Country report on New Psychoactive Substances in Ireland

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Contents

1 Introduction

There has been a rapid growth in the availability of novel psychoactive substances (NPS), labelled 'legal highs', 'designer drugs', 'synthetic drugs', 'bath salts', and 'research chemicals' over the last number of years (Simonato et al., 2013; ACMD, 2011; Zawilska & Andrzejczak, 2015). NPS have been described by the Advisory Council on the Misuse of Drugs (ACMD) as, *'psychoactive drugs which are not prohibited by the United Nations Single Convention on Narcotic Drugs or by the Misuse of Drugs Act 1971, and which people in the UK are seeking for intoxicant use'* (ACMD, 2011). These substances have been persistently considered as legal alternatives to other illicit drugs of abuse (Deluca et al., 2012) although several of these products are packaged with warnings stating *"not for human consumption"*.

1.1 Ireland and NPS

Research to date on NPS use in Ireland are limited to a small number of qualitative studies (McElrath & O'Neill, 2011; McElrath & Van Hout, 2011; Ryall & Butler, 2011; Smyth et al., 2015; Van Hout & Brennan, 2011a,b,c; 2012; Van Hout & Bingham, 2012; Van Hout & Hearne, 2015a), reviews (Connolly, 2014; Dowling et al., 2013; Kavanagh & Power, 2014; Kelleher et al., 2011; Van Hout, 2013) and government reports (Department of Community, Rural & Gaeltacht Affairs, 2009; Department of health, 2013a,b).

Research on NPS in the Republic of Ireland to date has focused on the pre and post legislative detection of NPS and in particular the popular synthetic cathinone "mephedrone" (Van Hout & Hearne, 2015a). BZP i.e. 1-benzylpiperazine was the first NPS in Ireland to be controlled via a Statutory Instrument (S.I. No. 122/2009) in 2009. BZP had already been banned in New Zealand in 2008, the same year it surfaced in Ireland as a replacement for MDMA at that time (Kavanagh & Power, 2014). In April 2010, the UK banned mephedrone and cathinone derivatives, and in line with the Misuse of Drugs Act (1971) indicated criminal penalizations for possession and supply of those substances. One month after this ban, the Republic of Ireland went on to ban mephedrone and related cathinones (McElrath & Van Hout, 2011).

2 Current Irish Drug Policy

Drug Policy has been defined as "a system of laws, regulatory measures, courses of action and funding priorities concerning (illicit) psychoactive drugs and promulgated by a governmental entity or its representatives" (Kilpatrick, 2000). The Irish Presidency Steering Group on Drug Issues which was set up in early 2012 (Department of Health, 2013b; Pike, 2013) under the leadership of The Drug Policy Unit (Department of Health (DOH)) includes a small number of officials from the DOH, Department of Foreign Affairs & Trade, and the Department of Justice & Equality. This steering group is derived from the International Drug Issues Group (IDIG) which brings together Irish drug policy responses on the international stage each yearly quarter (Pike, 2013).

Ireland's developments in illicit drug policy have followed a remarkable course, with comparisons and differences to that experienced in other European countries (EMCDDA, 2013). In September 2009 a new 'National drugs strategy (interim) 2009–2016' was launched, which reiterated previous approaches implemented in 1996 and 2001 such as the collaboration of representatives from statutory, voluntary and community sectors (Ministerial Task Force on Measures to Reduce the Demand for Drugs, 1996; Quigley, 2010; EMCDDA, 2013) and an increase in public involvement in drug policy developments (Pike, 2008). The pillar model that previously provided structure (Drug Misuse Research Division, 2001; Pike, 2008) covering the areas of: supply reduction; prevention; combined treatment and rehabilitation; research and

information; and co-ordination, was also retained in the new strategy. Public consultation meetings highlighting concern for illicit and NPS drugs were held throughout the development phase of the new drug strategy, and the collaboration between community, statutory and voluntary sectors was again supported in the document (EMCDDA, 2013).

The new Drugs Strategy called for the Department of Health (DOH) to review prevailing laws and to secure loopholes that facilitated the legal sales of NPS (Department of Community, Rural and Gaeltacht Affairs, 2009). Consequently, several drug-related policy and legislative changes were introduced from 2009 onwards in order to address the issue of NPS (EMCDDA, 2013).

2.1 Drug Law, NPS and Ireland

The National Drugs Strategy (NDS) (interim) 2009–2016 specifies the working framework for drugs policy of illicit drugs in Ireland (Department of Community, Rural and Gaeltacht Affairs, 2009). The Strategy has a general strategic objective *'To continue to tackle the harm caused to individuals and society by the misuse of drugs through a concerted focus on the five pillars of supply reduction, prevention, treatment, rehabilitation and research'* (Health Research Board, Irish Focal Point, 2013). The National Advisory Commission on Drugs (NACD)'s sub-group the *"Early Warning System"* informs the EMCDDA and Europol when new substances or cases of interest are discovered in Ireland (Department of Health, 2013a).

In the Republic of Ireland, the primary legislation controlling drugs are the Misuse of Drugs Act 1977 and the Misuse of Drugs Act, 1984. These are further amended by the Criminal Justice Act 1999, the Criminal Justice Act 2006 and the Criminal Justice Act 2007. The Misuse of Drugs Regulations 1988 (SI 328 of 1988) (as amended) registers the different substances to which legislation affects and has two main purposes which establish a control system over specific substances so as to protect the public from dangerous or possibly dangerous or harmful substances. It also enables safe use of specific controlled substances which, even though it can be harmful if misused, has therapeutic and medical significance. As per this legislation, unless specifically authorised to do so, it is illegal to possess, supply, manufacture, import or export a controlled substance (for example stimulants, cannabinoids, or hallucinogens).

Controlling of substances under the Misuse of Drugs Act, works in collaboration, engagement, and compliance with international structures such as the United Nations conventions, which provides an international legal framework that addresses the phenomenon of illicit drugs. These frameworks are aimed at protecting the health of individuals from improper use of controlled substances, and also to ensure use of controlled substances is limited to scientific and medical purposes.

The classification of drugs and precursors in Ireland reflects the three United Nations conventions of 1961, 1971 and 1988. Criminal offences in Ireland are defined as the importing, manufacturing, possession and trade in, other than by prescription, of most psychoactive substances. The primary criminal legislative framework is defined in the Misuse of Drugs Acts (MDA) 1977 and 1984, and the Misuse of Drugs Regulations 1988. The offences of drug possession (s.3 MDA) and possession for the purpose of supply (s.15 MDA) are the primary forms of criminal charge used in the prosecution of drug offences in Ireland. The Misuse of Drugs Regulations 1988 list under five schedules the various substances to which the law applies (Health Research Board, Irish Focal Point, 2013).

