

**Young people’s beliefs about new psychoactive substances known as ‘legal highs’**

**Volume 1: Main Thesis**

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Declaration

The work submitted in this thesis is the result of my own investigation, except where otherwise stated. It has not been submitted for any other degree, nor has it been submitted to any other institution.

Emily C Gagnon.

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Abstract

**Background**: The impact of new psychoactive substances (NPS), also known as legal highs, on UK drug markets is a serious health concern. Young people are thought to be especially at risk of underestimating dangers of NPS use due to the association of the term legal highs with perceptions of safety. However, in the UK, few studies have focused exclusively on young people’s perceptions of NPS and there is no evidence on the effectiveness of interventions addressing young people’s NPS use.

**Aim**: This thesis aims to inform the development of interventions that seek to address young people’s use of NPS. The research explores young people’s beliefs, reasons and motives for using and not using NPS with the aim of linking their beliefs about NPS with theoretical frameworks suitable for use in interventions. As the research took place across the period when the Psychoactive Substances Act (PS Act) was implemented, the extent to which its implementation affected young people’s perceptions about NPS is also examined.

**Methods**: Three qualitative studies were conducted to explore young people’s perceptions of NPS, the acceptability of potential intervention approaches, and to compare differences in their beliefs about NPS before and after the introduction of the PS Act.

**Results**: Findings showed that young people’s NPS use and non-use were related to multiple motivations that are well described by extended versions of the Theory of Planned Behaviour. Pre-and post-ban comparisons indicated that young people’s perceptions of NPS appeared to be linked with the increased visibility of problematic NPS use in marginalised populations.

**Conclusion**: The thesis concludes that social cognition theories offer potential for supporting the development of effective interventions, when used as part of a wider prevention strategy that remains sensitive to social inequalities and adopts a systems perspective which takes into account wider contextual factors.

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# List of Abbreviations

BCW Behaviour Change Wheel

BRT Behavioural Reasoning Theory

EMCDDA European Monitoring Centre for Drugs and Drug Addiction

HBM Health Belief Model

NICE National Institute for Health and Clinical Excellence

NPS Novel Psychoactive Substances

PMT Protection Motivation Theory

PS Act Psychoactive Substances Act 2016

PWT Prototype Willingness Theory

TPB Theory of Planned Behaviour

UNODC United Nations Office on Drugs and Crime

WHO World Health Organisation

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# Introduction

## Rationale

New psychoactive substances (NPS), also known as ‘legal highs’, are manufactured chemicals that produce similar psychoactive effects to traditional illicit drugs of abuse such as cannabis, ecstasy, cocaine and heroin (NEPTUNE, 2015). From around 2007, after a decades-long stable market for a relatively small number of well-known recreational drugs, the number of new psychoactive substances detected in European countries increased rapidly. By 2017, the EU early warning system had detected more than 670 novel substances in drug seizures and forensic tests (EMCDDA, 2018). Although the number of deaths associated with NPS use in England and Wales are considered to be low, making up less than 5% of those attributed to drug misuse annually (ONS, 2015), sharp increases in the death rate linked with NPS from about 2010 onwards have been the cause of concern (HM Government, 2011; 2015). Much of this concern has focused on young people, as evidence shows that young people are twice as likely to use NPS than older adults (CSEW, 2018; NACDA, 2016), and are especially vulnerable to acute harms resulting from overdose and dangerous substance combinations (EMCDDA, 2018).

In 2016, in response to the concerns, the UK Government introduced the Psychoactive Substances Act (PS Act). The PS Act criminalises the production and supply of all psychoactive substances not exempted by law, with the result that all NPS are subject to legal control by default, until such time as they might be assessed and brought under other forms of legislation. Although the Act appears to have been successful in achieving its primary purpose, namely prevention of the open sales of NPS in the UK by high street and web-based retailers (Home Office, 2018), evidence shows that many NPS continue to be available via black market sources, often in more dangerous forms (DrugWise, 2017; Ralphs, Gray & Norton, 2017). Furthermore, the global scale of the NPS market, its pervasiveness online and the adaptability of producers and suppliers are all likely to ensure that NPS remain a feature of the UK drug market for the foreseeable future. Recognising the challenges that NPS present to existing forms of drug control, numerous high-level organisations and commentators have called for new, alternative approaches to addressing the risks NPS pose to the public, particularly young people (ACMD, 2015; UKCPD, 2012).

This thesis aims to inform the development of behaviour change interventions that seek to address young people’s use of NPS. With prohibitive methods of drug control insufficient to protect young people from exposure to NPS, it is necessary to support young people’s own ability to avoid NPS use. A focus on young people’s motivations for using, and not using, NPS is vital if we are to engage young people with the intention of discouraging the use of NPS. The importance of understanding young people’s motivations for using NPS and how best to influence them has been highlighted by authors who have been critical of traditional methods of drug control that are based on prohibition and criminalisation (The Lancet, 2010; UKCPD; 2012).

While there is a clear need for interventions that discourage young people’s use of NPS, to date, there is little or no evidence available on the effectiveness of drug prevention interventions addressing young people’s NPS use. In the absence of an empirical evidence base specific to the use of NPS, current drug prevention guidelines recommend that interventions developed for traditional drugs should be applied to NPS, as without evidence to support the use of NPS-specific interventions it is difficult to justify the costs involved with the implementation of novel interventions (ACMD, 2015; Home Office, 2017; NICE, 2017). The application of approaches developed for use with traditional illicit drugs is recommeded, as NPS share many similarities with classic drugs of abuse.

NPS are substances deliberately manufactured to mimic classic drugs of abuse (EMCDDA, 2014; Zawilska, 2011). They are sold in the same forms (e.g. powders and pills) and are consumed by the same methods, (e.g. snorting, swallowing and injecting) (ACMD, 2011). NPS can be so similar to their illicit counterparts that they can only be distinguished by laboratory testing (EMCDDA, 2014). Retailers intentionally target the same markets as classic drugs and NPS are openly advertised as alternatives to traditional illicit drugs (Corazza et al. 2012; Corazza, Parrott et al. 2017; Bersani et al. 2002). Prior to implementation of the PS Act, NPS were predominantly sold in drug paraphernalia shops and websites alongside equipment for drug consumption (ADMD 2011). Users share knowledge and information about NPS on drug-fora (Hearne & Van Hout, 2016) and NPS are sold alongside classic drugs on specialist cryptomarket websites (Wadsworth et al. 2017). Extensive research indicates that the vast majority of NPS users are also users of other traditional illicit drugs (Home Office, 2014). NPS and traditional drug markets are known to overlap (Deligianni et al., 2019) and NPS are commonly substituted for traditional illicit drugs and vice versa (e.g. Deligianni et al., 2017; Penney et al., 2016; Winstock & Barratt, 2013).

However, while NPS share many characteristics with traditional drugs of abuse there are key differences that can be expected to influence young people’s perceptions of NPS in important ways. Unlike traditional illicit drugs, for the most part of the previous decade, NPS have been legally available via the highstreet and legitimate websites. With the benefit of legal status, NPS have been sold in brightly coloured packaging with attractive brand names (Patil, Tewari and Rao, 2016) and marketed in ways that enhance their emotional appeal (Morris, 2016). The impact of legal status can be expected to have a significant impact on young people’s perceptions of NPS and associated risks of use. While colourful, graphically exciting packaging has been shown to enhance the appeal of substances (Moodie et.al., 2010), there are also significant concerns that the perceived legal status of NPS confers connotations of safety (HM Government, 2011; 2015) and studies have confirmed that legality is associated with perceptions of safety for some users (Sheridan and Butler, 2010; Corazza et. al. 2011).

Although arguably the legal status and branded marketing of NPS aligns them more readily with other commonly used licit substances such as alcohol and tobacco, the overlap between these markets is not as extensive (CSEW, 2015). While some NPS users appear to show higher rates of alcohol consumption than the general population (CSEW, 2015) other user groups have been found to drink less than the average person (Soussan, 2018). In addition, interventions developed for these long-established products of mature regulated markets may not be adequately designed for addressing the principal risks associated with NPS use. NPS products are distinguished by their novelty, the unknown risks associated with their use and the ambiguity of their legal status. Despite being legally available for a period of time, unlike alcohol and tobacco, NPS were uncontrolled substances which have never been approved for human consumption. As a result, the information supplied with NPS products is largely inaccurate and misleading (Vandrey et al., 2012; Vardakou et al., 2010) and ingredients, health warnings and dosage information are usually absent. When contents are listed key psychoactive ingredients are usually omitted or inaccurate and the active ingredients of popular brands are regularly substituted to evade drug controls (e.g. Kelleher et al., 2011). Consequently, the consistency and potency of NPS can vary considerably and products claiming to be legal often contain prohibited substances (Brandt, Sumnall & Measham). This lack of regulation and consumer information means that, as with traditional illicit drugs, the primary risks addressed in interventions are the acute harms associated with overdose and polydrug use (EMCDDA, 2015). In contrast, for heavily regulated psychoactive substances such as alcohol and tobacco, interventions predominantly focus on the long term risks of use, supporting smokers to break an existing habit (NICE, 2018a) and drinkers to reduce their consumption for the prevention of alcohol-use disorders (NICE, 2018b). Applying interventions designed for managing young people’s consumption of regulated psychoactive products to unregulated products may be ineffective, and where interventions focus on adherence to recommended guidelines and product information, they could advertently increase the risks to users.

Furthermore, within the academic literature base, official government documents and third sector reports NPS are overwhelming framed as a drug-based issue. As a result, NPS are generally addressed using the same legal instruments as traditional illicit drugs and interventions are expected to align with national drug-policies (Home Office, 2014). Since interventions that align with recommended guidelines are more likely to be commissioned and supported (NICE, 2017), the majority of interventions developed to tackle NPS can be expected to draw upon the evidence base for traditional illicit drugs. Although more recently the PS Act has brought the legal status of NPS more in line with the controls placed on traditional illicit drugs, there are concerns that NPS continue to be associated with legal availability (HM Government, 2011; 2015). Without specifically exploring young people’s beliefs about NPS, the impact of legal status on their perceptions and their motivations for using them, it cannot be assumed that interventions based on traditional illicit drugs will be effective when applied to NPS use.

## Research questions

The purpose of this research project is to inform the development of behaviour change interventions that aim to reduce NPS use and related harms. As the most effective form of harm-reduction is the avoidance of NPS use, the primary focus is to develop interventions which aim to prevent or reduce young people’s NPS use.

The project takes the perspective of the interventionist and is guided by principles of intervention design drawn from key guidelines and resources created to support the development of behaviour change interventions and drug-use prevention activities. The intention is to critically examine NPS-related literature and empirical evidence in the light of core principles of intervention design, including evidence generated by the project itself, to map key issues and potential opportunities for those interested in the development of interventions addressing young people’s NPS use.

Within this context, the implementation of the PS Act, which occurred during the course of the research, was taken as an opportunity to observe the impact of a real-world intervention on young people’s beliefs and attitudes surrounding NPS use and to consider the implications of these impacts for approaches to NPS-focused interventions.

As there is evidence to show that the most effective approaches to changing health behaviours are theory-based (Prestwich, Webb, & Conner, 2015), an important aim of the work is to link young people’s NPS-related beliefs and motivations with theoretical frameworks suitable for use in NPS-focused behaviour change interventions.

The present research therefore addressed the following research questions:

1. Why do young people use NPS?
   1. What salient beliefs do young people hold about NPS?
   2. What are young people’s motives and reasons for using or not using NPS?
2. To what extent has implementation of the PS Act affected:
   1. Young people’s beliefs about NPS?
   2. Young people’s motivations and reasons for using or not using NPS?
3. What approach to NPS intervention do young people think is suitable and acceptable?
4. Which theoretical framework/s are appropriate for use in NPS-related behaviour change interventions?
   1. Which frameworks are compatible?
   2. Is there a need for extensions or modifications?

## Intervention guidelines

The overarching guidelines used as a framework for this research are the behaviour change intervention guidelines published by the National Institute for Health and Clinical Excellence (NICE, 2007), the publicly-funded UK agency responsible for providing guidance on health interventions to the NHS, local councils and other health professionals. These guidelines are complemented by NICE recommendations on drug misuse interventions in addition to the international standards on drug use prevention published by the United Nations Office on Drugs and Crime in partnership with the World Health Organisation (UNODC & WHO, 2013; 2018), and the European drug prevention quality standards published by the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA, 2010; 2011).

The use of guidelines is important for ensuring the development of high-quality interventions and to reduce the likelihood of interventions being ineffective or harmful. This is especially important for interventions addressing drug use, as drug-focused interventions are particularly vulnerable to iatrogenic effects where the very behaviours being targeted for prevention can be inadvertently encouraged (ACMD, 2015; NICE, 2017).

## Important considerations for intervention development

High-quality interventions must be both ethical and effective. Ethical interventions prioritise concerns of equity, safety and acceptability, while the most effective interventions are those which are relevant, feasible and grounded in evidence (EMCDDA, 2011; NICE, 2007; UNODC & WHO, 2018). As these principles form recurring themes throughout this work, they are introduced briefly here; however, each principle will also be explored in greater depth within the main body of the thesis as relevant issues arise.

### Equity

Equitable interventions pay attention to health inequalities and recognise the influence of wider factors, particularly the social determinants of health (e.g., socioeconomic status, education, employment and ethnicity) and the social determinants of health inequalities (e.g., economic, health and social policies, legislation and societal norms; WHO, 2010). If wider factors are not sufficiently considered, interventions, however well-meaning, can exacerbate health inequalities (Albarracı´n, Gillete, Earl, Glasman, & Durantini, 2005; Michie, Jochelson, Markham, & Bridle, 2007). This happens when the intervention helps one group, whilst exposing other groups to increased health or social risks, which includes increased levels of neglect, marginalisation or stigmatisation, or the diversion of resources away from those in need (Holman et al., 2017). To reduce the risk of interventions exacerbating health inequalities and to support the development of interventions which contribute towards the reduction of health inequalities, it is important to remain alert to power relations and processes of marginalisation or oppression; and to carefully consider the perspective of the target population (Prilleltensky & Prilleltensky, 2005; Vincent et al., 2017).

### Safety

Safe interventions protect people from harm and safeguard their human rights. This is a duty of care which not only demands that those at risk of harm receive appropriate help, but that any potential unintended consequences are considered to ensure that intervention activities do not expose people to increased or unacceptable risks, including people outside of the intended target population (EMCDDA, 2010, NICE, 2007; 2017).

### Acceptability

Acceptable interventions respect people’s autonomy and dignity. This means ensuring that intervention activities remain culturally sensitive and recognise the specific needs and strengths of the target population and any other groups involved in intervention activities (NICE, 2017; UNODC & WHO, 2018). Interventions which are acceptable to the people they engage with are not only respectful but are more likely to encourage intervention uptake and remain sustainable (ACMD, 2015; NICE, 2017; UNODC & WHO, 2018). The acceptability of interventions can be increased by working closely with communities and conducting thorough needs assessments (NICE, 2007; Ungar & Liebenberg, 2009).

### Relevance

Relevant interventions are not only well suited for achieving the aims of the intervention but also target those who need help most. This involves identifying who is most at risk, as well as ensuring a good match between the intervention design and the needs and resources of the target population. This means paying attention to the unique aspects of both the target behaviour and the target population, as well as any moderators or mediators which may impact the effectiveness of the intervention such as age, socio-economic status or any other potential risk or protective factors (EMCDDA, 2011; NICE, 2017). A careful needs analysis will indicate the appropriate level and scope of the intervention, as well as aiding the selection of suitable mechanisms of change; the causal pathways through which the intervention is expected to bring about the desired change in behaviour. Interventions can aim to lever factors at a level close to the people whose behaviour is intended to change, such as internal psycho-social factors like beliefs and attitudes (microsystem); at more intermediary levels, such as factors which shape their family environment (mesosystem) and parents’ workplace (exosystem); or at more distal levels such as national policies or societal norms (macrosystem) (Brofenbrenner, 1977, 1986). The scope of the intervention can be broad, encompassing the whole population (universal); or more selective, targeting particular at-risk groups (selective);, or narrow, targeting specific individuals known to be at risk (indicated) (Mrazek & Haggerty, 1994).

### Feasibility

Feasible interventions are those which are most likely to be implemented and sustained. This means assessing practical aspects of implementation, such as funding and cost-effectiveness, in addition to considering the compatibility of the approach with local and national policy, relevant guidelines, strategies and funding priorities (NICE, 2017).

### Evidence-based

Evidence-based interventions consider scientific knowledge about what works. This means reviewing the available evidence on the effectiveness of previous interventions to identify which interventions, in which contexts, have a proven track record as well as identifying those which are ineffective or potentially harmful (EMCDDA, 2011; NICE, 2007). Where possible, interventions should not only be evidence-based but evidence-producing (EMCDDA, 2010; 2011). As the creation of a high-quality evidence base is dependent upon understanding what was done, to whom, and how, to produce the desired outcome, it is vital that intervention components and the proposed mechanisms of change are clearly reported. A clear understanding of key intervention components and how they relate to each other is significantly aided by the use of theory (EMCDDA, 2011). As high-quality theory-based interventions are also more effective (Prestwich, Webb, & Conner, 2015), using appropriate theory to aid intervention development can improve both the effectiveness of the intervention itself and the efficacy of future interventions.

