National Report on New Psychoactive Substances Expert Interviews in Ireland

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1 Introduction

In the Republic of Ireland, legislators encountered a new phenomenon in 2005 onwards with the advent of 'legal highs' sold in headshops (Kavanagh & Power, 2014).[1] By May 2010, the number 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 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) labelled with drug associated nomenclature (Van Hout, 2012).[2] Examples of product labelling included 'Sky High', 'Plant food', 'M1', 'Miaow Miaow' 'Wildcat' 'Charge', 'Snow','Oceanic', 'Bolts', 'Blow' 'Charleeze', 'Jaxx', 'XXX' , 'Red Devil', 'Diablo's', and 'Purple Ohms' (Van Hout & Brennan, 2011a; Ryall & Butler, 2011). Use of these headshop products was not confined to problematic drug users, and included social recreational users (McElrath & Van Hout, 2011; Van Hout & Brennan, 2011a; Van Hout & Bingham, 2012). Ryall & Butler's (2011: 306) in their qualitative study commented on headshop owners' 'broad base of customer support for her industry'. User decisions to try headshop products 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 on methadone (Van Hout & Brennan, 2011a;b;c; Ryall & Butler, 2011, McElrath & Van Hout, 2011; Van Hout & Bingham, 2012). Users appeared to perceive products as safe, with little awareness around risk relating to product toxicity and lack of regulation, with users often reliant on headshop staff for advice around use (Van Hout, 2012).

The exponential rise in popularity of a diverse range of 'legal highs' especially the cathinone derivatives and indole-based cannabimimetics contributed to political and societal concerns in the Republic of Ireland at the time (Kavanagh & Power, 2014). Clinical concerns centred on the presence of these NPS in diagnosis of those presenting with psychosis and suicidal ideation (Tully et al.,2011; O'Domhnail & Ni Chleirigh, 2011; El-Higaya et al., 2011; Uhoegbu et al., 2011). Amid user hospitalisations and fatalities, and attacks on several headshops in 2010, media reporting and public protests ensued (Radio Telefís Eireann, 2010). In efforts to protect their industry, the Alternative Traders Ireland (ATI) was formed in 2010 as response to public controversy and in order to act as trade union representing the headshop trade in the Republic of Ireland. They were keen to promote regulation and corporate social responsibility via an ethical code of practice for the sale of 'legal highs' (for example voluntary restrictions on the sale of these products to those under 18 years, in school uniforms, to those intoxicated, through hatches and late opening hours) (Ryall & Butler, 2011). Community lobbying and media sensationalism ultimately contributed to legislative controls and government intervention to address the sale of 'legal highs' in headshops (Van Hout & Brennan, 2011a; Ryall & Butler, 2011; Van Hout, 2012). Prior to these controls, headshops were opening at a rate of one per week in January 2010 (Van Hout, 2012). The Irish government responded with outright prohibition, with legislation seen as cross cutting activity between law enforcement and health (Ryall & Butler, 2011).

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[1] A headshop 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.

[2] The types of herbal and synthetic products purchased Irish headshops included the stimulant ephedrine ('Sida cordifolia', 'Ma Haung'), morning glory ('Ipomoea'), and Hawaiian woodrose ('Argyreia nervosa'); divine mint ('Salvia divinorum'), containing salvinorins; Peyote, San Pedro, and Peruvian torch (hallucinogenic cacti containing mescaline); 'Kratom' containing the stimulant leaf mitragynine; piparazines such as 1-BZP, methylbenzylpiperazine, meta chlorophenylpiperazine, and 1-(4-fluorophenyl); 'Spice' products containing synthetic cannabinoids (SCBs); and beta-ketoamphetamines containing derivatives of cathinone, a plant based stimulant; and Neorganics sold as legal alternatives to ecstasy ('Neo Dove 1'and 'Neo Dove 2') (Long, 2010).

