., Stokes, S., McNamara, S., Ennis, O., O'Donnell, K., Keenan, E., De Gascun, C., Lyons, F., Ward, M., Danis, K., Glynn, R., Waters, A., Fitzgerald, M., and on behalf of the outbreak control team. (2015) Injection of new psychoactive substance snow blow associated with recently acquired HIV infections among homeless people who inject drugs in Dublin, Ireland, 2015. *Euro Surveillance*, 20,40, 1-6.

Gilbart V, Simms I, Gobin M, Jenkins C, Oliver I, Hughes G.(2014). High-risk drug practices associated with *Shigella flexneri* 3a infections among MSM in England and Wales: findings from in-depth interviews. *HIV Medicine*, 15: 14.

Health Research Board. Irish National Focal Point to the European Monitoring Centre for Drugs and Drug Addiction (2016). *Ireland: national report for 2015 – legal framework*. Health Research Board: Dublin.

Heiligenberg M, Wermeling PR, van Rooijen MS, Urbanus AT, Speksnijder AG, Heijman T, Prins M, Coutinho RA, van der Loeff MF. (2012). Recreational drug use during sex and sexually transmitted infections among clients of a city sexually transmitted infections clinic in Amsterdam, the Netherlands. *Sexually Transmitted Diseases*, 39, 518–27.

Hickson F, Bonell C, Weatherburn P, Reid D.(2010) Illicit drug use among men who have sex with men in England and Wales. *Addiction Research and Theory*, 18: 14–22.

Hsieh HF & Shannon SE (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15,9, 1277-1288.

Kavanagh P, & Power J D (2014) New psychoactive substances legislation in Ireland – perspectives from academia. *Drug Testing and Analysis* 6, 7–8, 884–891.

Kirby T, Thornber-Dunwell M. (2013) High-risk drug practices tighten grip on London gay scene. *Lancet* 381: 101–02.

Lavorgna, A (2016). How the use of the internet is affecting drug trafficking practices . In (Chapter 9) *The internet and drug markets*. European Monitoring Centre for Drugs and Drug Addiction: Insights 21, Publications Office of the European Union, Luxembourg.

Lavorgna, A. (2014). Internet-mediated drug trafficking: towards a better understanding of new criminal dynamics. *Trends in Organized Crime* 17,4, 17, 250-270.

Lewnard JA, Berrang-Ford L (2014) Internet-based partner selection and risk for unprotected anal intercourse in sexual encounters among men who have sex with men: a meta-analysis of observational studies. *Sexually Transmitted Infections*,90, 4, 290-6.

Long, J. (2010). *Headshop drugs across Europe: Data from the EMCDDA*. Paper presented at the National Regional Drugs Task Force “Legal Highs” Conference, Mullingar, Ireland.

Martinotti G, Lupi M, Carlucci L, Cinosi E, Santacroce R, Acciavatti T, Chillemi E, Bonifaci L, Janiri L and Di Giannantonio M (2015) Novel psychoactive substances: use and knowledge among adolescents and young adults in urban and rural areas. *Human psychopharmacology* 30,295-301

McCall, H., Adams, N., Mason, D., Willis, J., (2015). What is chemsex and why does it matter? *BMJ* 351:h5790

McElrath, K., Van Hout, MC (2011). A Preference for Mephedrone: Drug Markets, Drugs of Choice and the emerging ‘legal high’ scene. *Journal of Drug Issues*. 41 ,4, 487-507.

Melendez-Torres GJ, Bourne A. (2016). Illicit drug use and its association with sexual risk behaviour among MSM: more questions than answers? *Current Opinion in Infectious Diseases*, 29, 1, 58-63.

Muscat R, Pike B and members of the Coherent Policy Expert Group (2014) *Coherence policy markers for psychoactive substances*. Council of Europe: Strasbourg.