NPS are regulated both by individual listing and a generic system. The legal foundation forming these systems is: s.2(2) of the Misuse of Drugs Act 1977; and Governmental Declaration Orders. A memorandum is normally drafted and then submitted to the appropriate Governmental Departments for com-

ments. After inclusion of these commentaries, along with the issue of a Declaration Order, the Minister for Health and Children then forwards the draft to the Government Cabinet of Ministers. Once this Declaration Order has been approved, the Prime Minister will sign it. Then along with any associated regulations or exemption orders, the Declaration Order is put forward to the Houses of the Oireachtas (Lower And Upper Houses) within 21 sitting days (the statutory time frame relative to the Misuse of Drugs Act); subsequently, they are then published in the Irish State Gazette. This process can take up to 6 weeks, though it sometimes can be longer if delays transpire. The process is the same irrespective of the guidelines for placement of new substances under control (EMCDDA, 2009).

2.2 NPS, Public Pressure and Changes to the Law in Ireland

Street based headshops were blamed for the apparent extent of NPS use, mostly amongst youths, in the Republic of Ireland. In 2009-2010, resistance within communities, towards these headshops and the proprietors, involved social media petitions such as on Facebook, protests at shop-fronts, arson attacks, shootings, bomb threats, and plans to completely ban headshops (Van Hout & Brennan, 2011a; Van Hout, 2013). Much media attention and accounts of youths experiencing complications with NPS fuelled this public reaction and were the key factors that contributed to legislative controls over cathinones and a multitude of other NPS in the Republic of Ireland in May 2010 (Coomber et al., 2013). This spurred the government into a rapid and radical response (Ryall & Butler, 2011).

The headshop controversy in Ireland and the resulting legislation is set in the framework of the concept of "moral panic" (Connolly, 2012). It has been described as *"the negative societal consequences of psychoactive drug use tend to be exaggerated – by the media and a range of other "moral entrepreneurs" – thereby serving to legitimate extreme policy responses which, paradoxically, may amplify the very deviance they were intended to curtail"* (Ryall & Butler, 2011, pp. 304).

Over 200 substances were controlled under the Misuse of Drugs Act 1977 (Controlled Drugs) (Declaration) Order 2010. Consequently, the Criminal Justice (Psychoactive Substances) Act was implemented. This was an innovative *"catch-all"* law that would render the sale of any psychoactive substance illegal (Criminal Justice (Psychoactive Substances) Act 2010). In November 2011, the Misuse of Drugs (Controlled Drugs) Declaration Order controlled 60 other substances including synthetic cannabinoids and cathinones (Reitox National Focal Point, 2011). Ireland's legislation in 2010 and 2011 has been successful in limiting the sale of NPS. This was accomplished through a combination of endeavours of numerous statutory agencies and governmental departments (Health Research Board, 2012).

Ireland broadened the capacity to control substances, and included a wider range of substances in the Criminal Justice (Psychoactive Substances) Act 2010. Several headshop products in Ireland were made illegal on 23 August 2010 when the new Criminal Justice (Psychoactive Substances) Act 2010 was passed (Van Hout & Hearne, 2015a). This act is applicable to substances that are not explicitly prohibited under the Misuse of Drugs Acts, although their effects are psychoactive, by making it illegal to sell, import, export or advertise such psychoactive substances. Legislation controlling 200 psychoactive substances was also passed in Ireland in May 2011 under the Misuse of Drugs Act 1977 and 1984. These substances included: benzylpiperazine derivatives, mephedrone, synthetic cannabinoids, methylone and related cathinones, GBL and 1, 4 BD, ketamine, and Tapentadol. Prior to this ban it was reported that legal headshops in Ireland were opening in January 2010 at approximately one per week (Van Hout, 2013).

The objectives of the Criminal Justice (Psychoactive Substances) Act 2010 are to prevent the misuse of harmful substances (Van Hout & Hearne, 2015a). This gave the Irish police – An Garda Síochána, and the

Irish courts the power to prohibit sales of psychoactive substances in the case that such substances were not listed on under the Misuse of Drugs Act, or if they were represented on their packaging as 'not for human consumption', which is often the case (Van Hout, 2013). The Act took a new, non-traditional slant towards drug misuse and supply. It was explicitly aimed at vendors/suppliers and it was an endeavour that forced the closure of Irish headshops. The Act states that 'a person who sells a psychoactive substance knowing or being reckless as to whether that substance is being acquired or supplied for human consumption shall be guilty of an offence'. However there are exceptions for sales of alcohol and tobacco, and medicines, which are governed under different legislation (Kavanagh & Power, 2014).

An emergency piece of legislation, the Misuse of Drugs (Amendment) Act 2015, was ratified as a result of a Court of Criminal Appeal ruling banning possession of over 100 drugs, which included some psychoactive substances, was unconstitutional This Act stipulates that each statutory instrument intended in Schedule 2 of the Act will hold statutory effects just as though it were an Act of the Oireachtas. This legislative revision stipulates that substances that have been controlled before the court judgment by means of Government order, be appended to the Schedule of the 1977 Act (Van Hout & Hearne, 2015a).

The apparent success in Ireland of legislative changes governing NPS may be judged by Smyth et al. (2015) who reported considerable reductions in NPS use amongst adolescents who were entering treatment 6-12 months post legislation also. The report took a broad look at NPS use so as not to conceal use of other emerging substances i.e. not yet controlled NPS, while reducing use of just one single substance (Dargan et al., 2011). Additional new substances did surface on the drugs marketplace in the Republic of Ireland post legislation (O'Byrne et al., 2013; Kavanagh & Power, 2014). Nonetheless, the report showed a decrease in the whole group of NPS use (Smyth et al., 2015)

Irish legislation blanket bans all psychoactive substances. Under this legislation, psychoactive substances are defined substances that stimulate or depress the central nervous system and are associated with dependency, hallucinations or disturbances in motor function and/or behaviour. Exemptions are implemented for substances such as alcohol, caffeine and tobacco as per the Criminal Justice (Psychoactive Substances) Act 2010. Information on "gray areas" in Irish drug law is limited. However, recently Ireland's Minister for Drugs, Aodhdan O Riordain, commented on the issues with NPS and how re-packaging makes it difficult for authorities to control, resulting in legal "grey areas". His comments were stated after the death of a young man in Cork who ingested the substance "25i-nbome" (O'Regan, 2016).

Research on novel psychoactive substances in Ireland to date have essentially focused on the pre and post legislative exposure of psychoactive substances, and the consumption of the synthetic cathinone mephedrone (Van Hout & Brennan, 2012; Van Hout & Bingham, 2012). Research by Kavanagh & Power (2014) scrutinizes the impact law enforcement and legislation has on the emergence of NPS and commonly named 'headshops' in Ireland in recent years. The research particularly considers the adverse impact legislative controls of NPS have had on academic research in this area (Connolly, 2014). The authors suggest reviewing current legislation to allow for academic input that is more targeted towards NPS, although they recognize that affiliations between forensic science and academia can be challenging due to some of the work of the forensic scientists may include substances that may be sub judice. Nonetheless, they contend that Irish legislation should 'provide better mechanism for academia and forensic service providers to work together and share data so that more informed policy decisions can be made' (Kavanagh & Power, 2014, pp. 6).