## Thesis overview

The current chapter (Chapter 1) provides an introduction to, and an overview of, the research reported in this thesis. The remaining chapters are outlined below.

**Chapter 2** provides the background to the research, beginning with a description of NPS that presents a definition, clarifies terminology and describes the shifting situation around legal status. The political context is discussed further in terms of how NPS are addressed by legislation including a consideration of the Psychoactive Substance Act 2016 (PS Act). It then discusses the NPS market and its relationship to the market for illicit drugs, the supply chain and the drivers for growth. The social context is discussed in relation to the prevalence of use in different populations and evidence for different user populations. The health context is discussed in terms of the harm potential of NPS, followed by evidence of harms associated with NPS use, mortality rates and the reliability of available evidence.

**Chapter 3** positions NPS as a target for behaviour change interventions and in acknowledgement of the recommendation that interventions targeting traditional drugs should be applied to NPS, reviews the current guidelines on illicit drug interventions. Key evidence-based guidelines are identified and their recommendations are presented along with an overview of types of drug interventions described.

**Chapter 4** presents a systematic review of the current literature concerned with psychosocial factors associated with NPS use to examine the available evidence on users’ and potential users’ reasons for using or not using NPS. The chapter provides an overview of what is known, identifies similarities and differences between study findings and identifies gaps in the literature addressing young people’s motives for using or not using NPS.

**Chapter 5** provides a rationale for the methods used in the thesis and sets out the research work plan. The chapter provides an overview of the three qualitative studies designed to address the research questions. Existing theoretical models informing the study design are described along with the processes for question development, data collection and an explanation for the choice of analytical methods used. The community-based approach is set out and the role of community groups described.

**Chapter 6** presents Study 1 which used focus groups to elicit young people’s beliefs and motives for NPS use and non-use. This chapter documents the procedure and findings from the focus groups, presenting the analysis of the data and a description of the ten motivational domains identified as relevant to young people’s NPS behaviour. The findings of the study, including implications for interventions, are discussed together with an assessment of theoretical models suitable for use in intervention design.

**Chapter 7** presents Study 2 which replicates the Study 1 procedure approximately 15 months after the PS Act came into force, providing comparative data for investigating the impact of the ban on young people’s beliefs about NPS. The findings present the most notable differences in beliefs before and after the introduction of the PS Act and describe how the ban appears to have affected young people’s perceptions of NPS users. The implications of the findings are discussed and it is argued that the introduction of the PS Act has led to several unintended consequences such as stigmatisation of vulnerable users and displacement onto other substances of abuse. The implications of the findings are considered in light of what they mean for interventions and the suitability of theoretical models for use in intervention design.

**Chapter 8** presents Study 3, which uses focus groups to further explore conflicts and interactions between the motivations identified in Studies 1 and 2, as well as young people’s opinions about the best ways to help people and what would make an acceptable (or unacceptable) intervention.

**Chapter 9** summarises the principal findings of the thesis and discusses how they answer the research questions and their contribution to the existing literature. The findings are considered in the light of the changes to the drug market signalled by the emergence of NPS as well as the impact of the PS Act and what this means for NPS interventions. The chapter goes on to explore some of the key issues which emerged as relevant to young people in particular and would need to be considered by interventionists working with this population. Finally, an example approach for addressing NPS in the context of the changes in the market brought about with the introduction of the PS Act is presented. The chapter concludes with a discussion of the strengths and limitations of the research project and consideration of the implications of the findings for research.

# Background

## Introduction

This research aims to inform the development of interventions targeting young people’s use of a group of psychoactive substances which have become known as legal highs. As work grounded in the discipline of social psychology, the project sets out to improve our understanding of young people’s motivations and attitudes around these substances following the logic that influencing people’s attitudes can lead to behaviour change. Before investigating young people’s thoughts about them, however, it is important to appreciate what legal highs are, who uses them, what the risks of use are and who is most at risk of harm. Accordingly, this chapter provides an overview of the wider context and background that frames legal highs as a public health concern. The opening section focuses on the substances themselves, starting with a description that presents the difficulties of definition, examines the types of substances involved and describes the growth of the market and its interactions with legislation and the illicit drug trade. The shifting situation around legal status is then explored further, with a description of drugs legislation and the circumstances leading to the introduction of the Psychoactive Substance Act 2016 (PS Act). This is followed by an overview of the legal highs market, the products available, where they are sourced, and a brief review of the evolving situation post-implementation of the PS Act. The next section focuses on users, examining prevalence of use, comparing estimates for young people with the general population and use of other substances, as well as looking at trends in use before taking a closer look at specific subpopulations and at-risk groups. The final section examines the risks of use, looking at growing evidence of health harms associated with legal highs and the impact of the PS Act on measures of harm, examining healthcare admissions and mortality data while paying attention to confounding variables such as polydrug use and other influences affecting the wider drugs market and healthcare services. The chapter concludes by drawing together the findings of each section, reflecting on the impact of legislative change on the legal highs market and the dynamic interactions between regulation, production, supply, demand and resultant health harms.

## New psychoactive substances or ‘legal highs’

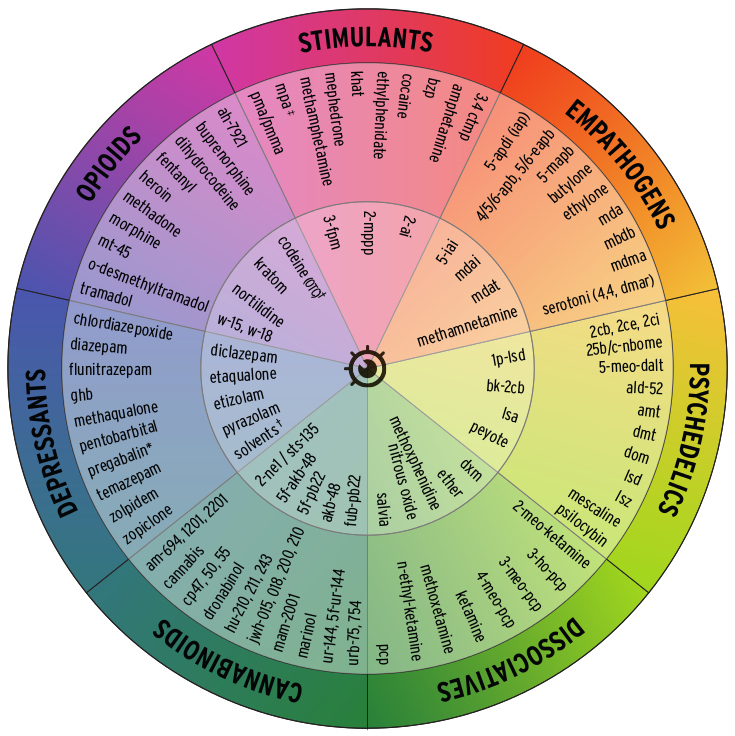
Psychoactive substances are chemicals that, when ingested, have mood-altering properties and affect mental processes (WHO, 2012). New Psychoactive Substances (NPS), also known as ‘legal highs’, are synthetic, manufactured chemicals that produce similar psychoactive effects to traditional illicit drugs of abuse such as cannabis, ecstasy, cocaine and heroin (NEPTUNE, 2015; ONS, 2014). In the UK, the market for legal highs remained limited to only a handful of substances until about a decade ago when the number of novel drugs increased exponentially. While numbers remained low, drugs could be referred to by individual name but as the number of new substances grew, classifying this heterogeneous and constantly shifting group of hundreds of drugs has proved problematic. At the heart of the problem is legal status. So long as new substances remain outside the scope of drug legislation they can be sold legally, provided they are not advertised for human consumption. Once a substance is brought under legislative control however, it becomes classified as an illicit substance. The problem then becomes how to distinguish these novel psychoactive substances from traditional illicit drugs given that, prior to being controlled, the only common feature of this group of heterogeneous drugs is their legal status. While informally, the marketing term ‘legal highs’ gained traction as a catch-all term, it is seen as inappropriate for formal contexts due to connotations of legality and safety and its emphasis on exciting recreational effects (Corazza et. al., 2013; McElrath, 2011; NAW, 2015; Sheridan, 2010). However, the challenges of defining such a varied group of drugs mean there is yet to be consensus on what to call these substances in formal settings and definitions remain contested, inconsistent and tend to diverge from what is culturally meant by the term legal highs. Although they have variously been referred to as *new*, *synthetic*, *novel*, *designer* and *emerging* psychoactive substances, many legally available substances were known to the authorities for decades, while several traditional drugs could also be described as synthetic.

Generally, the term *new psychoactive substances* is emerging as the dominant descriptive phrase for contrasting this group of substances with traditional drugs of abuse. Nevertheless, there are no clear criteria for what defines an NPS and precisely which drugs are included as NPS varies between publications and over time (ONS, 2015). In particular, there is a lack of clarity around whether definitions of NPS include illicit substances or whether, by default, when a substance is made illegal it is no longer considered an NPS. For example, two popular laboratory synthesised drugs, ketamine and mephedrone (controlled in 1999 and 2010 respectively) are occasionally included as an NPS in some measures but generally remain excluded from analyses.

From the perspective of young people contemplating drug use, overly formal terminology may be counterproductive, as they might not equate terms such as New Psychoactive Substances with the legal highs and branded products talked about in social interactions, promoted in the media or sold in shops and online. Consequently, for the purposes of this research, the group of drugs of interest will be referred to interchangeably as New Psychoactive Substances (NPS) and Legal Highs as appropriate, depending on context.

### Types of NPS

There is no formal system for categorising NPS, and no officially agreed list of substances (ONS, 2015). NPS can be grouped in several ways such as chemical family, psychoactive effects or legal status. From the perspective of young people encountering NPS in their everyday lives the psychoactive effects and legal status of the drugs are likely to be most relevant. A useful resource for understanding NPS in this way is The Drugs Wheel (Figure 2-1: Adley and DrugsWatch, 2015) which differentiates between stimulants, empathogens, psychedelics, dissociatives, cannabinoids, depressants and opioids.

Figure 2-1. The Drugs Wheel

Middle ring: Controlled or regulated in the UK   
Inner ring: Legal in the UK prior to 26th May 2016

Image courtesy of Mark Aldley in collaboration with DrugWatch (2015)

The primary source of information on the availability of NPS comes from the EU early warning system managed by the European Monitoring Centre for Drugs and Drugs Addiction (EMCDDA). The EU early warning system collates information on drug seizure and law enforcement activities provided by the 28 European member states plus Norway and Turkey (Figure 2-2). Although the data presented is based on European trends there are several reasons why it remains relevant to the UK. European and UK drug markets are known to be closely linked, with the majority of NPS thought to be imported to the UK from producers and processors located on the European mainland (EMCDDA, 2018). In addition, the UK Government has strongly promoted engagement with the EU early warning system and data from the UK is credited as being some of the most extensive and reliable provided to the EMCDDA.

Figure 2-2. Number and type of NPS newly identified by the EU early warning system

Number of newly identified NPS

81

74

48

41

24

13

15

7

13

98

101

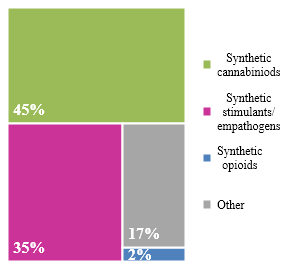
66

51

**Source: EMCDDA   
(2018)**

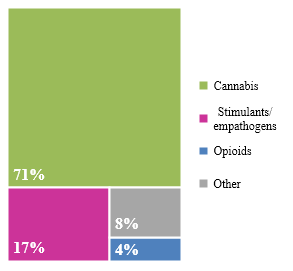
By 2017, the EU early warning system had detected 670 new psychoactive substances of which 70% were detected in the preceding five years. The most commonly detected new substances were synthetic cannabinoids and synthetic stimulants/ empathogens making these two NPS types the most chemically diverse groups. New substance detections peaked in 2014 and 2015 but since then have been in decline. Although the reasons for the decline are not entirely clear, it is thought that it is likely the result of law enforcement operations targeting NPS factories in China and the measures taken by the Governments of European countries to prohibit new substances (EMCDDA, 2018). Although seizures of novel substances may not directly equate to marketed products, over 50% of the substances being monitored by the EU early warning system remained active within Europe’s drug market during 2017 which suggests that many substances have found some commercial success (EMCDDA, 2018).

In terms of the quantity of NPS seized, synthetic cannabinoids make up the greatest volume, followed by synthetic stimulants/empathogens (Figure 2-3). Together these two NPS types comprised 80% of all NPS seizures in 2016. This suggests these two groups make up the majority of NPS products and are potentially, therefore, the NPS young people are most likely to come into contact with. The relative volumes of synthetic cannabinoids (45%) and synthetic stimulants/empathogens (35%) found in seizures echoes the relative quantities of their traditional counterparts where cannabis makes up the bulk of drug seizures (71%), followed by stimulants/empathogens (17%: see Figure 2-4). Overall, however, NPS seizures are considerably smaller in scale than seizures for traditional drugs with 71,000 NPS seizures in Europe in 2016, compared to over one million for traditional illicit drugs. The relative dominance of cannabinoids and stimulants/ empathogens in both traditional and synthetic drug seizures suggests that the market for NPS, although smaller, may follow similar trends to the traditional drugs they emulate.

Figure 2-3. NPS drug seizures in 2016  
Proportion of seizures by substance type

**Source: EMCDDA (2018)**

Figure 2-4. Illicit drug seizures in 2016  
Proportion of seizures by substance type



### Synthetic cannabinoids

Synthetic cannabinoids mimic the psychoactive element found in cannabis. They are imported into Europe from factories in China or India as highly concentrated forms, which are then sprayed onto plant materials, packaged and sold as smoking mixtures. They are sold under numerous brand names, the most well-known being Spice and Black mamba. Despite the fact that the original Spice product was banned in 2009, over time, the name Spice has become generic slang for all synthetic cannabinoids. Originally marketed as legal alternatives to natural cannabis products they were initially associated with recreational use as relaxants (Vandrey et al., 2012) but are increasingly being used by more marginalised groups such as the homeless and prison inmates (Bonar, Ashrafioun, & Ilgen 2014; Scottish Prisoner Survey, 2017; User Voice, 2016). Successive generations of increasingly potent synthetic cannabinoids have evolved in response to key substances being banned in 2009 and 2010 (ACMD, 2011) and recently there have been reports of even greater increases in potency (DrugsWatch, 2018; EMCDDA, 2018). Although they appear to be the most commonly used NPS, the volume of synthetic cannabinoids in drug seizures has decreased in the last couple of years. Together with anecdotal reports that the quality of synthetic cannabinoids has been dropping, this suggests that they may be declining in popularity (DrugWise, 2017; EMCDDA, 2018; Ralphs Gray & Norton, 2017). Although prevalence appears to be relatively low in comparison to natural cannabis, their harm potential is thought to be considerable and evidence now links synthetic cannabinoids to acute health harms and death (EMCDDA, 2018).

### Synthetic stimulants and empathogens

Synthetic stimulants and empathogens are mostly made up ofsynthetic cathinones and to a lesser extent, substituted piperazines and tryptamines. These NPS havesimilar effects to amphetamines, cocaine and ecstasy. They make up the second-largest group of NPS and although overall numbers of seizures of NPS have decreased in 2016 and 20017, the quantities of stimulants/ empathogens have increased during this time which suggests they may be growing in popularity (EMCDDA, 2018). Usually sold as powders and pills, synthetic stimulants and empathogens are typically used on nights out and associated with extended periods of socialising and dancing (Butler & Sheridan, 2009; Drugscope, 2014; Kelleher et al., 2011; Winstock et al., 2010). However, they are increasingly being used by opioid and stimulant injectors (EMCDDA, 2018). The most well-known synthetic cathinone is mephedrone, but as noted earlier, as a first-generation NPS controlled since 2010, mephedrone is often, but not always, excluded from analyses of NPS. Similarly, another popular early stimulant, Benzylpiperazine (BZP), a substituted piperazine controlled in 2009 is inconsistently included as an NPS. Other notable synthetic stimulants include MPDV, NRG-1 and Benzo Fury. However, in many regions of the UK the sang term Bubble has been taken up as a catch-all term for synthetic stimulants or any generic white powder (DrugScope, 2014).

### Synthetic dissociatives and NOS

Generally, synthetic dissociatives related to ketamine such as methoxetamine also make up only a small proportion of NPS. However, one quite different type of dissociative, nitrous oxide, is reported to have high prevalence rates, particularly with young people (CSEW, 2014). Despite being a volatile substance that has been in use as an anaesthetic and aerosol for many years, nitrous oxide is frequently, but not always, included within the category of NPS as it is a recreational drug that can be legally obtained. Although it is a controlled substance which is illegal to sell for recreational purposes, it is legal for catering companies to sell it due to its use as a propellant in the catering industry. Also known as NOS, nitrous oxide is a gas which when used recreationally is typically inhaled from balloons inflated from pressured canisters. Its effects are short-lived, and its harm potential is low compared with other drugs (Winstock et. al., 2010).