1.1 Legislation in the Republic of Ireland

In the Republic of Ireland, the primary legislation controlling drugs are the Misuse of Drugs Act 1977; the Misuse of Drugs Act, 1984; the Criminal Justice Act 1999, the Criminal Justice Act 2006 and the Criminal Justice Act 2007. Controlled substances are those which affect the central nervous system by producing a mind altering effect, and which are either known to be or have the potential to be dangerous or harmful to human health, including abuse liability or social harm. Under this legislation, unless expressly permitted to do so, it is illegal to possess, supply, manufacture, import or export a controlled substance. In the case of 'legal highs', the Irish Criminal Justice (Psychoactive Substances) Act 2010 assumed a novel, non-traditional approach to addressing supply on 23rd August 2010 and was an innovative "catch-all" law applicable to substances not explicitly prohibited under the Misuse of Drugs Act 1977, although their effects are psychoactive, by making it illegal to sell, import, export or advertise such psychoactive substances. Ireland has set its definition of psycho-activity to a certain threshold, in the form of 'significant' mental disturbance or change (EMCDDA, 2015). To give effect to this decision, on the same day the Minister for Health and Children signed the Misuse of Drugs (Amendment) Regulations 2010, the Misuse of Drugs (Designation) (Amendment) Order 2010, and the Misuse of Drugs (Exemption) (Amendment) Order 2010. Under these statutory instruments, 200 individual 'legal high' psychoactive substances (benzylpiperazine derivatives, mephedrone, synthetic cannabinoids, methylone and related cathinones, GBL and 1, 4 BD, ketamine, Tapentadol) were declared controlled drugs (Long, 2010; Connolly, 2012). This gave powers to the Garda Síochána (Irish police) and Irish courts to prohibit the sale of psychoactive substances in the event that such substances were not on the listing advised under the Misuse of Drugs Act, and if product packaging represented them (as frequently the case) as 'not for human consumption'(Van Hout, 2012). Following this legislation, headshop numbers declined from 112 to just 12 by September 2010 (Smyth et al., 2015). On the 1st of November 2011, the then Minister of State with responsibility for Drugs Strategy, approved an Order declaring an additional number of 60 'legal highs' (further cathinone substances, naphthylpyrovalerone and related substances, synthetic cannabinoid (SCB) substances, dimethocaine and desethyl dimethocaine, desoxypiprado, aminotetralins andaminoindans , fluorotropacocaine, salvinorin mitragynine and 7-hydroxymitragynine) to be controlled drugs under the Misuse of Drugs Acts. Ryall & Butler (2011) at the time speculated how legitimisation of this extreme drug policy response could be threatened by legal loopholes in headshop trading, displacement of NPS into underground illicit drug markets, and challenges to the constitutionality of the legislation itself. Indeed, on the 10th of March 2015, the Misuse of Drugs (Amendment) Act 2015 (an emergency legislation), was enacted following a Court of Criminal Appeal ruling that legislation banning the possession of more than 100 drugs (including certain psychoactive substances) was unconstitutional. Consequently, for one day (11th of March 2015) many headshop psychoactive substances and an assortment of other synthetic drugs including amphetamine, MDMA, Khat and ketamine were legal to possess in Ireland. The following day the new legislation (Misuse of Drugs (Amendment) Bill) was enforced (Health Research Board, 2016).

1.2 User Patterns and Public Health Challenges in pre and post Legislative Timeframes

Pre-legislative studies in the Republic of Ireland indicated that Irish headshop drug users were not deterred by impending legislative controls, and reported stockpiling of products (particularly the synthetic cathinone, Mephedrone) and accessing online retailers (McElrath & Van Hout, 2011; Van Hout & Brennan, 2011a;b). Small-scale post legislative studies reported on a 'temporary displacement' with users ceasing use and others switching back to the conventional street sourcing (Van Hout & Brennan, 2011a:b; McElrath & Van Hout, 2011). Kavanagh & Power (2014) commented on the reduction between 2010 and 2012 in post- mortem blood samples testing positive for cathinone derivatives, and decreases in presence of cathinone derivatives

in urine samples of methadone programme patients between 2010 and 2011. In later years, legislative controls were speculated to have incurred some positive results, with small scale studies reporting on reduced prevalence of NPS use in cohorts of problematic drug users, namely high risk youth (Smyth et al., 2015); and treated heroin dependent adults (O'Byrne et al., 2013). The Eurobarometer (2014) however has reported on increases in young persons (15-24 years) use of 'legal highs' in Ireland (16%-22%). The Global Drug Survey (2016) indicates that almost 10% of Irish users buy drugs on the internet, of which a third are NPS. In July 2015, the Irish government reported on 33 seizures of former headshop substances (GABA activating psychoactive substances; pentedrone, 4MEC, ethylone, and methylone) in the past year, with the majority passing through the postal system and originating from Asian countries. Recent studies have also reported on continued cross border drug tourism with the North, particularly in the trade of SCBs, 5f-AKB48 and 5F-PB-22 (Van Hout & Hearne, 2016). Public health services continue to respond to the spate of hospitalisations and fatalities (2012-2016) due to consumption of-PVP, PMMA, 2C-B, 2CP and 2Cl, and its derivative 25I-NBOMe. Other concerns centre on the rise in newly acquired HIV infection in people who inject drugs (PWID) who are reported to be using a-PVP in Dublin in 2015 (Giese et al., 2015).

The study aimed to investigate national and regional expert views and perspectives on the NPS phenomenon in the Republic of Ireland in 2016, with particular emphasis on current legislation and drug policy, user trends and consequences, sourcing routes, and prevention, harm reduction and treatment responses.

2 Methods

A qualitative study was conducted with 13 national and regional professional experts across the Republic of Ireland. Participants were selected based on their expert status, (national and if not national, their regional status representing the five regions in Ireland), and secondly their expertise in the area of NPS, drug policy and public health. 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 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) based on the literature, and prior experiences in conducting research on NPS.[3] 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 main themes emerged from the data and centred on the following; 'Definitions of NPS used within Professional Roles'; 'Professional Experiences of NPS'; 'Types of NPS Users, Consumption Patterns and Consequences of Use'; and 'Legislation, Policy Approaches and Prevention.'

[3] Appendix I Guide

3 Results

3.1 Participant Profile

Four females and nine males, with ages ranging from 30 to 59 years completed the study. One participant declined to give his age. Duration of professional experience ranged from 8 to 37 years (average 18 years), with four participants responsible for and operating within national policy and service levels, and the remainder responsible for regional remit across the five regions in the Republic of Ireland. Table 1.