2.3 Public Health Education and NPS in Ireland

Ireland's National Drugs Strategy provides education programmes in school settings and education programmes in non-school settings, including diversionary programmes primarily developed in Local Drugs Task Force (LDTF) areas. Ireland's Department of Education and Science has numerous substance use education programmes in place that are intended to recognise and provide supports to children/youths at risk of substance use/misuse. These programmes include Youth Encounter Project Schools and the National Educational Psychological Service (NEPS) in school settings (Department of Community, Rural & Gaeltacht Affairs, 2009). The Department offers assistance to schools in fostering substance misuse policies; however the key responsibility in the development and implementation of these policies is with the schools themselves

For those developing and providing education programmes, the greatest challenge when addressing NPS is dealing with users (or prospective users) naivety around their use such as route of administration ROA, dosing, and psychoactive effects, and probably the most worrying – the flawed assumption that the expression "legal high" somehow renders these substances as regulated and/or tested, and therefore safe (Mentor ADEPSIS, 2014).

The Social Personal Health Education (SPHE) Programme is considered the basis for the development of drug and alcohol awareness in schools. This programme is mandatory in second level education in Ireland. The SPHE programme is intended to develop confidence and esteem within young people/schoolgoers through the development of life skills, with substance misuse a fundamental part of the school curriculum While most education guidance and policy in Ireland is centred on all areas of substance misuse, Van Hout & Hearne's (2015b) report on synthetic cannabinoid use recommends consultation with Primary and Secondary schools so as to what supports need to be in place for those delivering SPHE modules so they can include NPS, synthetic cannabinoids and/or emerging trends in NPS use (Department of Community, Rural & Gaeltacht Affairs, 2009).

3 NPS Drug Market in Ireland

Throughout 2009 and 2010, mephedrone was located in drug scenes within Britain (Carhart-Harris, King, & Nutt, 2011; Measham et al., 2010; Winstock et al., 2011) in Northern Ireland (greater Belfast area) (McElrath & O'Neill, 2011) and in Southern Ireland (Waterford, Wexford, Kilkenny & Carlow) (Van Hout & Brennan, 2011a), and was obtainable for sale/purchase through numerous sources such as dealers (McElrath & O'Neill, 2011), street-based headshops (Van Hout & Brennan, 2011a), and online vendors (European Monitoring Centre for Drugs and Drug Addiction, 2010; McElrath & Van Hout, 2011). Although there has been closure of all headshops in Ireland, and products are not openly for sale, it is common knowledge that these are still available and accessible on both the black market or on the internet (Kelleher et al., 2011). A study by (Van Hout & Hearne, 2015a) although limited to small communities in North Eastern Ireland (Monaghan), emphasizes the rising concerns around synthetic drug market dynamics in Ireland.

The most recent 2010/11 general population survey in Ireland reported 3.5% of adults and 6.7% of young adults (15-34) used NPS such as party pills or herbal highs, herbal smoking mixtures, or powders such as cathinones during the 12 months prior to the survey. NPS use has seemed to be decreasing since the introduction of legislation in 2010 and 2011, demonstrated by a reduction in the number of unfavourable incidents reported. A reduction in the detection of cathinone derivatives was also noted via screening of

methadone program clients between 2010 and 2012 (Health Research Board, 2015a). The National Student Drug Survey of Ireland reported a significant decline in the use of synthetic substances (Bingham, O'Driscoll & De Barra, 2015).

3.1 False labelling

Kelleher et al. reported (2011) that of all types of NPS powdered substances in Ireland packaging listed the least amount of information on product contents, 79% of these products did not list any ingredients. The packaging seldom suggests the presence of psychoactive substances in the ingredient listings (where a list exists), however there often is none (See Fig. 1&2) (Psychonaut WebMapping Research Group, 2009; Kavanagh et al., 2010; Europol-EMCDDA, 2010; Gibbons & Zloh, 2010). In comparison, 75% of the tablet form NPS and 67% of the capsule type products in Irish head shops had a list of ingredients. Herbal mixtures did not list ingredients (Kelleher et al., 2011).