### Synthetic psychedelics, opioids and depressants

Other synthetic substances appear to make up a relatively small proportion of NPS and are less prominent in the literature. Synthetic psychedelics emulate the effects of LSD and are known for promoting a sense of spiritual connection, heightened senses and visual and auditory hallucinations (Corazza, 2011). Although prevalence is low, there are concerns about the relatively high toxicity of some synthetic psychedelics such as 25i-NBOMe and Bromo-dragonfly (Corazza, 2011). Similarly, synthetic opioids show low rates of prevalence, but the high harm potential of some opioids and their increasing popularity, in particular fentanyls, are a cause for concern (EMCDDA, 2018). Another group of drugs with low but rising prevalence associated with high-risk drug use are the synthetic depressants, benzodiazepines (EMCDDA, 2018).

### Implications of NPS diversity for interventions

Although they are often treated as a single category of drug, NPS are, in fact, a diverse group of psychoactive substances comprising analogues of each of the popular traditional illicit drugs. While it is widely recognised that users have a variety of different motivations for using the traditional illicit drug which NPS emulate, people’s motivations for using the different types of NPS are rarely considered. Understanding how young people’s attitudes and motivations interact with the different types of substances would be beneficial for intervention development. It is important that interventions take account of the heterogeneity of NPS as the diversity of the market has important implications for drugs education. The proliferation and diversity of psychoactive substances identified in seizures indicates that young people encountering psychoactive drugs are now increasingly likely to come across products containing unknown ingredients which they may not be able to identify correctly. Consequently, interventions using educational approaches based on connecting harms information with specific substances may become less relevant, while those focusing on strategies for dealing with unknown substances may increase in relevance.

### Growth of the legal highs market

The growth of the NPS market has much to do with the insufficiency of traditional forms of drug control to keep up with advances in the manufacturing and distribution of psychoactive substances. With drug laws developed in response to a slow-moving and decades-long stable market for predominantly plant-based drugs, legislative procedures have been ill-equipped to handle the innovation and flexibility of modern lab-based production methods.

The development of NPS was made possible with the emergence of the internet combined with the advances in technology, equipment and education that accompanied the growth of the pharmaceutical industry. Resourceful entrepreneurs capitalised on these advances, developing drugs that could be produced in bulk cheaply and rapidly in overseas laboratories while using websites to access a global pool of customers with relatively low financial or legal risk (Kelleher et al., 2011; Psychonaut WebMapping Research Group, 2009).

Although the emergence of first-generation NPS has been traced back to the late 1990’s prevalence remained low and restricted to niche populations until sudden growth and diversification of the NPS market around ten years ago (Dresen et al., 2010). The rapid expansion of the NPS market is attributed to ‘the perfect storm’ of factors coinciding around 2009 (Bowden Jones, Shaprio & Brown, 2014; Measham et al., 2010; Winstock et al., 2010). Introduction of stricter security at borders in response to terrorism and illegal immigration resulted in notable enforcement successes that precipitated a significant slump in the availability of cocaine, ecstasy and heroin (BBC News, 2009; Ceyhan, 2008). In response to reductions in availability, suppliers increasingly diluted their stock with cutting agents and prices rose, prompting displacement onto the cheaper and more readily available NPS.

At this time, the NPS market involved a relatively small number of substances, mostly benzylpiperazine (BZP), mephedrone and first-generation synthetic cannabinoids (Corazza, 2011; Dresen et al., 2010; Drugs-Forum, 2009; Zonged, 2009). Following press coverage of the death of Gabrielle Price misattributed to mephedrone in 2009, the popularity of mephedrone rose sharply as it gained a reputation as a cheap, legal alternative to ecstasy (Carhart Harris & Nutt 2011; Measham et al., 2010; Winstock et. al., 2010). Around this time Google web searches for NPS increased exponentially and commercial websites and shops selling legal highs flourished both in the UK and abroad (ACMD, 2011).

As awareness of NPS increased, so too did pressure on the UK Government to act. In 2009 first-generation synthetic cannabinoids known as Spice (CP-47, 497-C8 and JWH-018), were brought under the 1971 Misuse of Drugs Act and classified as a Class B drug which made them illegal to produce, sell or possess. This was followed a year later in 2010 by the classification of mephedrone as a Class B drug. However, the innovation and technical proficiency of NPS manufacture allowed producers to respond rapidly to the legislative changes and only four weeks after Spice was banned the alternative cannabinoid JWH-073 was substituted into Spice branded products (Every-Palmer, 2011; Lindigkeit et al., 2009). Similarly, when Mephedrone was banned, the alternative synthetic cathinone 4-MEC was openly marketed as a replacement. It is this cat and mouse game between authorities and producers that is credited as the main driver of NPS production worldwide as more substances are chemically altered to replace banned products in order to take advantage of the lucrative global market for legally available recreational drugs (ACMD; 2011; HM Government 2016; Measham et. al., 2010; NEPTUNE, 2015; Van Hout, 2014).

## NPS and UK Law

Understanding the relationship between legal status and NPS is important; not only does legal status affect the availability of drugs but it is also expected to influence the way in which people perceive them. Self-assessed personal risk is likely to alter if the legal consequences of possession and use change, and in so far as legality affects perceptions of safety, legally available substances may be perceived as less harmful.

The problem with legal highs has occurred due to the legal availability of uncontrolled substances. The concern is that potential users may not appreciate the difference between controlled and uncontrolled substances and assume that a legally available substance has been regulated and tested and is therefore safe to use. However, legal status and regulatory control are not equivalent. A controlled substance can be legal or illegal, and legally available substance can be controlled or uncontrolled. In addition, an individual psychoactive substance can be both legal and illegal, depending on how it is prepared, the quantity possessed and its intended use.

Much of the difficulty with controlling NPS stems from the fact that psychoactive substances are found in many legitimate commercial products including food and drinks as well as being used as medicines. For example, alcohol and tobacco are psychoactive substances which are licenced for legal use. Furthermore, not all psychoactive substances are used for recreational purposes and substances differ greatly in their harm potential. As a result, the legal status and regulation of psychoactive substances is complex, falling under the scope of several legislative domains. In the context of this research, the legislation most relevant to NPS are those which cover medicines and drugs as they generally determine the legal status of psychoactive substances and the various penalties for production, supply and possession of each type of drug.

Prior to the introduction of the Psychoactive Substances Act in 2016, an NPS remained uncontrolled until it could be listed under the 1971 Misuse of Drugs Act (MDA). However, bringing a new substance under the MDA requires a lengthy and involved procedure of identification, research, risk assessment and scheduling, which can take several years. With the rapid proliferation of new psychoactive substances, the time-consuming procedures of the MDA were unable to keep up and the number of uncontrolled substances available for sale continued to increase. To shorten the length of time between the discovery of a suspected harmful substance and introduction of controls, in 2011 the UK Government amended the MDA to enable Temporary Class Orders which allow certain controls to be placed over named substances for a period of one year while risk assessments are carried out. In the meantime, however, reports of NPS related harms gained increasing press attention and in response to mounting pressure for action, the Government introduced the PS Act in 2016. Following the implementation of the Act new substances are by default subject to controls until they can be brought under the MDA, at which point the penalties associated with the substance change according to its classification within the MDA.

### The 1971 Misuse of Drugs Act

The Misuse of Drugs Act makes it illegal for people to produce, supply, possess or import/export drugs brought under its control. Named substances are included in the act by Government decree following an evaluation of their harmfulness. Drugs are classified as one of three classes according to their relative harm potential. The three classes A, B and C determine the levels of penalty for possession and dealing (Table 2-1).

**Table 2-1. Drug classifications under the 1971 Misuse of Drugs Act**

|  |  |  |
| --- | --- | --- |
| **Drug Class** | **Penalties for possession** | **Supply and production** |
| Class A | Up to 7 years in prison, an unlimited fine or both | Up to life in prison, an unlimited fine or both |
| Class B | Up to 5 years in prison, an unlimited fine or both | Up to 14 years in prison, an unlimited fine or both |
| Class C | Up to 2 years in prison, an unlimited fine or both | Up to 14 years in prison, an unlimited fine or both |
| TCO | No penalty but suspected controlled substances can be confiscated | Up to 14 years in prison, an unlimited fine or both |

Maximum sentences differ according to the nature of the offence with less for possession; more for production, trafficking, production and dealing. A less serious offence such as possession for personal use is typically handled by magistrates’ courts, where maximum sentences are limited to six months and/or a £5,000 fine.

### Other forms of legislation

If an NPS is not controlled by the MDA but it falls under the scope of other legislation, then their penalties can be brought into force. Typically, this would be if it was scheduled under the 1968 Medicines Act, or mis-sold according to trading standards or food regulations. It is in order to avoid such regulations that branded legal high products are typically printed with the disclaimer that they are not for human consumption and no dosing information or instructions for use are provided.

### The 2016 Psychoactive Substances Act (PS Act)

It was in attempting to bring an end to this arms race between producers and authorities and to protect young people from the threat posed by NPS that the UK Government introduced the PS Act in 2016 (HM Government, 2016). Whereas pre-existing legislation is based on the classification of named drugs based on evidence of harm, the PS Act reverses the situation, placing a blanket ban on all psychoactive substances in the UK apart from named exemptions. In other words, prior to the PSA Act, psychoactive substances were legal by default and illegal by exception, whereas now they are illegal by default and legal by exception. This means that new chemical compounds emerging into the market are automatically controlled under the blanket ban. The Act was introduced with the intention of tackling NPS-related harms by reducing people’s use of legal highs (HM Government, 2016). The primary purpose of the Act was to close high street retail outlets selling legal highs, thereby decreasing people’s exposure to NPS. Although the Act does not criminalise users for possession of NPS it is intended to send a clear health message to potential users that so-called legal highs are not safe (HM Government, 2016).

Brought into force on 26 May 2016, the Act makes it an offence to produce, supply or import/export any substance intended for human consumption capable of producing a psychoactive effect unless specifically exempted. Exempted substances include food, alcohol, tobacco, nicotine, caffeine, medicines and controlled drugs, which continue to be regulated by the MDA and Medicines Act. Within the Act, a psychoactive substance is defined as a substance which ‘produces a psychoactive effect in a person if, by stimulating or depressing the person’s central nervous system, it affects the person’s mental functioning or emotional state’ (p.2, PS Act; HM Government, 2016). The maximum sentence for production and supply is seven years in prison and/or an unlimited fine. However, as with the MDA, less serious offences handled by the magistrate’s court are limited to a twelve-month sentence. The PS Act also authorises prohibition notices and orders used as a warning to sellers to cease prohibited activities, the breach of which is a criminal offence punishable by a prison sentence of up to two years and an unlimited fine.

### Critique of the Psychoactive Substances Act

The introduction of the PS Act was not without controversy. Numerous commentators from media, political and academic contexts criticised both the delivery and content of the (e.g. Lione, 2016). Critics expressed concerns that the introduction of the Act was rushed, and insufficient time had been given for the evidence around NPS to be reviewed and considered. In terms of the content, several critics pointed in particular to the very broad definition of psychoactive substances used. By encompassing such a wide range of substances and making no reference to their harm potential, critics claimed that enforcement of the act would be unfeasible. Others criticised the act more generally, concerned that, as part of a prohibitive approach to drug control, the likely outcome would be to drive sales of NPS onto the black market alongside traditional illicit drugs. With production shifting onto unscrupulous black-market traders, critics expressed concern that NPS will become more dangerous as any measure of protection that had been afforded by legitimate traders’ concern for their customer base would be lost. With less concern for people’s wellbeing, black market traders are then expected to create products that are not only more dangerous but also more directly targeted at vulnerable users. Furthermore, by framing NPS as a criminal rather than a health issue, there are concerns that users will become stigmatised, with vulnerable and marginalised users disproportionally affected by increasing risks of use and stigmatisation.

### Young people and the law around NPS

The law around NPS is complex, with individual substances subject to various penalties for possession ranging from no penalty to a maximum of 7 years imprisonment depending on whether it falls under the PS Act, MDA or other legislation. The wide variation in penalties associated with different drugs has implications for the way in which potential users can be expected to relate to each substance. However, with such large numbers of NPS potentially available and differences in legal status being dependent on ad-hoc processes of scheduling it seems unlikely that young people will be aware of the differing legal statuses between many substances. Currently, no research has looked at young people’s awareness of the legal status of NPS or the way in which the changing legal status of these substances affects their attitudes and perceptions.

## **Sales and marketing**

Findings from drug seizures usefully provide an indication of the scale of the NPS market and the types of substances involved. However, drug seizure data offers little insight into where young people obtain NPS and the nature of the products they encounter. The way in which NPS are marketed and accessed has important implications for how young people interact with these substances and the parameters within which their decisions around NPS are made.

Figure 2-5: Typical high street Headshops selling NPS



**1**

**2**

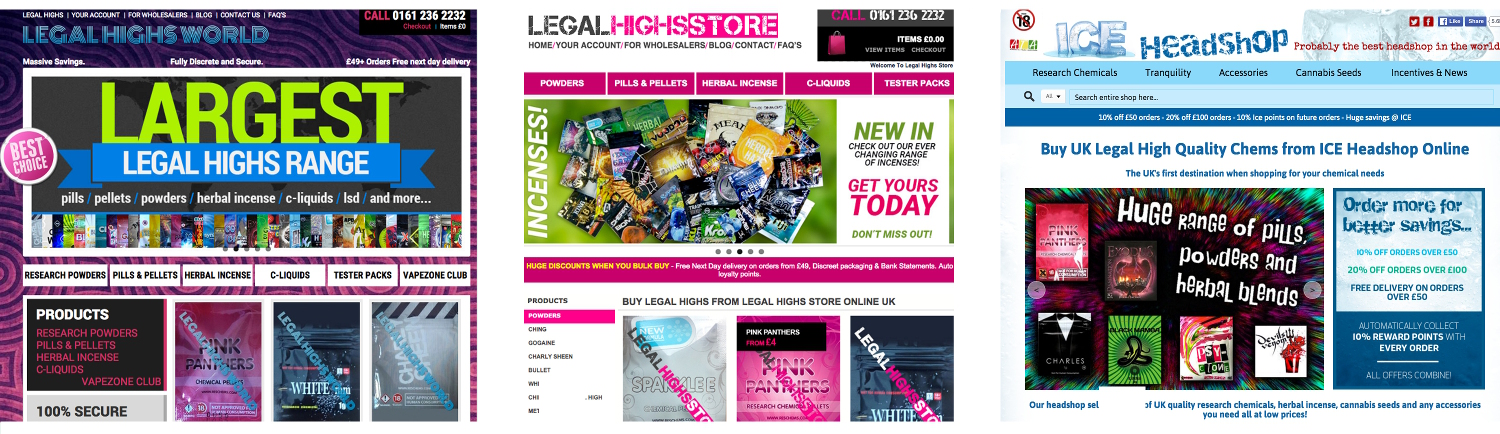
**3**

**4**

Prior to the introduction of the PS Act on 26th May 2016, NPS could be purchased through specialist mail-order websites and over the counter in high street shops. The majority of high street sales are thought to have been made via drug paraphernalia shops known as ‘Headshops’ (see Figure 2-5) and young people were thought to be especially likely to use them (ACMD 2011; DrugScope, 2014; EMCDDA, 2009). In the year before the introduction of the ban, Government estimates put the number of high street Headshops supplying NPS at around 335, with an additional 210 small scale sellers such as newsagents, convenience stores and petrol stations (Home Office, 2015).

Websites specializing in NPS products could be found on both the surface web and the dark web (see Figure 2-6). Surface websites are accessible using mainstream search engines such as Google, while darknet sites allow users to remain hidden with the use of encrypted browsers and anonymous cryptocurrencies such as bitcoin. Prior to the ban, surface sites were hosted in the UK and abroad, mostly within Europe. They offered national and international delivery to residential addresses, often within 24 hours, using standard postal services and couriers (EMCDDA, 2018).

Figure 2-6: Websites advertising sales of NPS



In the year before implementation of the PS Act, there were estimated to be over 80 websites and online forums dedicated to the use and supply of NPS drugs in the UK and over 650 operating within the EU (EMCDDA, 2015; NCA, 2015). These figures only account for easily accessible surface web sites as it is not possible to establish the numbers of encrypted sites on the dark web where illegal drugs and banned NPS are sold covertly.

Despite the easy availability of NPS through legitimate retailers, qualitative studies and surveys indicate that they were also available through the same routes as traditional illegal drugs even before the PS Act, with many users accessing NPS via friends or street dealers (Besli et. al., 2015; CSEW, 2015; 2016).

### **NPS products**

Legal high products are generally sold pre-packaged under brand names with styling deliberately designed to be reminiscent of traditional drugs or their effects (see Figures 2-7 and 2-8). For example, while the brand name *NRG* alludes to the stimulant properties of amphetamines, *Empathy* is evocative of the empathic effects of ecstasy, *Blow* utilises a slang word for cocaine, and *Red eye* is a reference to bloodshot eyes, a common side effect of cannabis use. Typically, NPS products contain more than one psychoactive ingredient and mixtures are common (ACMD, 2011). NPS products are available in many different forms (e.g., pills, herbal mixtures, pre-rolled joints, powders and liquids) which can be consumed in a variety of ways as with traditional illicit drugs (e.g., swallowed as drinks, pills or capsules; rubbed on gums; smoked; inhaled; snorted; rectally administered; or injected). According to a qualitative survey of the UK and Manchester drugs scenes, the dominant NPS products sold by headshops were synthetic cannabinoids (DrugWise, 2017; Ralphs, Gray & Norton, 2017).