Table 1 Participant Profile

Gender	Age (Years)	Organisation	Duration of Professional Practice in Years
Female	45	National Child Protection	20
Male	46	National Addiction Treatment	14
Male	45	National Harm Reduction	20
Male	Declined to give age	National Addiction Treatment	30
Male	30	Regional Addiction Service	8
Male	45	Regional Drugs Task Force	12
Male	49	Regional Clinical Lead Substance Misuse	30
Female	48	Regional Community Drug Development Work	9
Female	35	Regional Rehabilitation	15
Male	59	Regional Addiction Treatment in Primary Care	37
Male	41	Regional Addiction Treatment in Primary Care	15
Male	46	Regional Drug Education	14
Female	40	Regional Primary Care Addiction Service	10

3.2 Definitions of NPS used within Professional Roles

Definitions of NPS varied within the context of the participant's professional role, and were generally confined within the regulatory domain and Irish legislative context. Two participants referred to the United Nations Office on Drugs and Crime (UNODC) definition which refers to a range of controlled and illegal psychoactive substances posing public health concerns;

> *'Substances of abuse, either in a pure form or a preparation, that are not controlled by the 1961 Single Convention on Narcotic Drugs or the 1971 Convention on Psychotropic Substances, but which may pose a public health threat.'*

Many participants labelled NPS within the context of the headshops prior to 2010 and to the service they provided, and defined them as *'head shop', legal highs".* Many referred to them by type/brand name, for example *'Mephedrone /Spice'.*

> *'All substances that are novel to this region of Ireland, including an array of synthetic substances, including those that were previously on sale as legal highs, and their derivatives.'*

> *'I define them as "head-shop" products, because they are being bought in online shops, and UK shops as well as from illegal drug dealers. More detailed definitions, other than for classification purposes i.e. stimulants, cannabinoids, etc., are not necessary in my day to day practice'.*

Many also defined them according to the psychoactive effect.

> *'I define them as either stimulant or depressant, and route of administration. I identify them by the name that the service user calls them "Spice, Bath Salts, Incense" or if later they have fitted a known validated description'.*

Challenges in definition centred on detection, and verification of content by chemical analysis. Participants described the influx of undetected compounds purchased on the Internet and entering the Republic of Ireland via the postal system, often labelled as *'research chemical'; 'animal or herbal products'*.

> *'Recent legislation on psychoactive substances provides a broad definition, though there has been discussion regarding the need to alleviate the laboratory confirmation of the presence of a psychoactive substance to determine its categorisation.'*

One participant described at length the dynamic nature of the designer NPS market and how surveillance and detection struggle to tackle continuously adapted products;

> *This is a difficult question to answer, as NPS are changing faster than the regulatory definitions, and indeed than the scientific community can confidently identify them. Many are now being purchased via the Internet, or as animal foodstuffs or incense, bypassing current regulation.*

Others referred to NPS as synthetic (and herbal) substances not detected in usual urine screening of drug treatment patients;

> *'Illicit drugs that are not detected on routine drug testing, excludes drugs which have a therapeutic indication, but are being illicitly used'.*

> *'They are often adulterated so even definitions or scientific analysis cannot validate beyond the service users perception of what psychoactive effect they experienced, and what expectations they had prior to consumption'.*

3.3 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 through to daily case load with service users. No contact was described with either NPS producers or sellers, with exception of one participant who described users who were selling NPS within their friend networks.

> *'Users that have their own habits and seeking to pay for this through selling substances.'*

Amount of time in contact with users of NPS ranged from zero in the case of the national experts, to between 5 and 20% for regional experts with caseload in the form of education, harm reduction and treatment. One participant described a dramatic increase in referrals which has led to a much longer waiting list for supports.

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

One comment was made with regard to the difficulty in estimating levels of NPS use in Ireland due to the lack of detection in urine analysis of treatment patients, and that use was rarely admitted in consultations. Many participants observed how the use of NPS occurred in prisons and methadone treatment settings due to the lack of detection in screening methods.

> *'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, and the complex cases take longer.'*

3.4 Types of NPS users, Consumption patterns and Consequences of Use

Specific groups of NPS users were generally identified as four groups,

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

Participants recognised the wide range of user across the population, with some sub groups not engaging with services, and with a wide range of drug experience and expertise.

> *'Predominantly users, who are using NPS as a substitute to their main addiction, or as an adjunct to it. Sometimes users whose primary substance is intravenous NPS, mostly use of cannabinoids such as incense, or to lesser degree stimulants such as bath salts; and mostly polysubstance misuse, with a minority injecting as a substitute for their primary addiction. There is a novice user, who similar to e-cigarettes, 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 poly-drug 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, GHB alternatives, psychedelic hallucinogenic and stimulant party pills containing the 2-C substances, and cathinone stimulants such as a-PVP and Mephedrone. More recent trends included the opioid fentanyl analogue, flurofentanyl.