Figure 1. Pre-Legislation Labelling

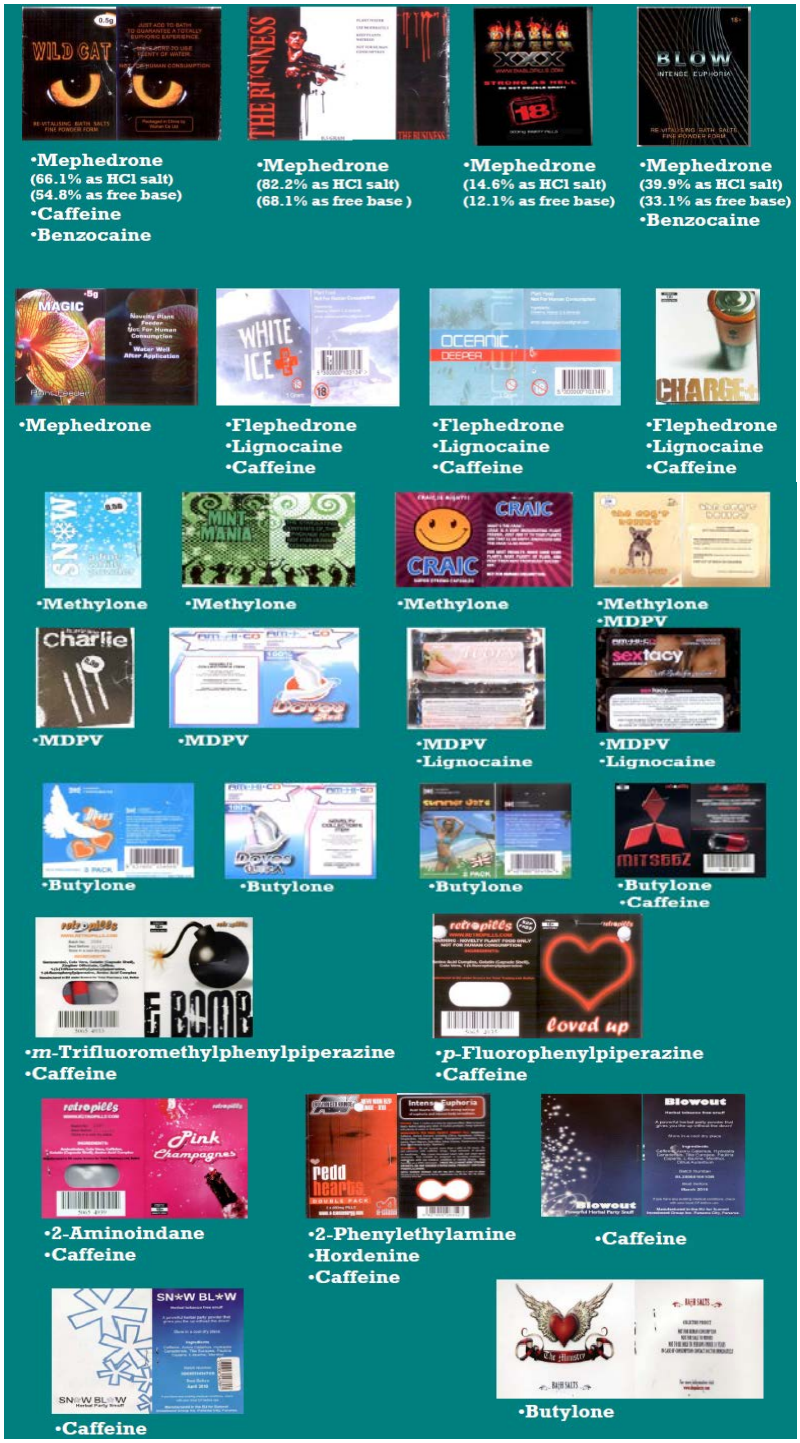
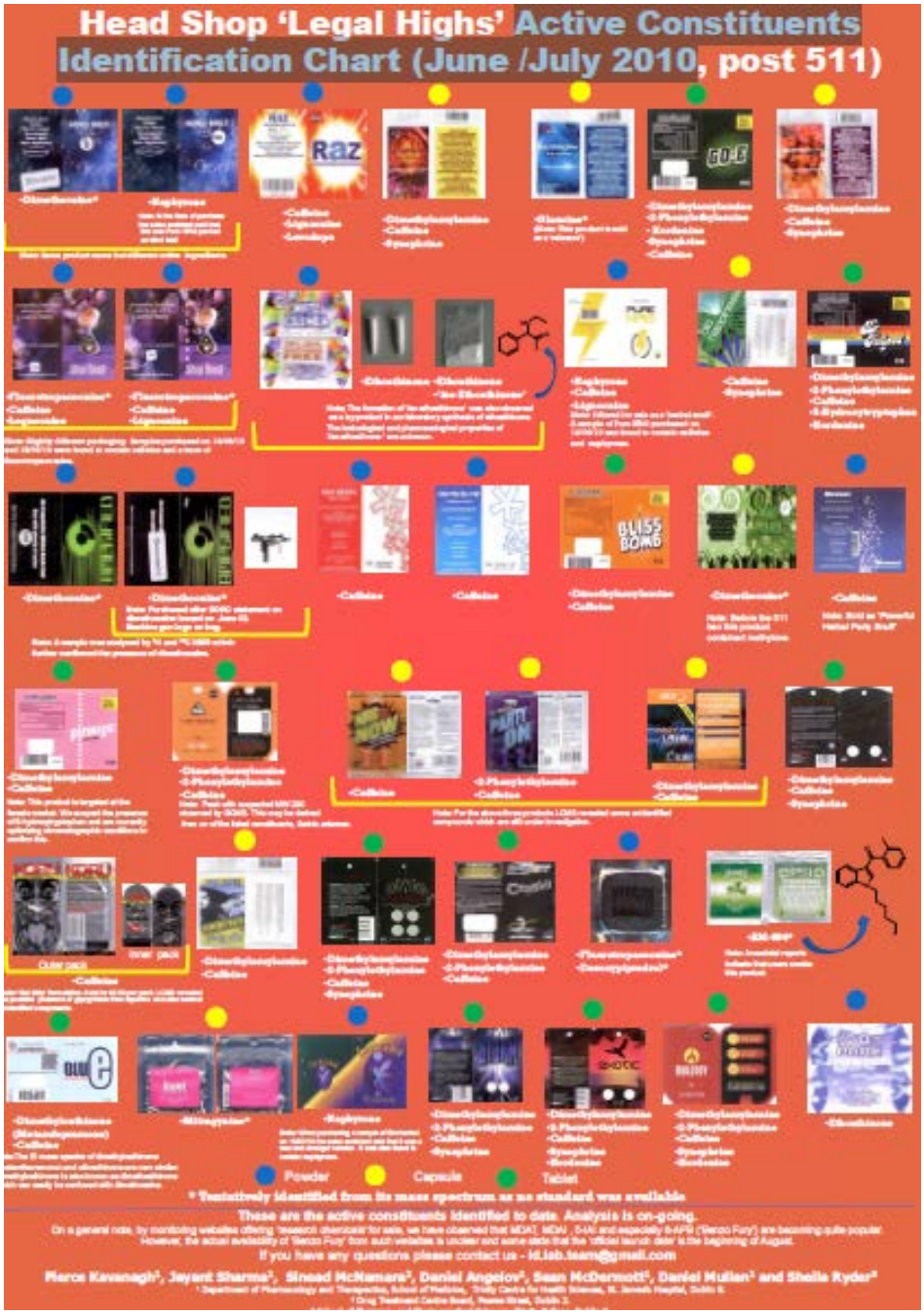


Figure 2. Active Constituents Identification Chart (June /July 2010)



4 NPS Prevalence and Use

Interest in the use of mephedrone in Ireland, prior to legislative controls, was associated with safety (as perceived by users) perceived low potential for harm; competitive prices; and widespread availability online (Van Hout & Brennan, 2011a; Van Hout & Bingham, 2012). Ireland has one of the most comprehensive datasets on mephedrone detected in biologic al samples (human hair, tissues, urine, and blood) (others are in the United Kingdom and Sweden). In Ireland, mephedrone products were reportedly used combined with, or as a substitute for heroin (Europol-EMCDDA, 2010).

A Northern Ireland qualitative study carried out ten weeks post UK legislation investigated sources of mephedrone supply (McElrath & O'Neill, 2011). The study illustrated a developing market for illicit supply of mephedrone, with users stating an increase in reliance of dealers, increased prices, and labelling/packaging differences (McElrath & Van Hout, 2011). The participants in this study reported positive mephedrone experiences, nonetheless they revealed awareness that the legality of the substance did not suggest total safety when used (McElrath & O'Neill, 2011; Kelly et al., 2013).

Van Hout & Brennan (2011a) illustrated how participants had previous experiences with illicit street drugs and had used these as well as NPS products regularly, over the previous 6 month period. At the time of the study, along with cannabis, alcohol, cocaine, ecstasy and other NPS products, Mephedrone was most commonly procured from other users. Participants of the study explained their reasons for use of mephedrone as initially being based on numerous consumptive decision-making features including, curiosity, widespread availability, exposure, use among peers, and competitive cost. Furthermore, the participants noted that in comparison to illicit street drugs such as cocaine or ecstasy, mephedrone strength, purity and effect was positive; they also reported an absence of negative comedown symptomatologies, which further supported their decisions around mephedrone initiation.