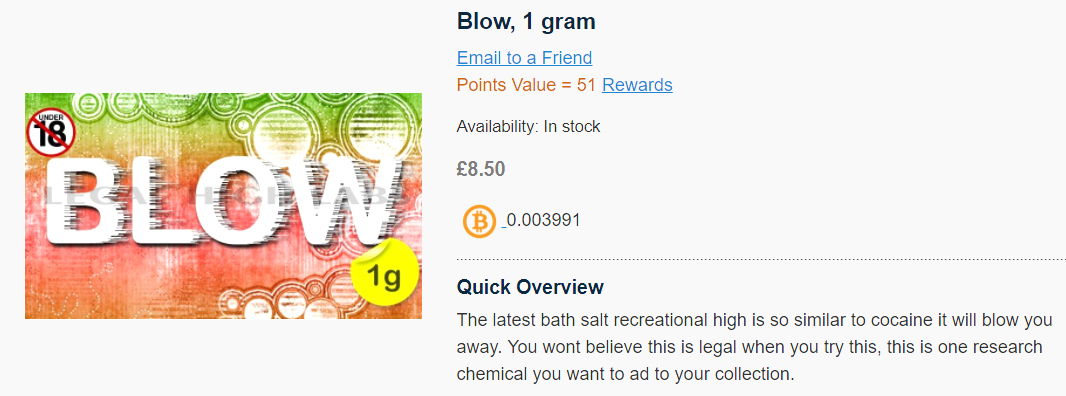
By selling products under brand names ingredients can be altered based on the availability of substances or to suit producers’ aims, as with the substitution of MDPV for Mephedrone in ‘Wildcat’ following the control of Mephedrone in 2010 (Kelleher et al., 2011). However, substitution of ingredients after implementation of controls was not always immediate, and controlled substances were commonly detected in products sold as legal highs (Dargan et al., 2011; Kellerher et al., 2011; Ramsey et. al. 2010).

Figure 2-7: Legal high products sold in headshops and online



To circumvent drug laws and regulation, prior to the ban packages were often labeled as *plant food*, *bath salts*, *incense* or *room odorisor* and marked *not for human consumption* (Vandrey et al., 2012; Vardakou et al., 2010). As NPS are not regulated, ingredients, health warnings, dosage information, expiry dates, and manufacturers details were rarely listed.   
When ingredients were presented, key psychoactive elements were usually omitted, or the product differed to the claimed contents (Kelleher, et al., 2011). The notable exception was the packaging of *research chemicals* sold via mail order websites. These were typically powders supplied in small transparent plastic bags labelled with not only ingredients but often diagrams of the chemical constituent as well (ACMD, 2011). Despite being labelled *not for human consumption* the intentional mimicry of traditional controlled drugs was often explicit, (The Psychonaut Research Group, 2006), as illustrated in Figure 2-8, the screenshot of an online sales listing for an NPS branded *Blow* which is described as ‘so similar to cocaine it will blow you away’.

Figure 2-8: Screenshot from website pre-ban legal highs



Although not all NPS introduced to the market enjoyed commercial success, surveys such as that carried out on behalf of Buckinghamshire County Council reported active use of 335 distinct products in 2013 (Barnard, Russell & McKeganey, 2014).

### Price

Many of the constituent chemicals involved in the manufacture of NPS are relatively cheap. Combined with the of ability for producers to outsource manufacturing of NPS to factories overseas where labour costs are low and regulations less stringent means NPS can be produced cheaply and in bulk. As a result, NPS are sold at significantly lower prices than their illicit counterparts (ACMD, 2011). Most information on prices is based on anecdotal reports in which legal highs are commonly described as very affordable (DrugScope, 2014) Most of the available information about price relates to Mephedrone having been well-established on the UK drug scene for a longer period, including studies which report a doubling of price after its control in 2010 (Bowden-jones, Shapiro & Brown, 2014). The early indications are that street prices of synthetic cannabinoids are seeing similar levels of increase following the introduction of the ban (DrugWise, 2017).

### Changes in availability following the introduction of the PS Act

A review of the outcomes of the PS Act published by the UK Government presented evidence from law enforcement agencies reporting that 332 NPS high street retailers had stopped selling NPS since the Act was introduced and 31 headshops had ceased trading (HM Government, 2018). The review concluded that the primary aim of the act had been achieved as the open sales of NPS were largely eliminated.

Data from the Crime Survey for England and Wales (CSEW) confirms that the proportion of people buying NPS (The survey asked respondents about their use of ‘legal highs’ but excluded mephedrone and Nitrous Oxide.) from shops appears to have reduced significantly since the Act was introduced (Figure 2-9). During the period 2014/15 to 2017/18, the CSEW included questions on the sources by which last-year users of NPS had obtained them on their last occasion of use. Data from the survey series shows that the number of users sampled who had obtained NPS from shops was six times greater prior to the introduction of the ban in 2014/15 than after the ban in 2017/18.

Figure 2-9. Source of NPS on the last occasion used

**Source: CSEW (2018)**

Other changes in patterns of sourcing NPS over the 2014/15 – 2017/18 period show that while the proportion of users obtaining NPS via the internet appeared to remain fairly consistent over the four years sampled, fewer people seemed to be accessing NPS via friends in the post-ban period. As for dealers, while the proportion of dealers known to the persons diminished as a source post-ban, sourcing NPS from unknown dealers appeared to become more commonplace. Additional questions included in the 2017/18 CSEW explored source information further by asking whether users knew the original source of NPS obtained via people known to them (Figure 2-10). Comparative data examining the original source of illicit drugs shows that the greatest difference in source relates to the internet. A significantly greater proportion of people believed the original source of NPS was from the internet (37%) compared with the sourcing of illicit drugs where only 1% were thought to be obtained from online sellers.

Figure 2-10. Source of NPS on last occasion used

Despite the reduction in availability of NPS through high street shops, a sizable proportion of total young people sampled in the CSEW in 2017/18 believed it would be easy or fairly easy to obtain NPS within 24 hours (33%), a similar proportion to the response regarding illicit drugs (35%). These changes support the view that following the introduction of the ban, sales of NPS have moved onto the black market where street-dealers have taken advantage of the opportunities provided by the ban. Qualitative studies undertaken by drug charities confirm that NPS trade has moved to street dealers (DrugWise, 2017; Ralphs, Gray & Norton, 2017). However, with shop-bought stocks running out, there are reports of dealers selling NPS, mainly Spice, from clear bags with no branding. Nevertheless, branded legal high products continue to be sold both on the surface web and via the darknet. Branded products available on surface web sites hosted in the UK and Europe appear to contain only legitimately saleable psychoactive substances, usually caffeine or taurine (see Figure 2-11). In contrast, products available through black market sources continue to contain illicit NPS possibly imported from small-scale producers in Europe (EMCDDA, 2018). According to the EMCDDA and Europol, while online sales are currently small in relation to the overall market for illicit drugs, the darknet continues to play a key role, particularly concerning NPS, and online sales appear to be growing. In an analysis of darknet marketplaces, the EMCDDA and Europol identified over 100 global darknet sites, estimating that two-thirds of all purchases taking place on the sites were drug-related. European dark-net sales were found to be mainly low-volume direct to customer sales, predominantly involving stimulant drugs (EMCDDA, 2018).

Figure 2-11: Screenshot from website selling post-ban legal highs

![A screenshot of a cell phone

Description automatically generated](data:image/jpeg;base64,/9j/4AAQSkZJRgABAQEAkACQAAD/4RDyRXhpZgAATU0AKgAAAAgABAE7AAIAAAANAAAISodpAAQAAAABAAAIWJydAAEAAAAaAAAQ0OocAAcAAAgMAAAAPgAAAAAc6gAAAAgAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAEVtaWx5IEdhZ25vbgAAAAWQAwACAAAAFAAAEKaQBAACAAAAFAAAELqSkQACAAAAAzcxAACSkgACAAAAAzcxAADqHAAHAAAIDAAACJoAAAAAHOoAAAAIAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA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g5OkNERUZHSElKU1RVVldYWVpjZGVmZ2hpanN0dXZ3eHl6g4SFhoeIiYqSk5SVlpeYmZqio6Slpqeoqaqys7S1tre4ubrCw8TFxsfIycrS09TV1tfY2drh4uPk5ebn6Onq8fLz9PX29/j5+v/EAB8BAAMBAQEBAQEBAQEAAAAAAAABAgMEBQYHCAkKC//EALURAAIBAgQEAwQHBQQEAAECdwABAgMRBAUhMQYSQVEHYXETIjKBCBRCkaGxwQkjM1LwFWJy0QoWJDThJfEXGBkaJicoKSo1Njc4OTpDREVGR0hJSlNUVVZXWFlaY2RlZmdoaWpzdHV2d3h5eoKDhIWGh4iJipKTlJWWl5iZmqKjpKWmp6ipqrKztLW2t7i5usLDxMXGx8jJytLT1NXW19jZ2uLj5OXm5+jp6vLz9PX29/j5+v/aAAwDAQACEQMRAD8A8Nooq5daVeWem2V/cw7LW/Dm2k3qfMCNtbgHIweOcUySlS1a1XSr3Q9Un07VIfIu7cgSR71baSAeqkg8Ed6qUALQKKKAFoq7pOj3+uXptNLg8+YRvKV3KoVFGWJLEAAAVDZWc+o6hb2VmnmXFzKsMSZA3OxwBk8Dk96BlfFFa2seG9Q0If8AExew3CQxtHb6jb3Dqw6hljdivTuBWVQAUUUUAFFJmt7SPBev67prX+l2Amt1ZlDNPGjSMq7mCKzBnIHJ2g0AYVLVnTtOutW1K3sNPi826uHEcUe4LuY9BkkAfjVmDQNTuW1EQW246YjSXf7xR5Sq20nk88+maAM2iipo7O5mtZrmG3lkgt9vnSqhKx7jhdx6DJ4GetAEGaM0Yq7Do99c6Rd6pBblrKzZEnmLABWc4UAE5J47Zx3oEUqMVf0XQtQ8QXkltpccckkULTyGWeOFUjX7zFnYKAPc0zU9KuNJnWG6ktJGZdwNreQ3K492iZgD7E5oAp0tJRmgYtGKM0uaADFJXS3vw/8AEthYz3dxYxGO2hWedYryCSSKNhkM0auWUYPUiuaoAKKKuaXpN7rN59k0yAzz7Gk2BgPlUZJ5I6AUAU6KKKACiiro0i9OhtrAh/0BbgWxmLqMybd20DOTxzwKAKVGKt2GmXWpeb9lWPbCoaRpZkiVQTjq5A6mpLjRNQtWlE0AAiiE7MsispQkAMCCQwyccZquWVr2I9pBPlvqZ+KTFOoqSxtAq3Y6ddalOYrKLeyqXYlgqoo6ksSAB7k06+0u703yzdxqFlG6OSORZEcd8MpIP51XK7XtoRzx5uW+pUpKWrFjp9xqVz5Foqs4Uud8ioAoGSSWIA4pJNuyKbSV2VqWrV/pl3prRi7jVRKu6N0kWRHHTIZSQfzqrQ007MUZKSugooqY20ws1uih8lnMYfPVgASPyIpajukQ0UVNa2s99dJbWkTSzSHCooyTT3BtJXZDSg+tSXVtNZXktrdJsmhco65BwR15HFRUtgTTV0KT6UlFFAwopBS0AFFFFABRRS0ANxSYp1FACClzSfSloAM+tIKWigApKUk9KTFAB1oo6UuaADgjpSUtJQAuaT6UtGKADk0maX6UmKACjpSlc9KQ0AJRS0UAGO9JS0UAJRRRQAUtJR9RQAUGigc9aAE/GgU7ApPpQAYooooAWkozS0AKVptLSHigAoPvQDQfegAFFIKWgQUUUlAxc0UUUCCiijNAABRRzRQAUUdqbuxQA6koBzS0AFFJRmmAtJS0UgCiikzQMWvQNS1S00/4aeDlu9C0/VC8d4Va7e4Up/pB4HlSoPzzXn9FAj3rxHps1xrGtXXhjQbHWtYbWo47uK5tEuTDB5KbcK4O1Cc5ccj1FV9RtdB0S7tI9E0fR7q3vPE5snee0juMRER741LA4AYsARyMcV4bSUAe3WGneH9bu54tZ0vS7O00/wAUCxiaC2SD9yFcBHYYLglV5Yk89a534mWVtaaLbCXw/daffpfSKLptGi06KSEjIQCORhJg4w/cd/XzPFLQB2nh8f2H8Nde1tgBPqbLpNqSv8J+eYj/AICAPxrH8F/8j94f/wCwnbf+jVrDoFAHstlo0j/E25bW/AcNhZ7711nuLW5KXbBHZc+c7Iem75QPapfC2n6N4ks/Duq6vpmmpezLfpHFb2UUcdzIgUxKYhsRyMnAJGe5rxWigZ7fdWumWWl6nfzeFRDqdlo5djqmiQ2iSuJlCSLbqzqCASD0DYHBFNjENr4BsNWh8IjUJ7zS5WY2nh23uIY59xAmebb+7x18sKVArxKu0tvibqFvLaXP9kaTJqNnaCzhv3jl81Ywu3oJAmcEjO2gDoPE9roFn4JufFFhZWe/xJHBDaW4hQrZOoP2goMfLyoGR03V0Pw/spE8A6VbWcFxcC/+1Sf2wiI6aLMRs5BHygrncSR14ryPXvEtxr0Njbta2tjZ6fEYra0tFYRxgnLHLMzEk9SSayKAPSLbw5b+Ffjjoul2ZuJIo7i3YTTEETkgEuhAGUJzj6Vr6FqGm6he+N7WTRrDTYxbyCe6t5LguyeeoYnzJWUevAFeQiigD6CvtB0SPxBFZSeGHeyOpWosbpdFhhthGWwVNwsjGcMv95c59O3OaLeahqNl47h0PRNNmnt3ghtLGHTYmUqsz/8ALPb+9YKCfm3HivIKKAOv+JllbWPiW1SGztrG7fT4Hv7W1UKkNyV+dQo4XtwOmak8Sf8AEi+HegaEPlnvy2rXYB5w3yQg/wDAQTj3rjKQ0Adt8K45Jdb1qOCx/tCRtDuwtptdvPO0fJhCGOenykH0rUs7abRvDfinUtQ8GWekXtvDafZYL2wkkVN8rK0irclySQcd14HHFeZkUlAj31fD+jGPUL/TtHgk1WS0sbg2lpo8V7sR0y7R2zuqgEjBK5I7DvWL4oOk6RoJuNK8M2lobvW3t3i1Gyi86KPy0ZoxneI8tnBBJUHjFePAVZ0+9m0zU7W/tdontZkmj3DI3KQRkfUUDPb/ABRPpnhbUvJufBiyad/aMYlvJvD0ENvFblcFI5wpMhychjtORXCfEbR9P8J2eneHLNLeW6V5by4uxGDIyOxEK7+uNgBx6nNVn+I8siXqHw3oYj1CZZ71NtwRcsrbhuzMSBu5wuB68cVzmu61eeItaudU1J1a4uGywRdqqAMBVHYAAAfSgD0vxx4k0/RPEV7bwabN9v1HSYLOe+kutyRwvEm/ZEEGGwOpY/Suhj03TtM1zU59Y8N6PH4Qs4IZNOvms4v37ZQACXGZSwL5BJxgcCvA8YooA+hP+EO8K2N6dIns7NpdBb+2LqZokJngZpT5THHKhRFweOaZoVpImqWVzougaemg3GhyTvqEVogYXDRsWXzQNwIPHl5xjtxXz9RQB7lqOiaHaeHkS20Ca+0yTS4ngvbbR4WRJ/lPmPeeZv8AvZDIV6dB607hoG+Jmu6TZ+ELa6tLKIxwLpukQTS2zNtPmmNl/e8n7pOB2xXjNFAHSePtNk0nxpeWk0lm7qEJ+x2y26LlAcGJeEb1HrWj45zo2h+H/Cw+V7S1+2Xa5H+vm+bB91XaPxriqWgDovC0cstjrKQWH9oObdMW+1zv/eL2QhuOvBrauYlW1kS8T7If7MjWazB/49l+0LxzyMj5sNk89a4PFFbxq8sbWOSeHcp81/608/0O/eCG0uLybVtKs4dOguIxYyC3QCZC+MBsfvAUySTnB9Kk/sXSrOT7FJDA8mjj7XcuVBMyEOdp9QP3YwfU155iir9uv5f6/qxn9Ul/P/X3+v33N/RFe/0XWLG1AN7ceVJHEvBkVWJZVHc8g49q1tLsDbaTBpWq24W8uJZ5YLadRvX9wVXKn7pLYxn0riaKzjVStp/VzWdByvZ2vr+FjvNIsJtMt9LjksY4r+eO9UpNbqZGOwbFIYZz6A9j6GsXQd6a/ff2jbsji0uPOhRBCR8hyANuF/Lj0rnaMU/a7WWwlh3aV3v5ebffzOs028i1OF7XT9ORpLG1c2NtOROzuzguxBUB2xnC7e3Q1qw6XY3jJb6ha29rexwRXt3GkSpsCMQ4IH3coVJXjntXn9JTjWturkywt/hlb+vX5+p6DHaaTJNaXf2S126vIJYYWUBUKRnKD0BkIGO/SnWlo89npsWv2ENrKbm4ZIBbLH5jCMbMx/KOvQcZwPWvPKKr267EvCP+b+tfP/h7HdXEVrALiaTSWS7g093b7ZpyW6uwkUK4iBI4BI9DXHRXMragJQ3lvI/zeUoQYJ5GFwAPYcVWorKdTmehvSo8id3e528Fslz4u8RD7MZ5ULtGUtVuXU+YAdsTcMcH8K53xLKZdcmxYHT1UKqwNbrAwGOpVQME8nv161Fp+qtYW1xbvawXUFxtLxT7wMrnByrKe571FqWoy6ncrLKkcYSNY444gQqIBwBkk/mTVzqKULGdOlKFS72tb8ipRRRXOdgUU0Dmn0AJRRRQAUUUUAIaWk5ozigBaKTOaXmgAopOaWgAopaSgApDS0YzQAmaKMYooAWikpaACikooAWkxRSjrQAlFLjFJQAUfWiigANJS0UAIKKXrSUAFGaXFGM0AIPpTug5oHXHagigBM0FaQCnZxQA08UUuc0negBcUu3ik6GgGgAxijFGfWjcaADZikIpwb1pGoAbRS9RSdKBC7iKSnbaMUAJmjFFJQA4Gj60lKc0DCkbHbrSU4YxzQITFJT8ZFNIxQAlJmlxSYpgKDRRjFFABRRRQAtFVHuflXaccc8UJLI3HmD8qQ7FuiqJmn28NxnrinR3EjMAW/EigLFulqMbicbv0oEhD7W596AsSigjFKRkZXpTXVwBg49TQAtJTN+eegpwBPc/lQAtLTcMGHI/GpBtZSBwRQFhopaYN24jPalQnHzHJoAfRQuGPXHtQVIPrQAUtIQQcZ5pR98rnmkAYpKcysB7n9KIwG4bINMBuKTbUoQFSfSkUAtgjFAEdGKn8tDwM/WnCOPbkrzn1oArUZqyY4zkAY981GqqCd+MduaAIjSDNWNsasARuHen+VEDgg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oooASilooASjNBooAM0tJS0AFJS0UAFJS0UAJRiiimAUUtJQAUUUCkAUUCigAoooNMAooopAFFFFMAooopAFFFFABRRRQB/9k=)