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[4] The term "*Chemsex*" is generally used to describe intentional sex between men who have sex with men (MSM) lasting several hours or days with multiple sexual partners (Bourne et al., 2015a;b) under the influence of psychoactive drugs (McCall et al., 2015; Pakianathan et al., 2016; Melendez-Torres and Bourne 2016). Common drugs used include 3,4-methylenedioxy-N-methylamphetamine (MDMA, or ecstasy), methamphetamine (crystal meth), gamma-hydroxybutyrate (GHB), gamma-butyrolactone (GBL), Mephedrone, and ketamine(Cochran et al., 2004; Colfax and Guzman, 2006; Bolding et al., 2006; Hickson et al., 2010; Heiligenberg et al., 2012; Kirby and Thornber-Dunwell, 2013; Brennan and Van Hout, 2014).

'No specific characteristics. We work we quite a broad demographic. Most likely with younger males. They are unlikely to use only NPS. They most often will use other substance/s (not necessarily at the same time) at some stage e.g. cannabis or spice at different occasions.'

'Mainly synthetic cannabinoids, however stimulant use appears to be on the rise, and used more recreationally by a different cohort of young people who are not using SCBs'.

General reasons for use of NPS centred on user curiosity, experimentation, boredom, peer use, social influences, for sexual reasons, better effect and value for money, availability in the form of a '*cheap high',* and potency in comparison to conventional drugs (for example SCBs).

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

'Sometimes due to unavailability of traditional substances or ease and accessibility of NPS, and lower risk (legal). Other times for the added strength of herbal blends compared to traditional herbal cannabis.'

Route of administration varied with regard to the cohort of user, with PWID and *'Chemsex'* users often injecting, and recreational users in social night life ingesting, insufflating or smoking.

Sourcing networks centred on real world interactions between friends and street dealers, and online. Participants distinguished between types of user in relation to sourcing methods, with PWID sourcing via street networks, and social and '*Chemsex*' users purchasing online and from friends. One comment was made with regard to use of the Surface and Dark Net, and the support of dealing networks via mobile phone technology and social media. Another commented on border tourism with Northern Ireland.

'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'.

'Poly substance users frequently get them from dealers, or friends as substitutes, or from shops. These users are generally too chaotic to use online shopping, as this requires a degree of concentration, and patience. The substance may have originated from online through the dealers. A different user who is perhaps naive to "hard drugs may purchase NPS online as their primary addiction.

Consequences of NPS use centred on short term impacts such as instances of paranoia, psychosis, heightened aggression and sexual risk taking, and increased injecting risk behaviours in PWID. Those engaging in injecting of NPS were reported to experience bacterial infections such as skin ulcers or abscesses, missed hits resulting in problems, cellulitis, phlebitis, DVTs, and weight loss, and more often when compared with opiate injectors. Longer term impacts centred on unpleasant withdrawals, HIV and HCV; and deterioration of mental state.

'Short term agitation, anxiety, aggression. Some reports of increased sexual activity or being used to heighten sexual experiences. 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. Including all other related harms i.e. Physical health, relationships, education, work etc'.

'Deterioration of mental health resulting from lack of sleep, loss of appetite, loss of interest in activities, low mood, extreme agitation in periods of abstinence, paranoia in many cases, and after a pe-

riod of abstinence many young people are left with a legacy of anxiety and depressive symptoms, and drug related debts'.

'Significant psychological and physical harms. More agitation and aggression. Tend to indulge in more at risk behaviour in terms of injecting and sexual practices. Note recent surge in HIV rates among PWID in Ireland due to cathinone injecting and rise in HIV among MSM population associated with Chemsex scene that is rapidly developing in Dublin.'

The stimulant nature of certain NPS which are often injected was observed to contribute to worsening outcomes.

'Those who inject, due to stimulant compulsive nature of acute intoxication will abandon harm reduction injecting techniques and repeatedly inject.'

An increase in severity and progression of dependence symptomatologies 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.

'Most significantly mental health problems. Sleep deprivation, severe paranoia and psychosis, depression and suicidal ideation.'

'Cognitive functions are reduced, anxiety and psychosis are increased, self harming and harming others is more likely, risk behaviours are increased, mental wellbeing is severely reduced, paranoia is hugely evident'.

For younger users, early school leaving, relationship breakdown, involvement in crime and lack of employment were described.

'Increased anxiety, anti-social behaviour, memory loss, risk taking behaviour and relationship breakdowns. We are seeing young people being criminalised as a result of their actions while under the influence.'

Initially, curiosity, boredom, disenfranchised young people with low self esteem and poor educational achievement looking for something to do – which quickly gets out of control leading to dependent patterns of use.

A lack of user awareness of potential harm, potential for overdose and legal consequences was described by many participants, particularly in the case of younger, more inexperienced users.

'There appears to be an issue with young people thinking that these substances are ok to take and not as addictive as the traditional drugs. Also, the quantities that young people take are difficult for them to manage and understand which is leading to greater risks for them'.

'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.'

3.5 Legislation, Policy and Prevention

Legislative controls appeared largely ineffective in the view of these participants. In general participants observed how legislative control and regulation has not impacted on how users are sourcing NPS in the Republic and who are undeterred by current legal status. This is due to street and online availability of NPS, and with successful sourcing over time incurring no legal repercussions.