- O'Byrne, P. M., Kavanagh, P. V., McNamara, S. M., & Stokes, S. (2013). Screening of stimulants including designer drugs in urine using a liquid chromatography tandem mass spectrometry system. *Journal of Analytical Toxicology*, 37, 64–73.
- O'Domhnail S., & Ni Chleirigh C (2011) Editorial: Mephedrone and 'head/hemp' shop drugs: a clinical and biochemical 'heads up'. *Irish Journal of Psychological Medicine*, 28, 1, S2–S3.
- Orsolini L., Francesconi G, Papanti D, Giorgetti A, Schifano F. (2015). Profiling online recreational/prescription drugs' customers and overview of drug vending virtual marketplaces. *Human Psychopharmacology*. 30, 4, 302-18.
- Pakianathan MR, Lee MJ, Kelly B, Hegazi A. (2015). How to assess gay, bisexual and other men who have sex with men for chemsex. *Sexually Transmitted Infections* [Epub ahead of print] doi:10.1136/sextrans-2015-052405
- Radio Telefís Éireann. *Arson attack on Dundalk head shop*. Available at: [http://www.rte.ie/news/2010/0415/129915-dundalk/\[11th](http://www.rte.ie/news/2010/0415/129915-dundalk/[11th) July 2016].
- Ryall, G. & Butler, S. (2011) The great Irish head shop controversy. *Drugs Education Prevention and Policy*, 18, 4, 303-311.
- Smyth, B.P., James, P., Cullen, W. & Darker, C. (2015) “So prohibition can work?” Changes in use of NPS among adolescents attending a drug and alcohol treatment service following a legislative ban. *International Journal of Drug Policy*, 26,9,887-889.
- Soussan, C., Kjellgren, A. (2016). The users of Novel Psychoactive Substances: Online survey about their characteristics, attitudes and motivations. *International Journal of Drug Policy* (2016), <http://dx.doi.org/10.1016/j.drugpo.2016.03.007>
- Tully J, Hallahan B., & McDonald C (2011) Benzylpiperazine-induced acute delirium in a patient with schizophrenia and an incidental temporal meningioma. *Irish Journal of Psychological Medicine*, 28, 1, S14–S16.



- Uhoegbu C, Kolshus E, Nwachukwu I, Guerandel A & Maher C (2011) Two psychiatric presentations linked with 'head shop' products. *Irish Journal of Psychological Medicine*, 28, 1, S8–S10.
- van Amsterdam JG1, Nabben T, Keiman D, Haanschoten G, Korf D. (2015). Exploring the Attractiveness of New Psychoactive Substances (NPS) among Experienced Drug Users. *Journal of Psychoactive Drugs* 47(3):177-81.
- Van Hout, M.C. (2014) An Internet study of user's experiences of the synthetic cathinone, 4-Methylethcathinone (4-MEC). *Journal of Psychoactive Drugs*, 46 (4), pp.273–286.
- Van Hout, M.C. (2012) *Designer Psychoactive drugs, the 'Headshop' phenomenon and legislative controls*. In: Lewis, C. (Ed). Ireland: Economic, Political and Social Issues. Hauppauge, NY: Nova Science pp63-76. ISBN 978-1-62257-924-2.
- Van Hout, M.C. & Bingham, T. (2012) A Costly Turn On: Patterns of use and perceived consequences of mephedrone based head shop products amongst Irish injectors. *International Journal of Drug Policy*, 23 (3), pp.188-197.
- Van Hout, M.C. & Brennan, R. (2011a) Heads Held High: An exploratory study of Legal Highs in pre legislation Ireland. *Journal of Ethnicity of Substance Abuse*, 10,3, 256-272.
- Van Hout, M.C. & Brennan, R. (2011b) Plantfood for Thought: A Qualitative Study of Mephedrone Use in Ireland. *Drugs Education Prevention and Policy*, 18,5, 371-381.
- Van Hout, M.C. Brennan, R. (2011c) Bump and Grind: An Exploratory Study of Mephedrone Users' perceptions of sexuality and sexual risk. *Drug and Alcohol Today*, 11, 2, 93-104.
- Van Hout, MC & Hearne, E (2016). User experiences of development of dependence on the synthetic cannabinoids, 5f-AKB48 and 5F-PB-22, and subsequent withdrawal syndromes. *International Journal of Addiction and Mental Health*. Published online before print March 21st 2016 DOI 10.1007/s11469-016-9650-x
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Van Hout, M.C. and Hearne, E. (2015) 'Word of Mouse': Indigenous harm reduction and online consumerism of the synthetic compound Methoxphenidine. *Journal of Psychoactive Drugs*, 47 (1), pp.30-41.

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## **Title page**

The dynamic landscape of novel psychoactive substance (NPS) use in Ireland: results from an expert stakeholder consultation.

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### **Type of Paper**

Brief Report

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