Before the ban products were labelled not for human consumption and ingredients were rarely listed, in contrast, legal high products sold on the surface web advertise ingredients, which are limited to legally available substances, in this case, caffeine and taurine.

### Types of NPS used

In 2014/15 and 2017/18 questions asking about the types of NPS consumed were also included in the Crime Survey for England and Wales. Since users cannot be expected to know the chemical constituents of the products used, they were asked about whether the last NPS they used in the last year was a powder, crystal or pill, a herbal smoking mixture, a liquid or another type of substance (Figure 2-12). Although it is not possible to equate individual substances with their appearance, generally, herbal smoking mixtures are likely to relate to synthetic cannabinoids and powers, pills and tablets relate to stimulants (DrugScope, 2014). Comparing the type of substances used by young people (aged 16-24) before and after the ban in 2014/15 and 2017/18, it appears that of use of synthetic cannabinoids has dropped by three quarters.

Figure 2-12. Type of NPS used on the last occasion by young people who used an NPS in the last year

**Source: CSEW (2018)**

## **Prevalence of NPS use**

Prevalence estimates are important for understanding the extent of NPS use and to help identify important subpopulations and at-risk groups so that interventions can be appropriately designed and targeted. The exponential growth of the NPS market over a relatively short space of time has left authorities and research organisations playing catch up in a complex and rapidly evolving field. Consequently, formal collection of data on NPS use is scarce, with reliable estimates for the general population limited to three survey series, of which the only one spans the ban period and can offer insights into the emerging post-ban situation. Prior to 2014, data estimates for the use of NPS largely relied on information about the use of individual named substances, predominantly mephedrone. Although mephedrone was the most popular substance emerging from the first wave of NPS, as a controlled substance since 2010 it is generally excluded from most analyses of legal highs or NPS. Whether or not users considered mephedrone to be a legal high, and if so, for how long, is unknown. Estimates for the prevalence of NPS use are therefore derived from a heterogeneous patchwork of stand-alone studies examining specific populations and substances, and a small number of household and school-based surveys reporting data on use of legal highs. This section starts out taking a broad view of NPS use in the UK, looking at the influence of demographic factors as well as short-term impacts of the ban within the general population and young people before going on to examine the evidence for different subpopulations of NPS users.

### Use of NPS in the general population

General population estimates for NPS use are drawn from three survey series conducted at the population level, a survey carried out in Northern Ireland by the National Advisory Committee on Drugs and Alcohol (NACDA, n≈7,000), the Crime Survey for England and Wales (CSEW, n≈20,000) and the Flash Eurobarometer (FAB, n≈500). Estimates are reported as either lifetime use, based on whether participants have ever taken an NPS, or last year use, based on consumption of NPS during the previous year. While lifetime rates offer some measure of the extent of NPS use in the population, last year rates to tap into recent use to provide some insight into fluctuations in use over time.

Data on the use of NPS in the adult population was provided by the NACDA for the years 2010/11 and 2014/15, in addition to the CSEW for which annual data about the use of NPS is available between 2014/15 and 2017/18. The percentage of respondents reporting lifetime use of NPS and a breakdown of use by gender for the two surveys are shown in Figures 2-13 and 2-14. Differences in sampling methods used, time periods and regional variations mean comparisons between the two surveys should be made with care, nevertheless, rates of use within and between the CSEW and NACDA show a consistent order of magnitude with the proportion of adults reporting lifetime use of NPS in each of the samples in the region of 2-3 %.

Figure 2-13 Adults’ lifetime prevalence of NPS use by gender (NACDA)

Percentage of sample using NPS

Percentage of sample using NPS

Figure 2-14 Adults’ lifetime prevalence of NPS use by gender (CSEW)

### Gender and age

Both the CSEW and NACDA survey results demonstrate a clear pattern of higher use by men than women, a finding supported by other studies of NPS use (Barnard et al., 2014; Barratt et al., 2013; Bonar, 2014; Carhart-Harris et al., 2011; Corazza et al., 2014; Freeman et al., 2012; NAW, 2015; SALSUS, 2013; Schifano et al., 2012; Vandrey et al., 2012; Van Hout, 2014). According to the evidence, men are around twice as likely to use NPS in their lifetime than women (Figures 2-15 and 2-16).

Figure 2-15. Lifetime and last year prevalence of NPS use by adults and young people in England and Wales

**Source: CSEW (2018)**

Figure 2-16. Lifetime prevalence of selected psychoactive substances by young people in England and Wales

**Source: CSEW (2018)**

Both the CSEW and NACDA surveys found use of NPS to be higher among young people than the adult population, a finding consistent with several other studies of NPS (Carhart-Harris et al., 2011; Freeman et al., 2012; McElrath, 2011; NAW, 2015; Schifano et al., 2012; Van Hout, 2014). Young people are about twice as likely to use an NPS in their lifetime than adults (Figure 2-15). According to the population surveys, the proportion of adults using NPS in their lifetime is in the region of 2-3 %, while for young people the proportion appears to be in the region of 4-6 %. In the wider context of drug use in 2017/18, this places NPS prevalence lower than most traditional illicit drugs with the exception of heroin (Figure 2-16).

Figures for last year use also indicate NPS use is concentrated in young populations, with the likelihood of young people using NPS in the last year more than double that of adults. This patterning of prevalence where lifetime use by young people significantly exceeds that of adults reflects the relatively new status of NPS. Although young people are typically more active drug users, lifetime rates between adults and young people for well-established drugs such as cannabis tend to be more equivalent as reports of use by adults continue to reflect the drug-taking of their youth (lifetime prevalence for cannabis age 16-24 = 31% and 16-59 = 30%).

The effect of age on NPS use is probably greater than that indicated by the CSEW. The CSEW data for adults includes that of young people, so reliable comparisons by age cannot be made using data from this survey. However, the 2014/15 survey by the NACDA does provide a more detailed breakdown of use associated with age groups. This shows that lifetime use of NPS by young people aged 15-24 is notably higher than adults aged 45 and over, although use actually peaks in the 25-34 age range with relatively high rates also apparent for 35-44 year-olds. This pattern of use by age group, with lifetime use greater for those born in the 1970s and ’80s is consistent with many popular recreational drugs including cannabis, ecstasy, amphetamines and hallucinogens (NACDA, 2016).

Further evidence for the prevalence of use by young people is also available from the Flash Eurobarometer (FEB: European Commission, 2011; 2014), a youth attitudes survey that regularly gathers data from EU member states. Until 2015 the FEB was the primary source of prevalence data on legal highs and is extensively relied upon in Government reports and fact sheets. The FEB found that 10% of young people from their UK sample reported lifetime use of legal highs, the highest proportion found in the 28 European countries surveyed. While lifetime use of legal highs in the UK remained stable for the 3 years between the two FEB surveys, overall, prevalence within Europe was seen to rise from 5% to 8%.

At 10%, prevalence of lifetime use reported in FEB is considerably higher than the 3 - 6% range reported by the CSEW and NACDA. This may reflect differences in sampling methods and inclusion criteria for what was included as a legal high. While the CSEW is a face-to-face survey, the Flash Eurobarometer is a telephone survey. As the UK figures in the FEB are based on a smaller sample than the CSEW, the British crime survey figures are generally considered the more reliable of the two surveys (HM Government, 2018).

Figure 2-17. Lifetime use and last year use of NPS for young people aged 16-24 in England and Wales in 2017/18

**Source: CSEW (2018)**

Lifetime use and last year use of NPS by young people aged 16-24 in the four years surveyed by the CSEW are shown in Figure 2-17. For both genders, in all years, lifetime use was reported to be higher than last year use, a pattern typical for use of psychoactive substances due to the cumulative nature of lifetime measures. Lifetime use is significantly higher in young men than young women, and as with the older age group, young men are about twice as likely to use NPS in their lifetime than women. The concentration of NPS use amongst young men is consistent with consumption patterns for recreational drugs in general (e.g. CSEW, 2017; EMCDDA, 2018; NACDA, 2014). Last year use of NPS also shows similar gender differences, although they become less pronounced over time.

Figure **2-18**. Percentage of young people in England and Wales reporting last year use of NPS

### Trends in use over time

The reports of last year use in the four years available from the CSEW potentially offer the best insight into changes in the use of legal highs over time. Based on this evidence, the prevalence of legal highs use among young people in England and Wales has more than halved over the four years surveyed (54%: see Figure 2-18). This reduction is explained by a significant drop in use by young people between 2015/16 and 2016/17 during which time the PS Act was introduced. In the year before the introduction of the PS Act, 2.6% of young people in the sample reported using legal highs, which reduced to 1.2% in the year after the ban. This equates to a drop from around 162,000 young people using NPS in England and Wales in 2015/16 to around 77,000 in 2016/17. This reduction was mainly driven by young men, whose reported use of NPS dropped by nearly three quarters between 2014/15 and 2017/18 (CSEW, 2018).

In the Government review of the PS Act, this apparent decline in use of NPS is attributed to the implementation of the PS Act and used as evidence that the aims of the PS Act have been achieved (HM Government, 2018). The primary aim of the Act was to prevent the open sales of NPS, which does appear to have been largely achieved by eliminating over the counter sales. The Government also claims there is an overall reduction in NPS use, based on the CSEW survey data and attributes it to the reduction in the availability of NPS on the high street and the deterrent effect of the change in legal status brought about by the implementation of the Act.

However, there is good reason to question whether the apparent drop in NPS use shown by the CSEW is an accurate reflection of actual changes in use, or the result of other factors. For example, looking at young men’s responses to the question on lifetime use of NPS there is a one-third drop in the proportion of respondents who report using NPS at any point in their lifetime between the surveys in 2015/16 and 2016/17 when the ban came into force (see Figure 2-18). With an age spread of 16-24 (8 age cohorts), assuming a reliably representative sample from year to year, 87.5% of the population should be notionally the same from one year to the next. It is noted that lifetime use can only remain the same or increase for each age cohort. Even if use of NPS is skewed toward the older ages within the range, it seems improbable that changing 12.5% of the population sample as a result of age range cut-offs between years could cause the overall lifetime average of the whole sample to drop by as much as 33% in a single year.

This anomaly suggests the influence of other factors, of which three possibilities can be identified. The first is that the change in legal status conferred by the Act may have reduced respondents’ willingness to reveal the use of what have now become illicit substances. Secondly, young people’s interpretation of the survey questions, which continued to use the term ‘legal highs’ even in the 2016/17 and 2017/18 surveys (when the majority of NPS were illegal to supply but legal to use) may have led to confusion about which substances were being addressed by the question. The third, explanation is related to changes in the nature of the questions asked between the surveys used in 2015/16 and 2016/17. In the two years prior to the ban, 2014/15 and 2015/16, the surveys did not ask specifically about NOS and NOS may, therefore, have been assumed by respondents to be within the scope of the question about legal highs, whereas in 2016/17 and 2017/18 use of NOS was specifically requested in a separate question, giving the impression that legal highs did not include NOS.

Given that prevalence of NOS use is considerably higher than that reported for NPS (last year use of NOS by young men was reported to be 11% in 2016/17 whereas NPS was reported as 1.6%). Therefore, any confusion about whether NOS is included in the category of legal highs could confound survey results for NPS. The risk is that the scale of the reported reduction in NPS use post-ban may be overstated.

### NPS use with the context of illicit drug use

Use of NPS is set against a backdrop of long-term declines in drug use by young people in the general population. Since the CSEW first included questions on drug use in 1996 lifetime prevalence of drug use by young people has reduced from 48% to 35% (CSEW, 2018). This is in contrast with significant rises for adults aged 16-59, where prevalence in lifetime use of any drug has increased from 30% to 35%. The differing trajectories of older and younger adults reflect an ageing cohort of people born in the 1970s and ’80s in which lifetime prevalence of drug use peaks. More recently, during the four years from 2014/15 to 2017/18 prevalence of drug use by those aged 16-59 shows stable prevalence for use of cannabis, but a significant increase in the use of Class A drugs (cocaine, hallucinogens, ecstasy and some amphetamines). For young people aged 16-24, reported use of any drug has appeared to remain stable over the last four years of available data.

Figure 2-19. Last year use of selected psychoactive substances for young people in England and Wales in 2017/18

Viewing the change in use of NPS alongside trends in use for other recreational psychoactive substances indicates that use of NPS may have been displaced onto other substances (Figure 2-19). Following the introduction of the PS Act, last year prevalences of cannabis, psychedelics, cocaine, ketamine, and amphetamines have increased. For some, increases are modest (cannabis 6% and psychedelics 7%) while others are more substantial (Ecstasy 13%, Ketamine 23%, amphetamines 36% and cocaine 36%). Although the CSEW is unable to capture individual-level displacement between substances and therefore changes between substances cannot be causally linked, qualitative studies point towards displacement from NPS onto other drugs (Addaction, 2017; DrugWise, 2017; Ralphs, Gray & Norton, 2017). According to drug workers and users reported in the DrugWise review of the UK drugs scene, many users of NPS have reverted to the same substances they were using before NPS, however, they also note that some young users of NPS without experience of traditional illicit drugs are now initiating use of traditional stimulants and opioids (DrugWise, 2017).

**Source: CSEW (2018)**

### Use of NPS in subgroups

Evidence indicates that use of NPS may be relatively high in specific subgroups, including hard to reach groups systematically underrepresented in household surveys. While young people are often presented as an at-risk group alongside other subgroups thought to be at-risk, these groupings are not mutually exclusive as the other at-risk groups include a proportion of young people. Drawing on the conclusions of other authors and evidence from studies, several different types of NPS user emerge within the literature in addition to non-users contemplating the use of NPS, and suspected hidden populations about which little data exists. The use of NPS fits broadly into three categories: naïve use, recreational use and dependent use. Users associated with each of these types of use can be expected to interact differently with NPS and potentially have different motives and reasons for use. If we are to inform effective interventions it is vital to understand how reasons for use may converge or differ, and, most importantly, whether approaches that target one group are likely to inadvertently have a negative impact on another group. For example, politicians and researchers often express concern that exposing young people with limited experience of drugs to harm-reduction information aimed at experienced drug users may inadvertently encourage drug use (NICE, 2007).

### Naïve use

Naïve use characterises NPS users without a history of illicit drug use. Even if the numbers of drug-naïve NPS users are relatively small, such users are likely to be particularly vulnerable to acute drug harms (NAW, 2015). Evidence is unclear as to whether the NPS market has attracted new drug-naïve populations’, but several sources indicate that NPS may be a particular problem with very young users (Barnard et al., YPBAS, 2010; Dargan, et. al., 2010; HSCIC, 2014; Winstock et. al., 2010) and people not typically associated with drug use (NAW, 2015). According to the young people taking part in the National Assembly of Wales’ focus group ‘members of their peer group who they would not normally associate with drug-taking were being drawn to NPS’ and they consistently emphasised how little is known about the profile of those using NPS while many witnesses alluded to ‘hidden populations’ of users throughout the course of the inquiry (National Assembly of Wales, 2015). The difficulty of identifying and accessing hidden populations of NPS users is acknowledged in a number of studies (CSEW, 2011; Kellerher et al., 2011; NAW, 2015), but until a substance increases in popularity and emerges into established drug use networks research may have little to go on.