'For the 'users' that I come into contact with in our service, procurement is not in any way affected by the legality of a substance. I have not met a service user yet who has ceased their substance use as a direct result of the legality or illegality of a substance.' Obviously currently legislation is not fit for purpose, as manufacturers and their products continue to evade detection and seizure as a result of a lack of clarity on the legislative position regarding NPS – meaning Gardai [Irish Police] struggle to make arrests on NPS, and if they do, they are likely to be challenged'.

'Difficulties enforcing legislation has been problematic, leading to a perception that the substances "cannot be that bad" because they are legal. Many young people flaunt their drug use publically which is contributing to a culture of normalisation of drug use for younger people who incidentally are the targets as customers'.

Challenges centred on the potential drug market implications as a result of legislative controls.

'NPS has become underground and supply is provided through illegal drug suppliers or via the internet each of which are difficult to overcome by current drugs policy.'

'For sellers/producers, we have seen how ineffective the 'war on drugs' has been! Supply and demand. As long there are people who want to purchase a substance, there will be people who wish to make a profit by selling it to them'.

Consequences of legal status were also viewed to have also stimulated greater use of the internet to source NPS, and distance from potentially violent drug dealers.

'The accessibility and wide variety of substances available to all online opens up the market. I have heard instances where people prefer to buy NPS online so that they do not have the risk of being caught purchasing illegal substances on the street or having to meet with a dealer (which has other potential risks). There are also some shops where you can still by 'under the counter'.'

'Certainly online procurement is increasing, but only as long as the legal consequences continue to be seen as insignificant. It appears to be perceived as a relatively safe way to procure NPS'.

One participant commented on the need for global action in counteracting internet sourcing of NPS, with the onus on the country of production.

'International law also needs to play catch up with internet sales, in an effort to reduce available supply chains, by introducing a recognised system of certification before international courier and postal systems will accept shipment of unknown products to the general public. The onus needs to

be placed back on the producer, and not on the country of receipt. This may reduce the ease at which persons can hope to purchase online'.

Recent legislative control in Northern Ireland had a positive impact on cross border NPS drug tourism in terms of significantly reducing availability of NPS (most commonly SCBs), but with negative drug displacement outcomes in the form of heroin smoking and illicit benzodiazepine trade.

'The change in legislation in Northern Ireland has recently caused a significant 'drought' in supply of NPS in the region. Although this may appear a positive, many users are left searching out an alternative substance and in my experience, dealers use this opportunity to introduce the smoking of heroin and use of benzodiazepines which presents an entirely new set of demands on communities and services'.

Legislative change was required in the view of many participants in order to provide timely forensic surveillance and analysis of substances.

'The current legislation does not make the situation easier. Substances have to be tested and certified as psychoactive before legal action can be taken against the person found with them. As this is not always a huge amount the cost of bringing the case to court far outweighs the chances of conviction.'

'Definitions need to be broadened, and need to overcome delays due to reliance on lab analysis for each sample.'

A minority of participants discussed the potential for legalisation of NPS in order to control and regulate products and markets, ultimately to enhance user safety.

'Is it possible to create a scenario where these substances are controlled to same degree as alcohol and cigarettes? Would this create a situation where production and distribution is pushed further into the black market? Perhaps. It would certainly be beneficial to have a situation where there is a greater understanding of what goes into the products and their potential harms before they make it to the streets'.

The current National Drug Strategy 2009-2016 was viewed as requiring updating with regard to the NPS challenges. This strategy was designed as cross cutting area of public policy and service delivery bringing together Departments, agencies and the community and voluntary sectors to provide a collective response to tackling the drugs problem in the Republic. The overall objective of the Strategy is to tackle the harm caused to individuals, families and communities by problem drug and alcohol use in Ireland through the five pillars of:

- Supply reduction
- Prevention
- Treatment
- Rehabilitation and
- Research.

This strategy was viewed by participants as dated and largely concentred on supply reduction strategies, and opioid based drugs. Expert, service, community and public consultations are underway for the new strategy, with participants underscoring the need for national evidence based approach to clearly address emerging issues in NPS.

'The primary target audience for the current drug strategy is aimed at opiate users which doesn't meet the needs of the NPS population The development of the new strategy needs to reflect information in regards to prevention, early identification, early intervention and putting more resources into supporting protective factors.'

Law enforcement tactics themselves were not viewed as successful in reducing harm associated with NPS use, with participants emphasising the need for interventions at individual and community levels.

'I do not believe that criminalisation of substances reduces the related harm. Controlling substances or dissuasion techniques into services would go a lot further for reducing harm than putting people through the judicial system.

Prevention was described by participants as;

'The working definition of prevention spans from preventing or delaying the onset drug or alcohol use amongst young people through education and information exchange in the earliest stages of curiosity, experimentation and use; to harm reduction education for those who are using substances, and relapse prevention for those in recovery'.

Prevention models currently centred on brief intervention, motivational interviewing, community reinforcement strategies, relapse prevention and information provision in services, clubs and schools. These however were viewed by some participants as ineffective and particularly dependent on user entrenchment in NPS use;

'There is limited evidence available regarding the effectiveness of these traditional methods for managing substance misuse issues when implemented with clients using NPS.'