It is often a challenge to estimate the prevalence of NPS use, particularly through surveys of the general population. The 2014 Flash Eurobarometer offers insight into this area, via a survey of some 13,000 young adults in the EU member states and aged 15-24, asking about their NPS use. The survey found that 8% of respondents had used an NPS at least once, and 3% of those were in the previous year. The highest rates of NPS use were found to be Ireland (9%), France, Spain (both 8%), and Slovenia (7%). The lowest rates of use were reported by Cyprus and Malta (0%). The majority of respondents who had used an NPS substance in the previous year had either been given them or purchased them from a friend (68%). Around 27% of them had purchased from a drug dealer; 10% from a "specialised" shop (headshop); and 3% purchased on the internet (EMCDDA, 2015a). An EU survey carried out in June 2011, reported that of the 27 EU countries, Ireland was ranked first for the use of NPS, with the UK following closely at fourth (Newcombe, 2013). The European Commission reported (2011) that the lifetime prevalence of NPS use amongst youths was 5% throughout Europe, and at its highest in Ireland (16%). In May 2010 the amount of headshops in Ireland had risen to 102 – which equates to one headshop per 45,000 people (Kelleher et al., 2011) However, following the changes to the law, these headshops have closed so that trading is now 'underground'. Research has indicated a significant use and continuing easy access to NPS, regardless of legislation/bans (McElrath & O'Neill, 2011; Smyth et al., 2015) however the 2015 National Student Drug Survey of Ireland reported a noteworthy decrease in the use of synthetic substances (Bingham, O'Driscoll & De Barra, 2015).

4.1 Routes of Administration

Although NPS can be considered heterogeneous, they can however, be mostly grouped by their route of administration: 1) stimulant NPS, powdered substances (mostly cathinones), are generally administered via insufflation (snorting) (Winstock, Mitcheson & Marsden, 2010); 2) amphetamine type stimulants in tablet form (often Piperazines) are taken orally (Kavanagh & Power, 2014; Smyth et al., 2015). 3) synthetic cannabinoids are administered via inhalation (smoking) (Dargan et al., 2011); 4) a recent trend of NPS use is within the dissociative family, where these powdered substances are administrated by either insufflation, oral or injection (Craig & Loeffler 2014; WHO, 2014; Van Hout & Hearne, 2015b).

Van Hout and Brennan's (2011a) Irish study reported that preferred route of administration for mephedrone appeared to be insufflation, from a coin dipped in the mephedrone (bumping) or in lines; and ranges from 0.5 to 2g, frequently administered over the course of a mephedrone episode – generally 6 to 12 hours in length. The majority of participants professed "to trust their own judgement" based on past experiences of mephedrone use, in relation to the frequency of administration and reaching the desired mephedrone rush/high. The remaining participants considered novice users, took advice on administering the substance from headshop staff and their peers.

4.2 Demand Recent Trends

The use of headshop products prior to legislation in north and southern Ireland was common amongst a variety of drug using cohorts, in all classes, and included recreational drug using adolescents, PWID, and psychonauts (McElrath & Van Hout, 2011; Ryall & Butler, 2011; Van Hout & Brennan, 2011a; Van Hout & Bingham, 2012; Van Hout, 2013).Many Irish and Northern Irish studies reported on the cross border use of headshop products emphasising the effect of large scale drug market influences on consumer choices to purchase headshop substances, at a time when street drugs such as amphetamine, MDMA, and cocaine were poor quality (McElrath & O Neill, 2011; Van Hout & Brennan, 2011a; b; McElrath & Van Hout, 2011; Kelleher et al., 2011; Van Hout & Bingham, 2012; Van Hout, 2013).

While Irish NPS users stated their intentions to maintain use of headshop products, follow-up studies reported users ceasing NPS use and reverting back to illicit street drug sourcing/use (Van Hout & Brennan, 2012; Van Hout & Bingham, 2012). This was seemingly due to users negative "come up" and "come-down" experiences such as psychosis with continued use of NPS over time; increase in price; concerns around contamination; and a rise in the development of improved quality illicit street drugs such as amphetamine, MDMA and cocaine post legislation (Van Hout & Brennan, 2012; Van Hout, 2013).

A report by Irish Focal Point (2014) reported that with regard to NPS use amongst Irish people, 53% felt that a ban should only be put in place if the substance posed risks to health, 29% felt that regardless of the circumstance they should be banned, and 17% felt that regulation would be best. Ireland's 2010 blanket ban led to the closure of all headshops nationwide. Reports have shown that this considerably reduced NPS use amongst youths in Ireland (Smyth et al., 2015). Nonetheless, NPS use has not been completely eliminated, with reports of morbidity and mortality related to ongoing NPS use. This law is challenging to enforce, as it is determined by scientists who endeavour to prove the psychoactive effects of the substances, which is complex (Easton, 2015). Even though stricter legislation may reduce the use of NPS, complete elimination is unlikely (Gilani, 2015).

4.3 Socially Marginalised Users

Data on NPS use among socially marginalised individuals in Ireland is limited. Of interest and in contrast to previous literature on mephedrone as a party and internet drug, a study by Van Hout and Bingham (2012) noted that 7 participants of the study were homeless. It was reported that these individual's practiced groin and street injecting frequently. Mephedrone based products at that time were said to be the ideal 'homeless persons' drug'. Prior to the study, some charities based in Dublin had shown concerns relating to the injecting of these NPS products among the homeless population in late 2009 (see www.dublinpeople.com). Another Irish study reported pockets or clustering of synthetic cannabinoid use in a small community related to: accessibility; users living in deprived or marginalised areas; social networks of users; and penetrating into more mainstream communities (Van Hout & Hearne, 2015a).

4.4 Night Life Users

Data on night life users of NPS in Ireland is also limited. Past research, while exploratory and regional by context, reported that mephedrone use was popular in Ireland within polydrug user groups, with user practices of consuming mephedrone supported by prior drug taking experiences and involvement in the dance music scene (Van Hout & Brennan, 2011a). Irish research described how mephedrone users discussed powerful individualistic experiences within a variety of socially suitable group contexts e.g. nightclubs, dance music festivals, at parties, and in houses (Van Hout & Brennan, 2011b).

Research carried out with a small group of nightclub users in Ireland post legislation, indicated a reduction in the use of mephedrone, with less than half of the participants reporting continued use of the substance (Van Hout & Brennan, 2012). Users who continued to use mephedrone kept it compartmentalized within house party and weekend club events, and they did not report any loss of control around use or cravings. Although this post-legislative study is limited to a small number of club drug users, it is suggestive of a reduction in popularity of mephedrone due to a rise in emergence of good quality cocaine and MDMA in 2012. Research carried out in 2009/2010 also found that the desired social context for mephedrone use was portrayed as a shared experience in the company of a small number of close friends. The researchers found little evidence that would label mephedrone as a "club drug" (McElrath & O'Neill, 2010). Another Irish study with club drug users reported the use of mephedrone as both a club drug and a sexual stimulant (Van Hout & Brennan, 2011c).