Studies have reported users as young as 10 and 11 years old but noted that use at these ages does not appear to be common (e.g., Barnard et al., 2014; YPBAS, 2010; HSCIC, 2014). Some authors have suggested there may be a link between Headshops and young users (Measham, 2010; NAW, 2015;) and the Flash Eurobarometer (2014) found that it was the youngest users who were most likely to buy NPS from a shop.

Although no studies have focused on very young users in-depth, several schools surveyed in the UK have included questions on NPS use prior to the introduction of the PS Act. Prevalence of lifetime use reported in these studies range from 0% to 5%. The lowest rates were reported for younger children aged 11 and 13, while higher rates of use were reported for older children aged 15 and 16 (see Table 2-2). With prevalence rates for older children around 4-5%, they are a similar order of magnitude to estimates of prevalence for young people sampled by the CSEW at a similar time (6%). By this age children may also be using illicit drugs, but it remains unknown whether NPS encourages earlier initiation of traditional drug use.

**Table 2-2: Prevalence rates for use of NPS by school pupils**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Authors** | **Year** | **Co.** | **N** | **Age** | **Prevalence** |
| YPBAS | 2010 | NI | 3,546 | 11-16 | 3.8% |
| SALSUS | 2013 | SCT | 33,685 | 13  15 | 1%  4% |
| HSCIC | 2014 | GB | 6,173 | 11  16 | 0.5%  5% |
| YPBAS | 2014 | NI | 3,092 | 11-16 | 1.9% |
| SALSUS | 2015 | SCT | 25,304 | 13  15 | 0%  5% |

Some evidence does point toward a sub-group of young users with substantially higher rates of use, and there is concern that these underage users are being missed by general survey methods. For instance, Welsh school teachers interviewed by the National Assembly of Wales estimated that around 80% of their pupils aged 12-14 were taking an NPS called NRG (NAW, 2015). The reasons for such high variability in findings are unclear. It may reflect regional or socioeconomic differences, type of educational establishment or differences in survey methods or definitions of NPS.

### Recreational use

This group of users is believed to comprise young adults and adolescents who tend to indulge on weekends, at parties, festivals and in clubs (Kellejer et al., 2011; NAW, 2015) but do not identify themselves with a drug user identity (e.g. Barnard et al., 2014). Recreational use may be infrequent or frequent, and limited to NPS (NAW, 2015; SANDS Cymru, 2015) or take place alongside traditional drugs (Measham, 2010; NAW, 2015; SANDS Cymru, 2015; Winstock et. al., 2010). It is thought that recreational use is widespread but is unreported as users tend not to come into contact with health services as their drug use does not appear to be leading to serious adverse effects (Kelleher et al., 2011), or they are unlikely to seek help due to their desire not to be associated with a drug user identity (Barnard et al., 2014).

### Occasional users

For some recreational users’ legal status may be important, and these users have been described as individuals who were not really involved in the substance misuse scene but did not want to break the law (NAW, 2015; SANDS Cymru, 2015). For these recreational users’ legal highs might be seen as more akin to other legally available psychoactive substances such as alcohol. Certainly, the link between NPS use and alcohol use has been consistently found (Figure 2-20), with concurrent use of alcohol and NPS reported between 25%, and 100% in several studies (Barnard et al., 2014; Barrett et al., 2013; Besli et al., 2015; Corrazza et al., 2014; McElrath, 2011).

Figure 2-20. Prevalence of last year use of NPS by use of frequency of alcohol consumption

**Source: CSEW (2018)**

Prior to the ban, frequent drinkers (3+days a week in the last month) were found by the CSEW to have some of the highest levels of last year use of NPS (7.8% in 2014/15). However, after implementation of the Act prevalence of NPS use for frequent drinkers appeared to drop down to the level of infrequent drinkers, close to the rate for an average young person (1.2%). This suggests that recreational drinkers may have been most heavily impacted by the ban. Substantial drops were also reported for young people who frequently attended bars and pubs (9+ times in the last month) with prevalence of NPS use dropping from a pre-ban level of 7.5% to 2.3% post-ban.

### Students

In a survey of students including an older age range (13-30, median age 18) the proportion of users in the sample was found to be considerably higher than the general population and school-based surveys with the prevalence of lifetime use of NPS reported as over 30% within the sample (Corazza et al., 2014). Although to some extent this higher rate may be attributable to selection bias resulting from the self-nominating sampling method, it should be noted that the authors did attempt to minimise sampling bias in both the content and context of their study advertisements. This increase in prevalence may be attributable to the transition from school to higher education where contact with NPS appears to rise dramatically. While only 6% - 8% of schoolchildren reported being offered legal highs (HSCIC, 2014; SALSUS, 2013;) a survey of undergraduates by the Angelus Foundation found 36% of freshers reported being offered NPS, and as many as 61% noted that their friends had used legal highs (NAW, 2015).

### **Existing drug users/clubbers**

Evidence indicates that existing recreational drug users make up a large proportion of NPS users (Barnard et al., 2014; Bonar, 2014; Carhart-Harris et al., 2011; Freeman et al., 2012; Kelleher et al., 2011; Schifano et al., 2012; Van Hout, 2014). This group is characterised by drug use linked to the night-life settings such as clubs (EMCDDA, 2014: Measham, 2010; Winstock et al., 2010,) and the chemsex scene (EMCDDA, 2014; Measham, 2010; Winstock et al., 2010). They are thought to be more informed about drug use (Van Hout, 2014) and more likely to engage in behaviours intended to minimise harm (Kelleher et al., 2011). Several types of existing recreational drug users are thought to be taking NPS in addition to other drugs; clubbers, men who have sex with men (MSM), LBGT groups (Barnard et al., 2014) and psychonauts.

NPS use by clubbers is mostly related to stimulant type drugs, usually part of the family of synthetic cathinones (Winstock et. al., 2010). Although this group have added NPS to their usual repertoire of drugs (NAW, 2015) evidence shows that for many drug users’ illicit drugs are their preferred choice (Winstock et. al., 2010) but NPS offer viable alternatives when the purity or availability of illicit substances are affected by wider drug market factors (Measham, 2010). In 2017/18 the CSEW found that 88% of young people who had used an NPS in the last year had also used an illicit drug, a proportion similar to that prior to the ban (84%). While the CSEW reported that post-ban, 5% of illicit drug users also used NPS, a drop from 12% prior to the ban, a study of drug use in Manchester found as many as 79% of illicit drug users surveyed had also tried an NPS, the definition of which also included mephedrone and ketamine (Ralphs, Gray & Norton, 2017).

Psychonaut is the name given to NPS users who actively experiment with psychoactive drugs to explore the effects of different substances (NAW, 2015). They show a pattern of very deliberate behaviour, commonly measuring out exact quantities, carefully staging doses and keeping records of their experiences. There is some evidence psychonauts may be somewhat older than other NPS users and are more likely to be male (Van Hout, 2014).

The main concern for populations of existing drug users is concurrent use of NPS with traditional drugs, as mixing NPS with other drugs, known as polydrug use, increases the probability of harm (NAW, 2015). Studies of existing drug users have found high rates of concurrent use, with prevalence of polydrug use involving NPS ranging from 13% to 38% (Corazza et. al., 2011; Corazza et.al., 2014).

Figure 2-21. Prevalence of last year use of NPS by use of frequency of visits to nightclubs in the last month

**Source: CSEW (2018)**

It is thought that this group of users are least likely to be affected by the introduction of the PS Act as they have little concern for legal status and the continued availability of NPS on the black market means access to NPS has not been prevented (DrugWise, 2017, Ralphs, Gray & Norton, 2017). Evidence from the CSEW confirms that, unlike recreational drinkers, prevalence of NPS use in those who most frequently attend nightclubs has remained comparatively high since the ban (2014/15 = 5.5% and 2017/18 = 5.5%: see Figure 2-21).

### Problem use and dependency

Problem users are people who develop a dependence on substances, often using them frequently and in high doses. Problem drug use is largely associated with intravenous injection of substances, typically of opioids, cocaine or amphetamines (EMCDDA, 2014). Problem drug users are mostly polydrug users and prevalence figures are much higher in urban areas and among marginalised groups such as rough sleepers and the homeless (EMCDDA, 2018; ONS, 2017) The extent to which users of NPS become dependent is not fully understood, but evidence suggests that a notable proportion of regular users may develop symptoms of dependence (Every-Palmer, 2011; Murphy et. al., 2010).

Problem drug users are thought to be an especially vulnerable group of NPS users as the harms associated with injecting drugs and polydrug use are considerably higher than other methods of consumption (EMCDDA, 2012; 2018; Kellerher et al., 2011). It has been noted that for this group of users NPS are not offering an alternative to traditional drugs but are being used as additional substances (NAW, 2015), particularly in relation to heroin, where opioid type NPS are often being mixed directly with heroin as well as being used between doses (Shapiro & Daly, 2017). The uptake of NPS use among problem users has been noted in several studies and concerns have been raised about the impact of NPS on drug harms in drug-dependent populations (Addaction, 2017; Drugwise, 2017; EMCDDA, 2018; HM Government, 2018; Ralphs, Gray & Norton, 2017). Although there is a paucity of research examining problem users’ use of NPS, prevalence for NPS use among problem drug user populations is estimated to be about 38% (Bonar, Ashrafioun, Ilgen 2014) and for homeless street user populations about 31% (Irving, 2017). With rough sleeping and homelessness increasing significantly since 2010 (rough sleeping by 169% and homelessness by 48%: Joseph Rowntree Foundation, 2018) it can be expected that the number of vulnerable users of NPS will also have increased although these rises will disproportionally affect older cohorts as people over the age of 25 are ten times more likely to become homeless than young people (ONS, 2018). Evidence has shown that NPS are particularly problematic for vulnerable street users (Shapiro & Daly, 2017) with a survey of entrants to substance treatment centres finding that 25% used NPS as a primary substance (Gittins, Guirguis, Schifano, Maidment, 2018). A study by Murphy et. al., (2010) found rates of NPS use amongst users of drug services to be as high as 70%, although not necessarily the primary reason for receiving treatment. NPS use in populations of problem drug users is mostly related to use of synthetic cannabinoids (Bonar, Ashrafioun, & Ilgen 2014) due to the high addiction potential of this group of drugs. Synthetic cannabinoid use in the context of problem drug use appears to have a close relationship with heroin use, with many users originally taking up synthetic cannabis as a cheap way to manage heroin withdrawal during the heroin drought of 2010.

The introduction of the PS Act is believed to have negatively impacted dependent users most heavily. Black market dealers have been reported as targeting the most vulnerable users, selling surplus headshop stock at inflated prices. Increasingly, however, shop-bought stock is being replaced with products manufactured by black-market suppliers with higher levels of potency and more inconsistent ingredients (DrugWise, 2017). The variability of strength and ingredients make accurate dosing harder and harmful outcomes more likely. Although qualitative studies indicate that many dependent users express a desire to stop using synthetic cannabis, the high addiction potential of some synthetic cannabinoids makes stopping difficult. Worryingly, several reports reveal that some users are reverting back to or taking up heroin to self-medicate from the effects of synthetic cannabis (Addaction, 2017; Ralphs, Gray & Norton, 2017; Shapiro & Daly, 2017). In addition to the problems associated with synthetic cannabis use, there are also increasing reports of the emergence of synthetic opioids with particularly high harm potentials which are thought to account for a significant proportion of NPS related deaths (EMCDDA, 2018).

### Prisoners

A growing area of concern is the link between NPS use and inmate populations where prevalence is found to be considerably higher than the general population with estimates of use ranging from about 18% to 50% of inmate populations (EMCDDA, 2018; Scottish Prisoner Survey, 2017; User Voice, 2016). In contrast to decreasing rates of use in the general population, and decreasing rates of overall drug use in prisons, use of NPS by inmates has shown an increase between 2015 and 2017, and as a result, more prisoners are using NPS for the first time after entering prison (HM Government, 2018; Scottish Prisoner Survey, 2017). Synthetic cannabis has also been found to be the main NPS used in prisons (Scottish Prisoner Survey, 2017; User Voice, 2016).

### **Summary of prevalence**

Within the available literature on NPS, estimates of the prevalence of NPS use show huge variation, ranging from 0.5% to 87% across the full set of samples found. The highest rates of use were seen in populations of existing drug users and people using drugs services of whom between about 40-90% of people within the samples had used NPS. Studies examining these groups tended to use non-representative samples and self-nominating recruitment measures so the high prevalence in these samples is not surprising. Nevertheless, surveys of recreational drug users suggest that a significant majority of users of traditional drugs have experimented with NPS and the correlation between use of NPS and classic recreational drugs appears to be high, and potentially relatively unaffected by the ban. In dependent drug user populations prevalence of NPS use also appears to be high, though the impact of the ban on prevalence remains unclear, with reports of continued use as well as switching back to traditional drugs.

In contrast, estimates for the prevalence of NPS use in the general population are significantly lower, with about 4-6% of young people in England and Wales estimated to have tired using NPS. Relative to other commonly used recreational drugs, NPS use can be said to be low. This has led to some commentators warn against exaggerating the significance of NPS (e.g., ACMD, 2011; Shapiro, 2011).

Although the large samples and random sampling methods of the general population surveys mean they are likely to be more robust than the stand-alone studies based on self-nominating methods and small samples, general population surveys are recognised as being relatively ineffective at accessing hard to reach groups such as marginalised populations and alternative subcultures (BCS, 2011). In only collecting data obtained from residential homes data from other types of residence are systematically omitted. For example, data from multiple occupancy buildings such as student accommodation, homes for children in care, treatment centres, youth justice centres, and those who are homeless or without a registered address are not routinely captured. Consequently, the non-representative studies offer insights into some of the very populations the general surveys will have missed. With prevalence of NPS use considerably higher in some hard to reach populations, it seems very likely that use of NPS in household surveys is significantly underreported. Even within the general residential population, there is likely to be biased against the inclusion of problematic drug users since their lives are often more chaotic and they may not be easily available at home or the phone (BCS, 2011). In addition, drug-taking behaviour is a sensitive issue, and people may be less willing to report drug use than other health behaviours.

Prior to the ban, there was generally a consensus within the literature that the use of NPS appeared to be widespread and increasing (e.g. NAW, 2015), but recent trend data suggests use of NPS may be decreasing. Although there are many encouraging signs there are also reasons that jumping to conclusions about the success of the PS Act might be premature. With only a single year of data post-implementation, there is insufficient data to draw any firm conclusions about the impact of the ban on user prevalence. Even the four years of annual usage data available for NPS is short relative to drug market fluctuations, and so the full impact of the ban is likely to remain unclear for several more years. In addition, the variability of methodology, terminology, drug classification and inclusion criteria used in surveys and studies makes comparisons between studies and time periods problematic when trying to examine changes over time.

Nevertheless, overall, the findings from the studies and reports reviewed suggest that some users may be moving away from using NPS, but in different ways for different users. While some occasional recreational users of NPS might be stopping use, some users appear to be reverting to use of traditional drugs. What is not known, however, is to what extent the easy availability of NPS has introduced people who might not otherwise have used drugs to new habits and behaviours. Understanding the different types of users, their different perceptions of NPS and their motivations for using and not using them is vital for intervention development. However, despite clear evidence of several distinct user types within the literature, there remains a strong tendency within key reports on NPS, including Government reports, to assume NPS use is predominantly confined to existing users of traditional illicit drugs (ACMD, 2011; HM Government, 2014; 2018). If, however, various NPS users differ in important ways to users of traditional drugs it becomes a priority to understand the attitudes, knowledge and behaviours of people using NPS so that effective interventions can be developed (NAW, 2015).

## Harms associated with NPS

Pressure for action on legal highs arose in response to concerns about their harm potential, largely based on sharp rises reported in NPS related mortality. However, assessing the harms associated with these drugs is immensely difficult, in large part due to the challenges of identification and detection. Data on NPS related harms is typically gathered via information on self-reported symptoms, clinical presentations or identification at post-mortem. However, for harms to be linked with a drug it first must be identifiable, something which generally depends on a substance being well-established within the drug market and having drug testing available. The pace and scale of novel drugs emerging onto the market presents an extremely challenging situation for the detection of NPS by medical professionals, while the absence of accurate information on products and the regular substitution of chemicals makes recognition of individual substances highly unreliable. Nevertheless, it is widely acknowledged that many NPS are potentially harmful (e.g. ACMD, 2011; Barnard et al., 2014; EMCDDA, 2014) and a patchwork of evidence from mortality figures, health centre admissions and qualitative studies is mounting to reveal the dangers of NPS use.

### **Unknown harms**

In contrast to traditional drugs of abuse such as cannabis, cocaine, ecstasy and heroin, the harm potential of the majority of NPS is largely unknown. Although large numbers of NPS have been reported to the EU Early Warning System it is impossible to know how many remain undetected. With insufficient samples obtained through police seizures and border controls, substances are not profiled for detection and may continue to pass unnoticed in drug tests. Even for NPS which are discovered, inclusion in routine tests remains dependent on establishing clear links with detrimental effects and evidence of frequent use. In 2014, when 101 new substances were identified, European risk assessments were carried out on six (EMCDDA, 2015). Although some predictions of harm potential could be based on the chemical structure of new compounds, even small changes in chemical structure can result in notably different physiological and psychological effects (ACMD, 2011).