'To use a brief intervention approach to raising awareness of the dangers and consequences of taking unknown and unproven substances, the service user's attention span, and stage of recovery, or stability is important. As is their willingness to change'.

Participants observed the lack of specific NPS prevention and harm reduction strategies addressing use of NPS in the Republic of Ireland.

The risks of traditional illegal drugs are well known, and documented. The harms and risks are easier to educate, and culturally acceptable as fact. The risks associated with NPS use is less definitive, and are seen as alarmist and unfounded'.

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. Content was advised to include;

'General education regarding their knowledge of the dangers associated with NPS use, and identification of new negative mental health issues associated with the use of NPS'.

'Provide accurate information, as there is currently a vacuum in NPS information being filled by internet and young people are not aware of the risks associated with use. There is still a pervasive belief amongst young people that because it's not illegal, it cannot be that bad!'

Many described the need for service providers to react to these moving targets of substances and provide up to date information on NPS for their service user base and also for users not in contact with drug services.

'New set of information to access and disseminate. Need to target information and initiatives towards young people in a cohort who would not traditionally been in contact with Addiction Services (e.g. students in 3rd level education).'

'We needed to educate our service users about this specific danger, and also be more aware of the risks associated in dealing with an agitated individual.'

For younger users, the early identification of risk factors including family substance misuse, friends who use drugs, early experimentation with alcohol, low self-esteem, problems in school and early school leaving were viewed as vital. NDRIC Risk assessment and CRA risk assessments were commonly used. Supports within a holistic multi stakeholder approach with youth, teachers, parents and youth services were viewed to centre on a range of resilience factors in terms of supporting school retention, alternative leisure activities, parent and teacher information, provision of low threshold services for youth and culturally appropriate service modalities, particularly for Travellers and lesbian, gay, bisexual and transgender (LGBT) groups.

'We can no longer depend on the Department of Education, Social Personal Health Education program to be the answer to school based prevention initiatives. Schools are currently not receiving the necessary supports to deliver this module, and it is outdated, particularly in relation to NPS. Again, a multi-disciplinary approach to devising school programs is required, alongside a review and evaluation of school based programs.'

User views and to some extent that of services appear underpinned by lack of clinical evidence and forensic information, and appropriate credible forms of education.

'Firstly NPS use is often seen in the same terms as smoking cannabis, with a lesser harm than heroin, traditional stimulants, or even alcohol. Unless consumed as an injected substance it is not given the same concern, either by the user or even by the service. Because the nature of NPS is an ever-changing dictionary of names, contents and psychoactive effects, it is difficult to educate oneself on the risks, and possible interactions with other substances consumed.'

The need for enhanced targeted treatment and rehabilitation, and dual diagnosis strategies 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 NDS or prevention in relation to being able to deal with people who present with these issues'.

'It is outdated and has no clear dual diagnosis strategic objectives or actions. Mental health and psychosis is extreme in cases of NPS use and there are very limited dual diagnosis services.'

In terms of treatment service responses, comments were made with regard to the impacts on service provision in the Republic with the advent of NPS use, particularly emphasised the need for interagency working and close collaboration between psychiatric, medical and social services.

> *'I think there needs to be a review of traditional treatment approaches and how effective they are when working with the NPS cohort and the variations that NPS are.'*

Comments were made around the lack of reaction in service models, with treatment approaches uniform, ill-equipped to deal with the complexities of NPS use and dependence (and mental health issues), and confined to targeting poly substance use, despite calls to develop more specific NPS initiatives. Displacement between NPS and conventional street market was described, and with potential adverse consequences for services.

> *'If there is a significant drought in traditional drugs of misuse, then we will see a huge compensatory increase in the uptake of NPS, with the knock on consequences seen in a poorly prepared drug service, and with significant mental health emergencies affecting the emergency departments of our hospitals and our psychiatric services.*

Clinical services were also deemed ill-equipped to deal with the repercussions of NPS use and dependence, and warrant clinical guidance, collaboration between addiction and mental health services, and additional staff resources.

> *'We need to broaden treatment criteria to respond to NPS presentations, as many centres do not accept referrals for young people to detox from NPS. Also, detoxification is a difficulty being faced by many acute hospitals, as mental health services deem mental health issues as secondary to drug use, and therefore are often times not being treated. A holistic multi-disciplinary approach needs to be adopted by all services in meeting the complex needs of NPS users'.*

> *'Currently there is a scarcity of inpatient treatment facilities trained effectively to cope with NPS'.*

Staff resources and training were also in need of support in relation to the challenges encountered in dealing with the NPS using cohorts.

> *'Services have reported need to have more staff on the floor when engaging NPS users in groupwork, or drop-in; more consideration regarding client risk assessment and health & safety of staff.'*

> *'No specialist training yet there is so much available in the UK. Staff within services do not understand a lot of these drugs and their implications so adequate training is required.'*

Ultimately the legislative and policy response in Ireland was deemed in need of amendment.