4.5 Online Communities

Irish users of NPS in pre-legislative studies were reported to be undeterred by the changes in legislative control and stated intentions to purchase and stock up on preferred products, use web based headshops, and to buy from dealers so they could continue use of NPS such as mephedrone (McElrath & O Neill, 2011; McElrath & Van Hout, 2011; Van Hout & Brennan, 2011a; b). Irish research has shown that a great deal of trust is placed not only in peers, but in online discussion fora, amongst NPS users in Ireland. Advise on the use of mephedrone provided by both online drug user fora and headshop staff (pre-legislation) was considered trustworthy and considered these sources to optimise safe usage and harm reduction for the users (McElrath & Van Hout, 2011). Van Hout & Brennan (2011) reported post-legislative behaviours differed amongst some users in Ireland, some intending to return to street drug trade and thus continuing with illegal use of mephedrone; some users waited for varied cathinone derivatives in headshops; and others considered the purchase of online sales of mephedrone. A more recent study by Irish researchers reported that users of the online marketplace "silk road" showed general wariness toward untested NPS and seemed to limit their purchasing to more common illicit substances such

as cannabis, MDMA, cocaine, LSD, ketamine and heroin, which were deemed to be "safer" (Van Hout & Bingham, 2013). The media in Ireland has reported on the conviction of two Irish drug dealers active on the Dark Web, and dispatching drugs from Dublin to many global destinations (Bohan, 2014).

4.6 Problematic Users

Research in Ireland highlights the potential some NPS products such as mephedrone or MDPV have for cravings, compulsive re-dosing and uncontrollable binge use (known as *'fiending'*), and how this is due to its short duration effect (2-3 hours) (Europol-EMCDDA, 2010). Problematic polydrug users have been reported as limiting their use (regularly injecting) to synthetic stimulants e.g. mephedrone and methylenedioxypyrovalerone, MDPV (Ryall & Butler, 2011; Van Hout & Bingham, 2012).

In February 2015, the Department of Public Health (DPH), Health Service Executive (HSE), recognised a sudden rise in the number of acute cases of HIV infection amongst PWID. In January and February 2015, 3 cases were diagnosed p24 antigen-positive, in contrast with only 2 cases diagnosed throughout the whole of 2014 (Glynn et al., 2015).

Drug treatment medical professionals had at that time recognised increased use of an NPS alphapyrrolidinovalerophenone (α-PVP), known on the street as *"snow-blow".* This substance was described as being used by chaotic PWID, and they suspected it may have been related to the increase in HIV diagnoses. This study amongst chaotic PWID who were also homeless in Dublin, , presents the first known evidence of links between injecting of α-PVP and recent HIV infection, with daily injectors of the substance being at the greatest risk (Giese et al., 2015). These epidemiological outcomes are supported by α-PVP detected in urine samples of the cases. α-PVP is a second generation cathinone and is directly linked to MDPV, and exhibits similar abuse potential (Van Hout & Bingham, 2012; O'Byrne et al., 2013; Europol-EMCDDA, 2015).

The findings in the study are consistent with established effects of other synthetic cathinones and the risky injecting practices related to their use (Van Hout & Bingham, 2012; Cameron et al., 2014; Marusich et al., 2014; Watterson et al., 2014; Aarde et al., 2015). There are more than 500 homeless PWID in Dublin, Ireland (Giese et al., 2015) and recent studies in Ireland have documented the use of synthetic cathinones amongst homeless PWID (Van Hout & Bingham, 2012).

5 Prevention Activities

A report by Kelleher et al. (2011) revealed the outcomes of an NPS review within the Irish perspective, which included a review of the markets supplying the substances. This review was authorized by the National Advisory Committee on Drugs (NACD) in accordance with Action 14 of the National Drugs Strategy (interim) 2009–2016. Action 14 stipulates the monitoring of headshops and other sales outlets of NPS, under the Misuse of Drugs Act 1977 and the Misuse of Drugs (Amendment) Regulations 2007. The review was carried out between May and August 2010 by researchers at the Centre for Social and Educational Research (CSER) within the School of Social Sciences and Law at Dublin Institute of Technology (DIT), and at the School of Chemical and Pharmaceutical Sciences (DIT). This report recommended:

- Efforts put in place to observe online monitoring models already in existence;
- Collaborate more meticulously with UK and other EU countries' initiatives that are aimed at constraining access to NPS.

- data collected at hospital level be centralised appropriately in agencies such as the Economic and Social Research Institute (ESRI) (which details hospital admissions each year), the Health Research Board (HRB), or the National Advisory Committee on Drugs (NACD). This is so as to give a clearer, empirical representation of the harm being caused due to NPS thus replacing the system (which was present at that time) of reliance on anecdotal reporting
- Standard reporting of NPS intoxication to the National Poisons Information Centre
- Usage of online social media platforms such as Facebook, to give a much more dynamic stating of NPS risks. Additionally, placing advertisements there and actively engaging with chat room threads
- Specifically targeted interventions towards polydrug substance users
- In light of changes in consumption choices and patterns of NPS use due to legislative changes, the report recommended these changes be observed and assessed so as to identify any emerging new risks and to respond appropriately
- The establishment of a laboratory specifically dedicated to rigorous testing of new and emerging NPS
- Establishment of a reference standards company/body in Ireland that can respond more swiftly as new products appear on the NPS market
- Continually adopting a pragmatic public health approach to NPS.

5.1 Supply and Harm Reduction

Ireland's specific challenges for supply reduction include: NPS, precursor chemicals, synthetic opioid analgesics particularly tramadol, illicit production of coca bush, opium poppy, and cannabis plants, and illicit drug manufacture, supply, and trafficking (Pike, 2014). The National Drugs Strategy 2009-2016 endeavours to monitor headshop activities (pre-legislation) and all other businesses concerned with NPS sales (e.g. online vendors), with the objective of guaranteeing no illegal actions are undertaken. This strategy also ensures that legislative steps are/were taken to in respect of NPS legality and where it is deemed appropriate, and to consistently monitor and review drugs related legislation, specifically in the area of NPS, and refer to EU and a wider international experience and best practice (Department of Health, 2013a). Unfortunately demand reduction data such as custom and excise seizure data relating to NPS is unavailable in Ireland.

Much harm reduction information in Ireland is based around needle exchange services aimed at reducing harm to injecting drug users and the spread of blood borne viruses (Van Hout & Hearne, 2015a). However, some services have focused on NPS harm reduction. The Anna Liffey Drug Project, has distributed a brochure providing harm reduction information on novel psychoactive substances – "legal highs or otherwise." (Fig. 3). In 2010, the Health Service Executive (HSE) launched a national drug awareness campaign "Legal or illegal highs – they're anything but safe" (Fig.4). This campaign is predominantly aimed at individuals aged between 15 and 40 years. The campaign consisted of information on t-shirts, posters, and wallet cards; relating to the dangers of and harm reduction advice on NPS. The campaign also includes an information booklet for parents explaining all aspects of NPS use, legal issues, harm reduction

advice, and how to deal with someone having a negative reaction to a synthetic substance (Reitox National Focal Point, 2011).