In many instances, the first sign of the emergence of a new psychoactive substance is when users present at medical centres with distressing symptoms. Even then, it is extremely difficult to link drug harms with specific substances prior to the drugs being recognised, well established and in frequent use. To compound the issue further, hospital admissions correlate highly with polydrug use and adverse reactions may commonly be attributed to better-known substances if blood tests return a positive result. Even when NPS use is admitted or suspected, users may be unaware of what they have taken, and if a brand name is identified, lack of consistency in brand ingredients may prevent accurate identification of harmful substances.

### Harmful effects

Numerous physical, psychological and social harms associated with NPS use have been identified through self-report and survey studies. References to harms associated with NPS use from a selection of studies have been collated and are presented in table 2-3.

The most common negative effects associated with use of NPS were reported as headaches, dizziness, nausea/vomiting, palpitations, fatigue, anxiety and depression. These of symptoms are largely consistent with the acute effects of commonly used recreational drugs, including cannabis, stimulants, hallucinogens, dissociatives depressants and opioids (EMCDDA, 2012). Little is known about chronic harms related to long-term use of NPS (EMCDDA, 2017).

Self-report and case-study methods have provided a useful way to gather growing evidence about the harms of NPS use, but due to methodological limitations the specific substances consumed are rarely verified with chemical testing, so evidence remains suggestive rather than definitive. However, with current drug legislation in the UK rendering laboratory testing of recreational drugs largely unfeasible, the evidence base for the harmful effects of NPS use remains heavily reliant on such self-report and observational studies.

**Table 2-3. Range of NPS harms identified through self-report and case studies of users**

|  |  |  |
| --- | --- | --- |
| **Physical harms** |  |  |
|  | Headaches | [1][3][5][14][16][17] |
|  | Faintness, dizziness | [1][2][10][14][15][16][20] |
|  | Nausea, vomiting | [1][2][3][5][14][16][17][21] |
|  | Sore bleeding nose, nose swelling/burning | [1][2][11][15][20] |
|  | Skin damage, infections, abscesses and ulcers | [2][10] |
|  | Chest pain, breathing difficulties | [10][14][15] |
|  | Palpitations, racing heart | [1][2][5][6][7][10][16][17][20] |
|  | Shaking body, muscle twitching | [1][7][20] |
|  | Teeth grinding, jaw clenching | [1][2][20] |
|  | Cramps, aches and pains | [1][2][3] |
|  | Hot flushes, sweating | [2][5][16][20][21] |
|  | Numbness | [5][11][17] |
|  | Hypotension | [1][21] |
|  | Changes in appetite, weight loss | [1][2][7][11] |
|  | Dehydration | [1][2][10][14] |
|  | Fatigue, tiredness | [1][2][8][13][14][17] |
|  | Insomnia | [1][10][11][14][20] |
|  | Restlessness | [7][14] |
|  | Addiction | [1][5][6][20][22] |
|  | Offensive body smells | [11] |
|  | Poor motor coordination | [7][16] |
|  | Slurred speech | [15][16] |
|  | Impaired vision | [1][2][7][8][11][14][21] |
|  | Hallucinations | [2][3][8][10][17][21] |
| **Physical harms continued** | |  |
|  | Auditory distortions | [7][8] |
|  | Altered sex drive | [1][5][17][22] |
| **Psychological harms** | |  |
|  | Paranoia, panic, anxiety | [1][3][5][7][9][10][11][14][15][16][17][18][21] |
|  | Psychosis | [9][10][16][18] |
|  | Confusion, disorientation | [2][15][16][21] |
|  | Aggression, irritability | [7][14][17][21] |
|  | Impaired memory | [1][7][10][14][20] |
|  | Depression | [1][7][10][13][14][16][17][18] |
|  | Suicidal behaviour | [10][21] |
|  | Reduced inhibitions | [17] |
| **Social harms** |  |  |
|  | Homelessness | [22] |
|  | Unemployment | [22] |
|  | Poverty | [22] |
|  | Antisocial behaviour | [1][22] |

For sources see Appendix A.

## Admissions to hospital and drug treatment services

Hospital emergency data can provide an insight into acute drug-related harms. Hospital admissions data is published annually by the ONS based on NHS reports on the clinical coding of patient admissions undertaken by hospitals. Hospital admissions data is therefore dependent on standardised hospital codes which currently do not offer provision for recording use of NPS. Consequently, information on hospital admissions for NPS is thought to be dispersed across clinical coding categories for illicit drugs based on similarity to the substances they emulate (NHS, 2018). As a result, the potential impact of NPS on hospital admissions can only be inferred at the level of overall admissions for incidents related to drug misuse.

Hospital admissions attributed to drugs misuse are based on diagnoses of poisoning by illicit drugs and drug-related mental health or behavioural disorders. In general, annual admissions for both poisonings and mental health/behavioural disorders have increased steadily over the past decade until a drop in admissions in 2016/17. Admissions for drug-related mental health and behavioural disorders decreased by 12% and admissions for drug poisoning dropped by 7%, changes that the Government review of the PS Act implies may be attributed to the implementation of the Act. Although it is plausible that a reduction in NPS use may have contributed to these falls it is not possible to assess the extent of any impact changes in NPS use have had due to the inability to isolate NPS related data. For example, most drug poisonings are recorded as a result of opioid use (65% NHS, 2018) and a significant drop in the purity of the most commonly used opioid in 2016 may also be contributing to falls in admissions as the likelihood of overdose decreases (EDCDDA, 218).

Other evidence in support of a reduction in NPS related harms following the Act comes from data on the numbers of young people admitted into treatment for drug and alcohol-related issues. Of 268, 390 adults in contact with treatment services in 2017/18, 7% were aged 18-24 (15,740). Of the total number of people in treatment, less than 1% cited problematic use of NPS (2,528). Although the most commonly used substance by adults in treatment was opiates (53%) only 2% of those aged 18-24 cited problematic use of opioids. For adults aged 18-24, the most common drugs used were cannabis (54%) and cocaine (29%). Overall, the numbers of people entering treatment has fallen during the last ten years, with a reduction of 7% between 2015/16 and 2017/18. The number of young people aged 18-24 entering treatment for the first time has fallen more rapidly with 21% fewer young people entering treatment in 2017/18 than in 2015/16. This reduction reflects the decreasing prevalence of drug use by young people (PHE, 2018).

The number of people in treatment for NPS has also reduced at a rate exceeding the overall trend, with a 24% decline between 20015/16 and 2017/18. New presentations for adults citing NPS use have decreased more sharply, reducing by 40% since peaking in 2015/16 following four years of sharp rises (PHE, 2018). This reduction is mainly related to a drop in reported use of synthetic cannabinoids (see Figure 2-22) although stimulant type NPS reduced by the greatest proportion (79%). While the 18-24 age group shows the highest proportion of new treatment presentations for NPS in 2017/18 (17% of total new entrants) it has also seen the greatest reduction since 2015/16 (67% reduction).

Figure 2-22. Number of new presentations for adults in treatment

Although the reductions in NPS use clearly show a decline in the use of NPS by those entering drug treatment services, it should be noted that NPS use may not be the primary problem substance; as people entering treatment typically cite the use of multiple substances (PHE, 2018). In addition, treatment admissions data may not offer an accurate reflection of harms associated with drug use as they are also influenced by factors which affect service provision, such as the budget cuts and changes to admission criteria of recent years (ACMD, 2016). Also, there is the possibility that changes to the legal status of NPS might result in a decreased willingness of people to admit use, particularly those people entering treatment for problematic use of alcohol.

### Mortality data

Relied on heavily in reports and papers, mortality rates linked to NPS use are a key source of data used to illustrate the dangers of NPS use. Office of National Statistics figures report 61 drug-poisoning deaths involving NPS use in England and Wales during 2017.

Figure 2-23. Number of deaths in England and Wales where an NPS was included on the death certificate

Mortality figures linked to NPS use are described as low (ACMD, 2011; NAW, 2015; ONS 2015), but sharp increases in death rates linked to NPS during the period 2010 to 2016 have been the cause great concern (HM Government, 2011; 2015). For the mortality data presented in Figure 2-23, deaths were associated with NPS use when the underlying cause of death was determined to be drug-related and one or more NPS were mentioned on the death certificate.

The first drug-related death to mention NPS on the death certificate was recorded in 1995, but mortality rates remained extremely low until rapid increases around 2007/8, with the sharpest rises in the number of deaths especially noticeable between 2010 and 2016. In the final year of available data, the rise in deaths not only appears to have stopped but reversed, showing a substantial drop in the number of deaths linked to NPS in 2016-2017. (See Table 2-4). In 2016 in England and Wales, 123 deaths were linked with NPS at post-mortem, but by 2017 the number of deaths had dropped to 61, a percentage decrease of just over 50%. At 68%, the decrease in deaths for those under 30 is proportionally greater than those over aged over 30 (41%). The decrease in the number of deaths following implementation of the ban in 2016 is presented by the Government review of the PS Act as an indication that the aims of the act have mainly been achieved. However, with the observed downward trend based on only a single year of data, drawing any firm conclusions would be premature.

**Table 2-4. Drug-related deaths associated with use of NPS**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Year** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** |
| NPS | 9 | 25 | 26 | 22 | 31 | 55 | 63 | 82 | 114 | 123 | 61 |
| Aged 30+ | 5 | 9 | 14 | 12 | 17 | 36 | 33 | 51 | 71 | 82 | 48 |
| Under 30 | 4 | 16 | 12 | 10 | 14 | 19 | 30 | 31 | 43 | 41 | 13 |

Source: ONS (2017)

The drop in deaths associated with NPS is encouraging, and it seems plausible that changes resulting from the implementation of the Act are being reflected in the mortality figures. However, it is probable that the extent of the decrease is currently overrepresented in the available data due to delays in the registration of deaths. Typically, drug-related deaths take around 160 days to be registered as a result of the time it takes for coroner’s investigations to be carried out, which can take months or even years (ONS, 2018). Consequently, the most recent year of mortality data for drug poisoning is routinely underestimated, and the full extent of the impact of the ban cannot be established at this time and any forecasts will be unreliable. It was for this reason that commentators claimed NPS related deaths were stabilising in 2013, 2014 and 2015 when in retrospect it has become clear that they were continuing to rise rapidly (ONS, 2014; ONS, 2015). By the same token, however, time lags for post-mortem reports may also obscure the full extent of recent decreases in deaths.

Whether or not rising death rates associated with NPS in recent years continue, the sharp increase in mortality linked to NPS over the last decade has attracted a great deal of attention, with numerous sources expressing alarm at increases of as much as 103% within the period 2011 to 2013, a figure commonly relied upon in key reports urging action on NPS (BBC, 2014; HM Government, 2014). While at the time absolute deaths remained low in comparison to overall deaths related to drug misuse (NPS were linked to 63 out of 1957 deaths), commentators were concerned that should deaths continue to increase at such a high rate this might prove to be only the tip of the iceberg (NAW, 2015). Although the steep increases in death rates are compelling and every preventable death deserves concern, establishing the scale and nature of the problem is important for the development of appropriate responses and preventing negligence and/or impulsive action. However, there are several reasons why mortality data must be treated with caution. Firstly, for drugs involving a low number of deaths, percentage increases can appear more striking than absolute increases. For example, the 103% increase in NPS related deaths between 2011 and 2013 highlighted in reports (ACDM, 2011; BBC, 2012) equates to an increase of 32 deaths, whereas the 28% increases in the same period for heroin/morphine equates to 169 additional deaths. Secondly, mortality data does not reflect incidents in which NPS were determined as the primary cause of death, but merely references to NPS coroners’ reports (ONS, 2016). Although mortality figures indicate the dangers of NPS use to some extent, they most directly represent factors which increase the likelihood of coroners reporting the presence of NPS at post mortem. Increasing awareness of NPS and improved drug testing methodology can be expected to account for some of the sharp increase in NPS inclusions as post mortem practices adapt to changes in the recreational drug scene. What remains unknown however, is the extent to which NPS have been, and continue to be, undetected or unreported at post mortem.

A further significant factor is polydrug use, as although an NPS may be listed on the death certificate, a different substance may well be the primary cause of death. Without data which can identify cases where NPS are suspected as the primary cause of death, it is difficult to isolate the harmful influence of NPS. As a result, what is presented as NPS-related data may reflect a variety of wider drug market and social factors that are not apparent when NPS figures are viewed in isolation. With polydrug use common among drug users in the UK, more than 50% of drug-related deaths typically involve multiple drugs (ONS, 2014), and around 30% also involve alcohol. Consequently, there is a reasonably high probability that deaths reported as NPS related are also linked with other substances. Unfortunately, in cases of multiple toxicity there is often no way to reliably determine which substance was the major cause of death. The data presented by the ONS should, therefore, be treated as largely correlational, and caution should be taken when making causal inferences.

### NPS and drug misuse deaths

Factors affecting drug harms can rarely be viewed in isolation as not only is polydrug use common, but the drugs market is dynamic and interactive, meaning that drug use and associated harms are best understood within the context of wider drug systems. Overall, deaths related to drug misuse have increased over the last 20 years, with particularly sharp increases over the previous five bringing deaths related to drug misuse to an all-time high of 2,596 in 2016 (Figure 2-24). Within this context, the sharp rises associated with NPS mortality can be seen to be part of a wider trend in drug-related deaths. Deaths attributed to different substances demonstrate some shared trends, such as a drop in deaths around 2011. This suggests that at a wider level the effects of individual substances are not independent but are in turn influenced by factors which impact overall drug-related mortality.

Figure 2-24. Number of drug-related deaths in England and Wales for selected substances

### Potency and mortality

The greatest influence on drug-related mortality is the potency of the substances consumed. Drugs are rarely sold with information about ingredients or potency, so dosing is usually a matter of trial and error (Kelleher et al., 2011). When the potency of a drug rises, users are more likely to exceed their intended dose and overdoses and incidents of acute harms and death become more common. Changes in drug potency are typically related to the frequency and scale of drug seizures which affect the supply chain. When there are significant seizures of drugs or compounds used in their manufacture, the availability of substances becomes reduced in what is sometimes described as a drought (Measham, 2010). To counteract reduced availability, sellers dilute psychoactive substances with a variety of cutting agents and the purity of the end product is reduced (Measham, 2010; Winstock, 2010). Reductions in purity are accompanied by a corresponding reduction in mortalities as users are less likely to overdose (Measham, 2010; ONS, 2014). To compensate for the reduction in potency users typically increase their dosing or migrate to using different substances (Measham, 2010; Winstock, 2010;). As the drug market recovers from the disruption to supply, purity levels rise; returning to, or exceeding pre-drought levels.

Figure 2-25. Cocaine purity in Europe: changes in percentage purity since 2006

% of 2006 level purity

Figure 2-26. Cocaine related mortality in England and Wales

Number of deaths

**Source: ONS (2017)**

**Source: EMCDDA (2018)**

Figure 2-27. Heroin purity in Europe: changes in percentage purity since 2006

Number of deaths

% of 2006 level purity

**Source: ONS (2017)**

**Source: EMCDDA (2018)**

Figure 2-28. Heroin related mortality in England and Wales

The most significant drug droughts to affect the illicit drug market in recent years are the cocaine drought of 2007-2010 and the heroin drought of 2009-2012 (EMCDDA, 2018). The impact of reductions in purity of cocaine and heroin may explain much of the variance in mortality data. Comparing variations in the purity of each substance with mortality data it is apparent that significant drops in purity have coincided with respective drops in mortality followed by sharp rises in deaths as purity returned to pre-drop levels (see Figures 2-25 through 2-28).

### Heroin use and NPS

Opiates, usually heroin, are associated with 87% of drug-related deaths in the UK, the majority of which occur in the context of polydrug use, typically alcohol, benzodiazepines, other opiates or crack cocaine (EMCDDA, 2018). Many cocaine-related deaths are thought to be users of crack cocaine also using heroin. Compared to the rest of Europe, the UK has a sizable population of problem drug users, with opiate-related deaths accounting for 34% of the European total. What is apparent, looking at the overall picture of drug-related mortality (Figure 26), is the disproportionate impact of heroin/morphine related deaths (mortality figures for heroin and morphine are combined as heroin breaks down into morphine and the two substances are therefore indistinguishable at post-mortem) (EMCDDA, 2014), as despite being drugs with very low prevalence rates (CSEW, 2018) the number of deaths involving heroin/morphine are substantially greater than any other drug about which drug misuse data is recorded. The influence of heroin is thought to be so great that the upward trend in total drug deaths in the previous few years is thought to be driven by sharp increases in heroin-related deaths, particularly in men (ONS, 2018). Without more refined multiple toxicity data there is no evidence to discount the possibility that changes in deaths involving NPS reflect changes in heroin-related deaths. However, there is also the possibility that the dangers of mixing heroin use with the use of NPS, is reflected in drug-related mortalities for both substances.