> *'A lack of clarity on legislation and no clear policy regarding NPS i.e. treatment approaches, mental health interventions etc., leaves workers constantly fighting for clients which is exhausting. Without a policy framework, no one is clear on their role or responsibility regarding work with NPS users – so it is often left to community drug and alcohol services to manage, which puts further demands on already under- resourced services.*

4 Discussion

Increasing trends in the diversification, trafficking and use of NPS continue to present a global public health and law enforcement challenge (European Monitoring Centre for Drugs and Drug Abuse, EMCDDA, 2016). The study illustrated the current situation with regard to expert views and perspectives on the NPS phenomenon in the Republic of Ireland. In terms of definition, the majority of experts referred to NPS within the context of the headshop phenomenon as 'head shop', legal highs" and the products sold prior to legislative controls (for example the popular cathinone Mephedrone or SCBs known as 'Spice'). A minority referred to the United Nations Office on Drugs and Crime (UNODC) definition of NPS which includes a range of controlled and illegal psychoactive substances posing public health concerns; 'Substances of abuse, either in a pure form or a preparation, that are not controlled by the 1961 Single Convention on Narcotic Drugs or the 1971 Convention on Psychotropic Substances, but which may pose a public health threat.' (Martinotti et al., 2015: 295). Research and surveillance struggle to keep up with the ever increasing range of new psychoactive substances with undocumented toxicological and psychoactivity risks (EMCDDA, 2015; Caudevilla, 2013: 2016). Legislative challenges were viewed to centre on the detection in chemical analysis of NPS entering the Republic 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). Ultimately legislative change to support timely and proactive forensive surveillance and analysis of NPS is warranted.

Experts underscored the role of the internet in fuelling information and facilitating the influx of NPS into the Republic. The Internet is driving change in contemporary drug markets, and particularly that of NPS (EMCDDA, 2016). The Surface Web is used to access information around retail, synthesis and cultivation processes, and how to circumvent national legislative controls (Lavorgna, 2014; 2016; van Amsterdam et al., 2016). The Global Drug Survey (2016) reported that almost 10% of Irish users buy drugs on the internet, of which a third are NPS. Distances from the potential risks in street drug trade were described as motives to source online, and has been reported elsewhere (Tzanetakis et al., 2016; Barratt, Ferris and Winstock, 2016). However, sourcing networks of NPS in the Republic according to these national and regional experts mostly centred on real world interactions between friends and street dealers, and to a lesser degree online. More chaotic PWID reportedly sourced via street and peer networks, with social users purchasing online and from friends. Studies elsewhere have observed that whilst online retail is a sourcing route for NPS, real world sourcing interactions via friends and local contacts are more common (Sande, 2016; Soussan & Kjellgren, 2016; van Amsterdam et al., 2016). Two experts commented on Surface Web and cryptomarket sourcing, and sourcing supported by mobile phones and social media. Social media is 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; Gilbart et al., 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 availability contributing to continued and undeterred use of NPS among certain populations. Some experts commented on cross border drug tourism in the sourcing of NPS. Irish studies prior to legislative control, and also thereafter have also reported on cross border tourism (McElrath and Van Hout, 2012; Van Hout and Hearne, 2016). Of concern however given the recent legislative controls in the United Kingdom and Northern Ireland, were the regional service concerns

around drug market implications with potential displacement toward smoking of heroin and use of benzodiazepines.

Specific groups of NPS users were identified as the following; college students or young people at parties; 'Chemsex' men who have sex with men (MSM) groups; entrenched persons who inject drugs (PWID) seeking a cheap high not undetectable by routine screening; co-morbid individuals with (often) primary mental illness and self medicating of symptoms. Experts recognised these distinct groups, with some not engaging in services. Trends in poly substance use of popular NPS included synthetic cannabinoids, psychedelics, GHB alternatives, psychedelic hallucinogenic and stimulant party pills containing the 2-C substances, and cathinone stimulants such as a-PVP and Mephedrone. Motives for use centred on curiosity, experimentation, boredom, peer use, social influences, for sexual reasons, better effect and value for money, availability in the form of a 'cheap high', and potency in comparison to conventional drugs (for example synthetic cannabinoids), with similiar reported elsewhere in the literature (Van Hout, 2014; Van Hout & Hearne, 2015; Soussan & Kjellgren, 2016; GDS, 2016). Short term impacts included instances of paranoia, psychosis, heightened aggression and sexual risk taking, and increased injecting risk behaviours. 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 (European Chemsex Forum, 2016). There was a reported rise in newly acquired HIV infection in PWID using a-PVP in Dublin in 2015 (Giese et al., 2015). Injectors of NPS were described as having greater incidence of bacterial infections such as skin ulcers or abscesses, missed hits resulting in problems, cellulitis, phlebitis, DVTs, and weight loss, than opiate injectors. More significant concerns centred on the appropriate (and sometimes lack of) service response to user 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. Social and functional deterioration particularly in youth were also observed and impacting on community and family health.