Figure 3. The Ana Liffey Drug Project "legal highs or otherwise" leaflet

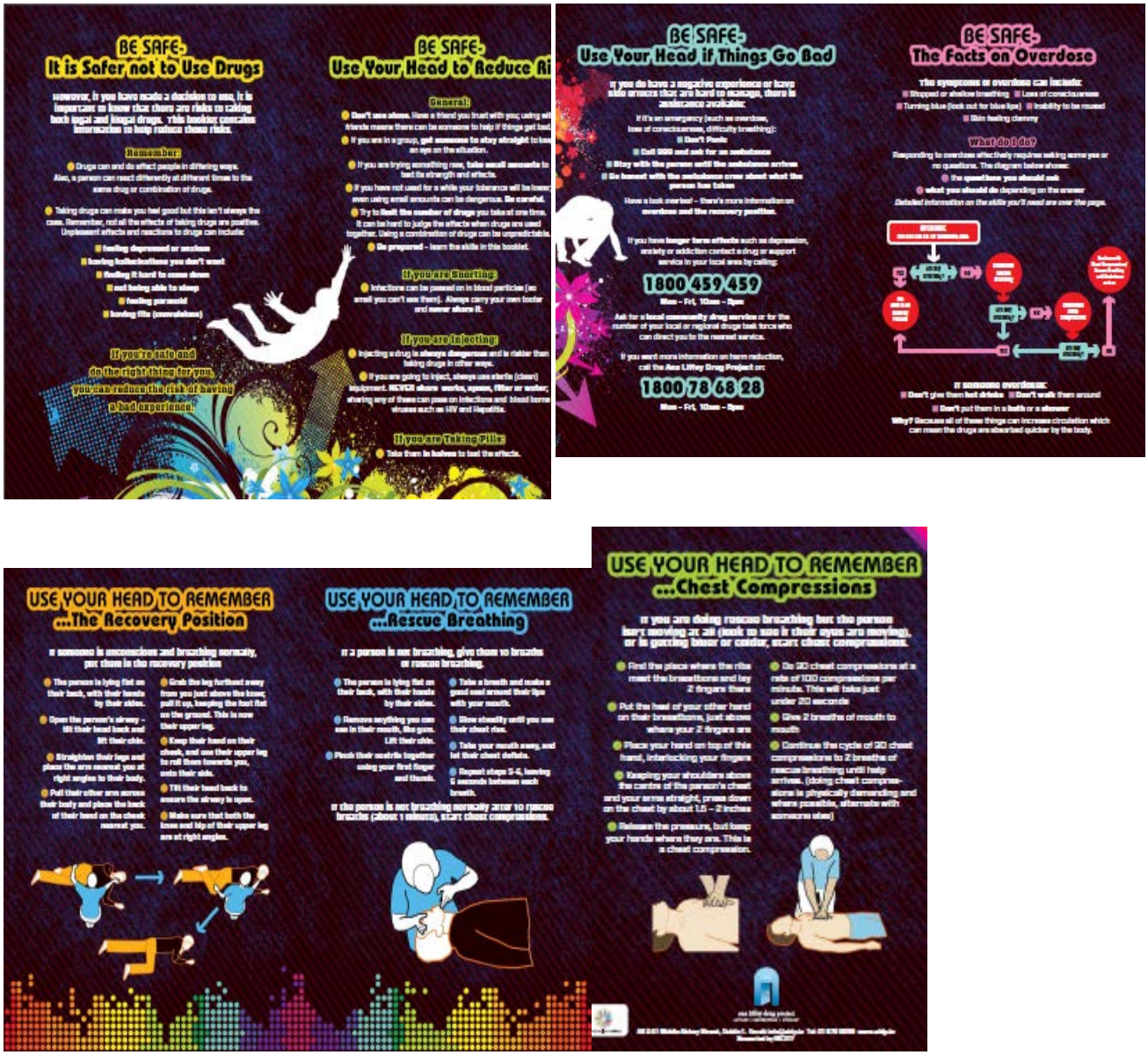
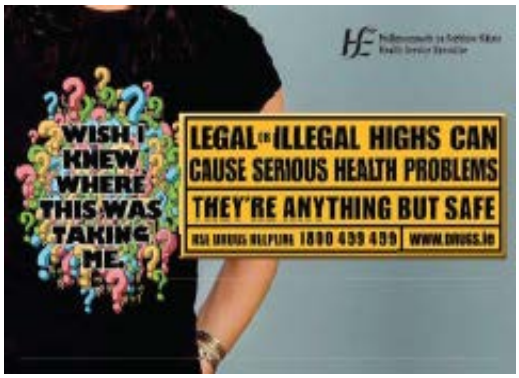
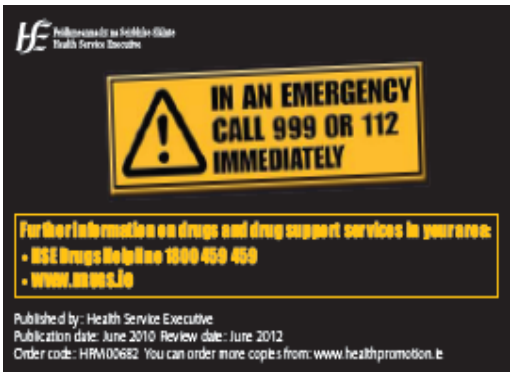
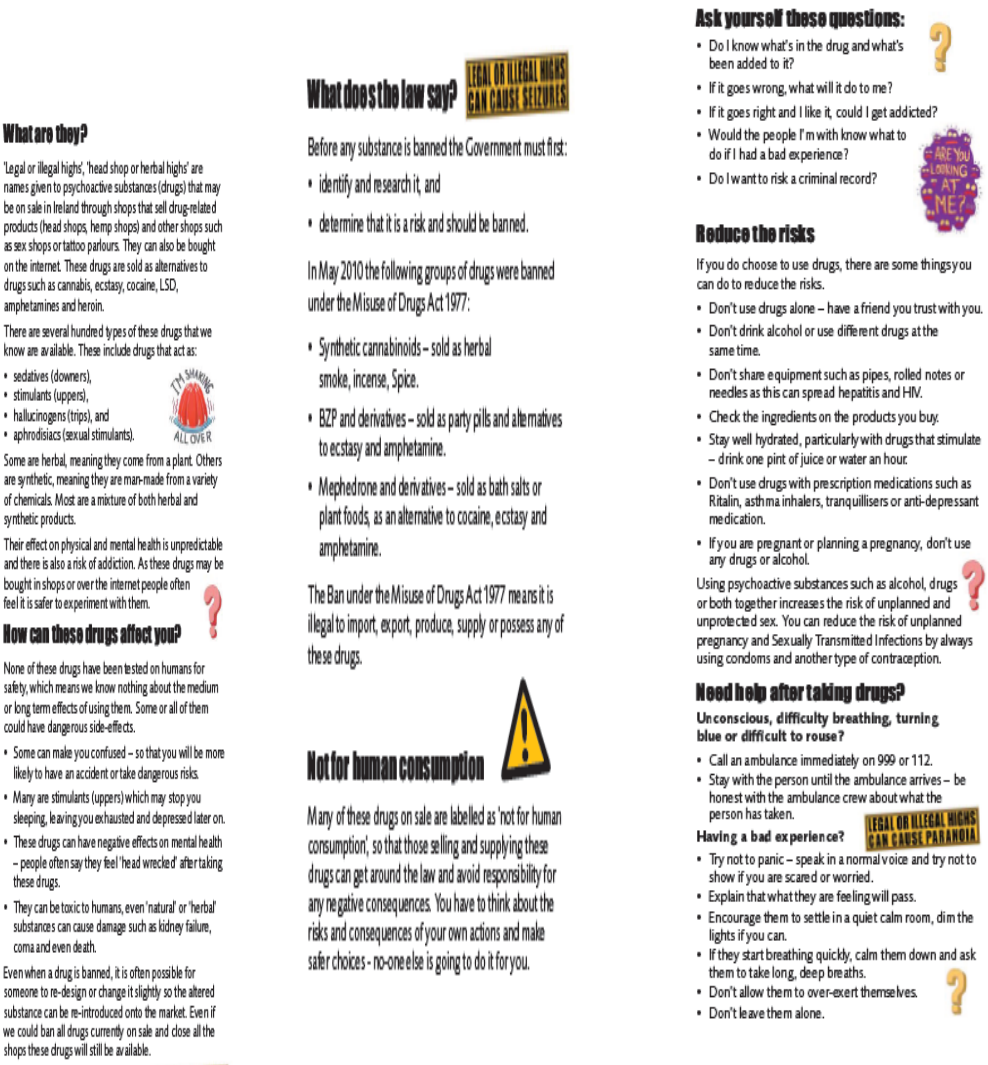