Current drug policy (2009-2016) and service responses were viewed as inadequate, dated and largely focused on supply reduction and treatment of the opiate dependent population in the Republic. The new national drug policy requires an evidence based approach to updating and revising in order to address the challenges relating to NPS use, and in informing appropriate community service, prevention, clinical and treatment responses. Treatment uptake in the Republic remains low, with a very small number of treatment cases reported involving SCBs (113 since 2009). Enhanced multidisciplinary efforts in prevention, treatment and rehabilitation cognisant of dual diagnosis complications are warranted. 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 referrals, and the diverse range of NPS used in the Republic. Given the lack of user awareness, preventative and harm reduction initiatives should be informed by contemporary evidence and best practices from elsewhere in Europe. These are 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. Continued training of service professionals in all relevant sectors is warranted alongside surveillance, and a proactive new national strategy. Efforts and interventions responding to NPS use targeting those most at risk are also warranted, and require continued governmental support. Janíková, et al., (2016) have commented on the governmental consideration

of safe injecting facilities to combat the spread in NPS (Mephedrone and a-PVP) associated HIV/HCV transmission.

5 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. Academics continue to underscore the need for enhanced legislation in supporting collaborative efforts between forensic scientists and service providers in intelligence gathering activities, and ultimately the informing of drug policy (Kavanagh and Power, 2014). The Pompidou Group has emphasised the need for enhanced coherence in Ireland's drug policy approach, particularly in relation to the achievement of overarching population health objectives (Muscat et al., 2014). The Republic of Ireland (and New Zealand) both utilise broad 'precautionary' or 'safety net' schemes to prohibit or control unregulated NPS (Health Research Board, 2016). Experts here emphasis the need for a new drug strategy cognisant of the trends in NPS in the Republic, and underlying need for development and clear policy objectives and responses in supply reduction, prevention, harm reduction, treatment and rehabilitation. Best practices from other European countries are warranted to inform service responses, and ultimately the next national drug strategy.

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.

6 Appendix I Guide

Short standardised questionnaire before starting the interview: Age, Gender, Profession, duration of professional practice.

1) The Organization

- What kind of organisation do you work for? Please explain the purpose and general principles of your organisation.
- Please explain the main tasks of your organisation.

2) Description of the field

- What is your position in the institution and what are your tasks?
- How do you define NPS? (e.g., synthetic substances vs. herbal drugs, legal vs. already controlled, "deadline" for being a "new" substance) Do you work with regulatory or scientific definitions of NPS?
- Please describe your work related to NPS?
    - How do you come in contact with NPS users, producers, or sellers?
    - What kind of users/producers/sellers do you meet? (Characteristics)
    - How often do you have contact with your clients?
    - How do you get in contact with your clients (face-to-face, telephone, online, etc.)
    - Which problems do you observe in connection with NPS? Which apparent (short- term or long-term) negative effects do your clients experience?
    - Did NPS change the way you work? If yes, how?
    - How much time of your work is related to NPS?

3) NPS use/procurement

- Which kinds of NPS are used by the people you have contact with? E.g. stimulants, cannabinoids, psychedelics etc., and: research chemicals vs. bath salts and herbal blends without proper description of contents
- Can you describe how your clients use NPS? (inject?/poly?)
- How do the users you are in contact with obtain their NPS? (dealers, friends, online, shops etc.) (if applicable, differ by type or group)
- Can you describe harms associated with use of NPS in your clients?
- Please identify the differences you may have observed between the risks of NPS use and the risks of use of traditional illegal drugs among the people you are in contact with.
- Please name the reasons which the people you are in contact with usually give for using NPS. (Differentiation between single, repeated, regular, intensive use)
- What are the main reasons for the use of NPS in your country? Are there particular (groups of) users consuming specific NPS? If yes, why?
- Which problems do you observe in connection with NPS procurement?
- Do you know if NPS were found in street drug seizure?

4) Prevention and harm reduction

- What is your definition of prevention?
- What is the focus of prevention of NPS use in your country?
    - Are there particular prevention strategies for specific NPS? (examples)
- Which measures to reduce the risk of NPS use are applied in your country? (examples)

- Which NPS prevention measures regarding supply and demand reduction do you apply in your daily work? Are these effective?
    - What is the definition of risk within these measures?
    - What is the focus of these measures?
    - Who are the targets of these measures?
    - Which kind of strategy is used in these measures?
    - What kinds of tools are used for these measures? (face-to-face, internet, …)
    - What are the limits of these measures? Under which conditions do they fail?
    - What are the benefits of these measures? Under which conditions are they successful?
    - How do you define a successful prevention measure?
- Are there any harm reduction activities performed by users themselves? If yes, which and how?
- In your professional opinion, what measures should be taken to minimise the potential harms related to NPS?

5) Legal status of NPS

- Which role does legality and illegality of NPS play in procurement and (motives for) use for the users/producers/sellers you are in contact with?
- Do users apply certain strategies to avoid detection or arrest?
- Do you consider legislative changes necessary? If yes, please explain.

6) Current drug Policy

- What are the consequences of NPS use for the current drug strategies?
- What are the consequences of NPS use for current strategies of prevention?
- Does the drug policy of your country influence your work with clients who use NPS? If yes, how?

7) NPS-market

- Where are NPS sold in your country? Are there any legal “offline” outlets where NPS can be bought?
- Which trends regarding NPS procurement have you observed?

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