Figure 4. Health Service Executive national drug awareness campaign "Legal or illegal highs – they're anything but safe" leaflet







What are they?

'Legal or illegal highs', 'head shop or herbal highs' are names given to psychoactive substances (drugs) that may be on sale in Ireland through shops that sell drug-related products (head shops, hemp shops) and other shops such as sex shops or tattoo parlours. They can also be bought on the internet. These drugs are sold as alternatives to drugs such as cannabis, ecstasy, cocaine, LSD, amphetamines and heroin.

There are several hundred types of these drugs that we know are available. These include drugs that act as:

- sedatives (downers),
- stimulants (uppers),
- hallucinogens (trips), and
- aphrodisiacs (sexual stimulants).

Some are herbal, meaning they come from a plant. Others are synthetic, meaning they are man-made from a variety of chemicals. Most are a mixture of both herbal and synthetic products.

Their effect on physical and mental health is unpredictable and there is also a risk of addiction. As these drugs may be bought in shops or over the internet people often feel it is safer to experiment with them.

How can these drugs affect you?

None of these drugs have been tested on humans for safety, which means we know nothing about the medium or long term effects of using them. Some or all of them could have dangerous side-effects.

- Some can make you confused – so that you will be more likely to have an accident or take dangerous risks.
- Many are stimulants (uppers) which may stop you sleeping, leaving you exhausted and depressed later on.
- These drugs can have negative effects on mental health – people often say they feel 'head wrecked' after taking these drugs.
- They can be toxic to humans, even 'natural' or 'herbal' substances can cause damage such as kidney failure, coma and even death.

Even when a drug is banned, it is often possible for someone to re-design or change it slightly so the altered substance can be re-introduced onto the market. Even if we could ban all drugs currently on sale and close all the shops these drugs will still be available.

What does the law say?

LEGAL OR ILLEGAL HIGHS CAN CAUSE SEIZURES

Before any substance is banned the Government must first:

- identify and research it, and
- determine that it is a risk and should be banned.

In May 2010 the following groups of drugs were banned under the Misuse of Drugs Act 1977:

- Synthetic cannabinoids – sold as herbal smoke, incense, Spice.
- BZP and derivatives – sold as party pills and alternatives to ecstasy and amphetamine.
- Mephedrone and derivatives – sold as bath salts or plant foods, as an alternative to cocaine, ecstasy and amphetamine.

The Ban under the Misuse of Drugs Act 1977 means it is illegal to import, export, produce, supply or possess any of these drugs.

Not for human consumption

Many of these drugs on sale are labelled as 'not for human consumption', so that those selling and supplying these drugs can get around the law and avoid responsibility for any negative consequences. You have to think about the risks and consequences of your own actions and make safer choices - no-one else is going to do it for you.

Ask yourself these questions:

- Do I know what's in the drug and what's been added to it?
- If it goes wrong, what will it do to me?
- If it goes right and I like it, could I get addicted?
- Would the people I'm with know what to do if I had a bad experience?
- Do I want to risk a criminal record?

ARE YOU LOOKING AT ME?

Reduce the risks

If you do choose to use drugs, there are some things you can do to reduce the risks.

- Don't use drugs alone – have a friend you trust with you.
- Don't drink alcohol or use different drugs at the same time.
- Don't share equipment such as pipes, rolled notes or needles as this can spread hepatitis and HIV.
- Check the ingredients on the products you buy.
- Stay well hydrated, particularly with drugs that stimulate – drink one pint of juice or water an hour.
- Don't use drugs with prescription medications such as Ritalin, asthma inhalers, tranquillisers or anti-depressant medication.
- If you are pregnant or planning a pregnancy, don't use any drugs or alcohol.

Using psychoactive substances such as alcohol, drugs or both together increases the risk of unplanned and unprotected sex. You can reduce the risk of unplanned pregnancy and Sexually Transmitted Infections by always using condoms and another type of contraception.

Need help after taking drugs?

Unconscious, difficulty breathing, turning blue or difficult to rouse?

- Call an ambulance immediately on 999 or 112.
- Stay with the person until the ambulance arrives – be honest with the ambulance crew about what the person has taken.

Having a bad experience?

LEGAL OR ILLEGAL HIGHS CAN CAUSE PARANOIA

- Try not to panic – speak in a normal voice and try not to show if you are scared or worried.
- Explain that what they are feeling will pass.
- Encourage them to settle in a quiet calm room, dim the lights if you can.
- If they start breathing quickly, calm them down and ask them to take long, deep breaths.
- Don't allow them to over-exert themselves.
- Don't leave them alone.

5.2 Treatment

This information is extremely limited in Ireland. However, one recent report showed the numbers of people seeking treatment for NPS as their primary problem substance in 2013 was minimal (Health Research Board, 2015a).

5.3 NPS related Deaths

Once laboratory standards were offered in 2009, NPS started to emerge in drug-related deaths in Ireland. The figures for NPS related deaths increased from 5 deaths in 2009 to 15 deaths in 2013. The majority of these deaths were related to polydrug use (Health Research Board, 2015b). The substances sold/used as MDMA-type substances - PMA (para-Methoxyamphetamine) and PMMA (para-Methoxy-N-methylamphetamine) – were concerned with less than 5 deaths as recorded in 2012 (Health Research Board, 2015a).

6 Conclusions

The report has presented extant available data on NPS in Ireland, and situated within the European context for monitoring of trends, legislative controls and intervention activity. Given the recent legislative changes in Ireland, coupled with the decrease in NPS prevalence and availability of headshops, greater focus is still warranted to monitor online sourcing of NPS from Irish customers, continued harm reduction dissemination to all types of users and localised surveillance of new trends.

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