Although mortality rate increases associated with heroin are partially explained through an ageing cohort of users; increases in availability and purity, alongside discrepancies in consumption patterns have led researchers to suspect that rises may also be linked to changes in the specific drugs taken alongside heroin (ONS, 2016). The same 2010-2012 heroin drought, which precipitated increases in overdose deaths when the purity of heroin returned to pre-drought levels (Drugscope, 2015), was also credited for prompting displacement from heroin onto NPS (EMCDDA, 2015). Heroin is especially dangerous taken in combination with other psychoactive substances (EMCDDA, 2014), particularly synthetic cannabinoids, so with the incorporation of NPS into heroin users’ repertoires around the same time heroin-related deaths began increasing sharply, it seems plausible that concurrent use of heroin and some types of NPS may be contributing to rising mortality.

When drug-related deaths for various substances are plotted independently on a line graph (see Figure 2-29) there appears to be a correlation between the steep reduction in the number of deaths associated with NPS and those associated with heroin/morphine in 2016/17, but not other substances. This pattern suggests there may indeed be shared variance between heroin/morphine related deaths and NPS related deaths which supports the possibility that mortality figures are reflective of high-risk concurrent use of heroin and NPS.

Figure 2-29. Number of drug-related deaths in England and Wales for selected substances

**Source: ONS (2017)**

Mortality figures for cocaine include power cocaine and crack cocaine.

### Displacement

In contrast to heroin/morphine related deaths, which appear to show a similar decline to NPS related deaths in the last year of available data, deaths associated with cocaine continue to rise. (Mortality data does not distinguish between powder cocaine and more dangerous crack cocaine). Although these rises are linked to the increasing purity of cocaine, in recent years, there is evidence to indicate that a decrease in NPS use is being displaced onto other substances such as powder cocaine and ecstasy (DrugWise, 2017; HM Government, 2017; Ralphs, Gray and Norton 2017). Increases in treatment centre admissions for traditional drugs of abuse have shown rises since the implementation of the act, as well as prevalence estimates of cocaine and other traditional illicit substances (see Figure 2-22). It is not known whether rises in the use of cocaine and other drugs are a direct result of the ban or the consequence of increasing purity and availability of these substances, nevertheless, reductions in NPS use appear to be offset by increases in the use of other illicit drugs.

Figure 2-30. Number of drug-related deaths for selected substances age 30+

**Source: ONS (2017)**

Figure 2-31. Number of drug-related deaths for selected substances age less than 30

**Source: ONS (2017)**

### Mortality and age

When mortality data is separated into younger and older age groups based on the information available from the ONS it becomes clear that the impact of heroin is considerably greater in the deaths of those aged 30 and above compared to those under the age of 30 (see Figures 2-30 and 2-31). The differing mortality profile of younger and older drug users suggests that in general, younger users may be using drugs, including NPS, in different ways and for different reasons compared to older users. The studies on NPS reviewed in the literature indicate that young people typically use NPS drugs for recreational purposes (Butler and Sheridan, 2009; Drugscope, 2014; Kelleher et. al., 2011; Winstock et. al., 2010). In contrast, problem drug use and dependency are more common in older age groups. A review by the ACMD (2016) concluded that the substantial increases in opioid deaths in recent years are explained an ageing profile of heroin users with increasingly complex health and social needs combining with greater availability of heroin, deepening socio-economic deprivation and changes to drug treatment and commissioning practices (ACMD, 2016). According to the Office of National Statistics (2018), there has been a 24% rise in deaths of homeless people in the last 5 years, of which about 32% are drug-related.

### Summary of harms

With direct laboratory testing of the effects of novel substances untenable, and precise identification of ingested substances in those admitted to hospitals and treatment centres impractical, establishing a clear evidence base for NPS related harms remains challenging. While identification and reporting of NPS use for those admitted for treatment at drug centres and hospitals is particularly problematic, post-mortem investigations provide somewhat more reliable information on substances consumed before death. Although there are several reasons that mortality figures must be treated with caution, mortality rates indicate that harms associated with NPS are relatively low, comparable to that of drugs such as cannabis, ecstasy and amphetamines, rather than highly dangerous drugs such as crack cocaine and heroin.

Although data on admissions to health services provide less comparative information, NPS related harms can to some extent be inferred from trends over time. Hospital admissions, treatment service entry and mortality statistics all converge upon a picture showing considerable reductions in drug-related harms during 2016/17 following several years of rising harms. Hospital admissions for drug poisonings and mental health / behavioural disorders have shown reductions of around 7-12% in 2016/17. Although the contribution of NPS to hospital admissions cannot be reliably isolated, admissions to drugs misuse treatment services indicate that the reductions may be due to falls in the use of NPS. Entries to drugs misuse treatment services report a 45% drop in patients citing use of NPS during 2016/17 compared to 2015/16. Mortality data further supports a picture of reduced NPS related harms in 2016/17 with the number of registered deaths citing NPS on the death certificate showing drops of around 50% compared to 2015/16.

The apparent drop in NPS related harms in 2016/17 suggest early indications are that implementation of the PS Act in 2016 may have positively impacted health harms resulting from use of NPS. Although the Government review of the PS Act point toward these trends in support of their claim that the major aims of the Act have been successfully achieved, such a conclusion might be premature based on the use of short term data and other possible confounding factors.

Several confounding factors limit the reliability of the harms data presented, and conclusions must be drawn with caution. Firstly, each of the measures relied upon to determine the effects of NPS use on people’s health are indirect measures and may be strongly affected by influences other than NPS consumption. Hospital admission data rests on clinical coding of patient’s ailments which currently exclude NPS as a category of drugs so therefore the effects of NPS use cannot be distinguished from the use of other drugs. Admission of use of NPS in drug treatment services is not only dependent on patient’s willingness to seek help and reveal use of illicit substances, but also entry criteria and service funding, all factors which may have been affected by implementation of the Act in various ways. Mortality data is based upon coroner’s likelihood of testing for and reporting of NPS use, as well as being affected by the time-lags of post-mortem inquests.

Secondly, drug harms and related deaths are strongly influenced by polydrug use, which means the effects of NPS cannot be isolated from the impacts of other drugs, particularly the dominant influence of heroin, the harm potential of which is intimately tied to the drug market and law enforcement dynamics which drive the availability and potency of drugs. While the growth of the NPS market has been linked with declines in the purity of heroin, cocaine and ecstasy following substantial seizures around a decade ago, so too might declines in use of NPS be influenced by the rises in purity and availability of these substances in recent years. Although polydrug use limits the extent to which the independent effects of NPS can be distinguished from wider factors affecting other substances, it also draws attention to interaction effects and the possibility that dangerous interactions between NPS and heroin may have contributed to sharp increases in drug-misuse deaths. However, examination of age differences in drug-misuse deaths reveals that while dangerous interactions between heroin and NPS may be significantly affecting the older cohort of problem drug users, young people appear less affected which suggests they may generally be using NPS in different ways and for different reasons.

In conclusion, although it appears plausible that the Act has had a positive impact on health harms associated with NPS, the effects are likely to be overemphasised when relying on post-ban data from a single year. The true impact of the ban is not likely to be confirmed before trend data for several years can be analysed. In addition, the effects of NPS cannot, nor should not, be viewed in isolation from other substances of abuse. It is vital to understand not just the dangerous effects of drug interactions brought about by polydrug use, but also the processes of displacement within the drug market as reductions in NPS use are compensated for by consumption of other drugs.

## Chapter summary

The diversity of NPS and their rapid emergence onto the recreational drug market represent significant changes to the UK drugs market that challenge existing approaches to drug control and intervention. Until a decade ago, recreational drugs were typically one of about six well-known substances but with the proliferation of around 670 novel substances onto the market, young people encountering drugs will be increasingly likely to come across products containing inconsistent and unknown ingredients. Despite being a diverse group of drugs, NPS can usefully be understood according to their psychoactive effects and functional similarity to the traditional substances they emulate. It is especially important that NPS are not viewed in isolation but instead considered with the wider system of the interactive and adaptive drug markets in which they exist.

It was through failing to consider the systemic and dynamic nature of recreational drug markets that the UK Government inadvertently contributed to the exacerbation of the problem that NPS present. In seeking to control individual substances without taking the time to consider the wider context and differences in relative harm potential, authorities drew producers into the cat and mouse game that led to the creation of a more diverse, complex and ultimately, more dangerous market.

Although the PS Act attempts to bring an end to the cat and mouse game, the proliferation that has already occurred remains problematic due to the continued availability of at least 400 novel, potentially harmful substances, about which very little is known. Furthermore, without addressing the technological innovation and advances that made the cat and mouse game possible in the first place, the problem of NPS is unlikely to go away. That problem is a lack of information about rapidly changing drug products and the inability of both users and authorities to be able to identify substances and accurately assess the risks of use. It is a problem which particularly affects users, as the variability of ingredients of unpredictable potency within drug products sold with no accompanying information exposes people encountering drugs to considerably greater risks than ever before.

The implementation of the PS Act was intended to reduce the level of harms resulting from use of NPS following the logic that changing their legal status would send a health message to users and eliminate open sales by vendors which would lead to a corresponding reduction in NPS-related harms. Although the PS Act appears to have successfully prevented open sales of NPS and the initial signs are that prevalence of NPS use in the general population may have declined, it also appears the Act may also be resulting in several unintended negative consequences. Evidence suggests that sales of NPS have not been prevented, but instead have shifted onto the black market where early reports indicate that the harm potential and cost of substances have increased, with vulnerable users being impacted most heavily. For those no longer using NPS, there is evidence to suggest that some users may be switching to use of traditional illicit drugs, but it is unknown to what extent this shift represents existing drug users returning to previously used substances or NPS users without a history of prior drug use taking up use of illicit drugs. Furthermore, with some former legal highs evolving into more highly addictive forms, it is a concern that users of NPS may be at risk of developing drug dependency and problematic use of harmful substances.

From the perspective of considering health inequalities, the possibility that the apparent success of the PS Act based on data from the general population might come at the cost of more vulnerable or marginalised groups is concerning. The exacerbation of health inequalities becomes possible when the interventions such as the PS Act are considered within too narrow a focus and insufficient attention is given to the complexity of the situation. In this case, a diverse range of substances, being used by different types of users in a variety of contexts has generally been treated as a single population using one type of drug. However, evidence indicates that user types and drug types are distinct, interacting in different ways which are likely to incur differential risks.

Currently, the tendency to conflate populations seems to have led to a situation where the disproportionate representation of a small, but especially vulnerable population of high-risk drug users, is not being sufficiently accounted for in the assessment of NPS harms. As a result, harm statistics which largely represent the complex needs and high-risk practices of a minority of NPS users are being generalised to what is likely to be a much larger group of users with very different consumption patterns and motivations for drug use. For example, while opiate users who take NPS in the context of polydrug use make up the majority of those in drug treatment and mortality figures, younger users of NPS show low usage of opiates and patterns of consumption more in line with recreational use of club drugs.

Until the effects of NPS can be reliably isolated in measures of harm, NPS harm statistics are likely to be heavily confounded by factors affecting the opiate market. Given that the purity of heroin, the most commonly used opiate, has been observed to drop at about the same time as the Act was introduced, there is a possibility that any resultant reductions in harms stemming from the reduced harm potential of heroin may be inappropriately attributed to changes in legislation. To make matters worse, the negative impact of the Act on the harm potential of the very drugs it sought to control may also be obscured by overreliance on data based on the general population which systematically exclude marginalised and hard to reach populations. Yet it is these marginalised populations and subgroups of users who are now exposed to greater risk due to the increased harm potential of on NPS.

If we are to develop interventions to help young people exposed to the risks of NPS use it is vitally important to improve our understanding of their relationship with these substances and how they might differ to other cohorts of drug users. We need to understand why young people use, or do not use NPS, the choices they are presented with when they encounter these drugs and what motivates their behaviour. In addition, if we are to better understand how the PS Act has affected young people, we need to improve our understanding of how implementation of the ban has impacted the choices, attitudes and beliefs around NPS which underpins their behaviour.

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# Literature review of drug prevention guidelines

## Introduction

Chapter 2 highlighted NPS as a serious health risk that disproportionately affects young people. In this chapter, attention turns to what action can be taken by those wanting to intervene to address the risk presented to young people by NPS. As the most effective interventions are based on scientific evidence of what works (EMCDDA, 2011; NICE, 2007), a review of relevant empirical studies was undertaken to establish what evidence is available that can usefully inform the development of NPS-focused interventions, and what gaps in the literature need to be addressed. This chapter presents the findings from the review of the empirical evidence base.

Despite the burgeoning field of scientific inquiry around NPS brought about by extensive media and political attention, an initial scoping search revealed no studies on the effectiveness of interventions to prevent or reduce NPS use. Most studies in the NPS evidence base have focused on issues of toxicology, pharmacology and identification and therefore have little direct relevance to this project. Nevertheless, the initial scoping search did reveal a sufficient quantity of studies examining the social and psychological aspects of NPS use to warrant further analysis.

In addition, however, there was also a need to consult the evidence base on illicit drug interventions, as, in the absence of an evidence base for NPS-specific interventions, drug use prevention guidelines recommend that NPS-focused interventions should be based on those developed for addressing use of traditional illicit drugs (HM Government, 2010; NICE, 2017). Consequently, the literature review was conducted in two parts. Part I presents the findings of a review of key drug prevention guidelines and the evidence on which they are based (Chapter 3); and Part II presents the findings of a systematic review that explored the available evidence-base for evidence on users’, and potential users’, reasons for using NPS (Chapter 4).

## Part I Drug prevention guidelines

The purpose of Part I of the review is to examine the literature on recommendations for, and effectiveness of, drug prevention interventions in order to provide a basis for the development of NPS-focused interventions. As interventions which resonate with guideline recommendations are more likely to be commissioned and supported (NICE, 2007; 2017), this review utilised a pragmatic approach that took as a starting point key guidelines and strategic documents which provide expert recommendations on intervention development and guide commissioning in the area of drug prevention. The evidence base underpinning the selected guidelines was reviewed to provide an overview of the types of drug interventions described, reported evidence of their effectiveness and recommendations for their use.

### Review objectives

1. Provide an overview and summary of intervention types included in key guidelines for drug prevention intervention development
2. Map the core elements of the interventions described
3. Evaluate the reported evidence on effectiveness for each element
4. Map the recommendations of key organisations for each element

## Method

Starting with high-level UK drugs strategy, key guidelines were assessed to identify relevant evidence suitable for inclusion in this review, in addition to further guidelines for the development of drug interventions. Each set of guidelines was also examined for additional

sources of evidence and further guidelines. In this way, an evidence base was collated that comprised much of the evidence-base interventionists would be expected to consult in the development of their drug-focused interventions. Given the recommendation that NPS interventions should be based on interventions developed for traditional drugs, it was anticipated that the approach adopted in this review would identify those drug interventions which are most likely to be applied to young people’s NPS use in the UK.

### National and local drug strategy

The drug strategy published by the Government sets out the overall approach to drug use prevention activities in the UK (HM Government, 2017). Published in 2017, current drug strategy is built on evidence provided by the Advisory Council for the Misuse of Drugs in their report on the prevention of drug and alcohol dependency (ACMD, 2015). While the UK drugs strategy prescribes actions needed at national and local levels, responsibility is also devolved to local councils who are expected to produce their own drug strategy, albeit in line with national strategy. Consequently, local drug strategy published by Sheffield Council in 2017 is also considered in this review. While evidence on intervention effectiveness is only presented within the ACMD report, all three bodies; the Government, ACMD and Sheffield council each make recommendations on the suitability of drug prevention approaches.

### Intervention guidelines and quality standards

National drugs policy (2017) advocates the use of drug prevention guidelines produced by the Department of Health, Department of Education and the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA). The primary drug prevention guidelines commissioned by the Department of Health are produced by National Institute for Health and Clinical Excellence (NICE) and Public Health England (PHE), while the primary drug prevention guidelines commissioned by the Department of Education are produced by Mentor-APEPIS.

### ACMD drug prevention review and recommendations

In 2015 the ACMD published a briefing paper to support policymakers, commissioners and practitioners working in prevention. The paper presents scientific research on the effectiveness of drug prevention interventions and sets out recommendations for those working in the prevention field. The evidence presented in the report was informed by the findings of research commissioned as part of the European Commission funded ALICE-RAP project which was set up to evaluate the effectiveness of policies designed to address young people’s addictive behaviours, including illicit drugs. The relevant findings of a systematic review of reviews delivered by the ALICE-RAP project on the effectiveness of interventions are included in this literature review (Brotherhood, Atkinson, Bates, & Sumnall, 2013).

### NICE drug prevention guidelines

In 2017, NICE published recommendations on targeted interventions for drug misuse following instruction from the Department of Health. The NICE guidelines are intended to support health and social care commissioners, providers and practitioners developing targeted interventions for the prevention of drugs misuse. The NICE recommendations were supported by a set of reviews commissioned for the purpose. The relevant findings of the NICE review on the effectiveness of interventions are included in this literature review (Novakovic, Rutter, Ainsworth, Hudson, Cullum, Canning, & McSloy, 2016).

### EMCDDA European drug prevention quality standards (EDPQS)

The EMCDDA has produced the European drug prevention quality standards (EPDQS;

Brotherhood & Sumnall, 2011). Developed through the synthesises of 19 international drug prevention quality standards, the EDPQS offers a comprehensive set of guidelines for the development of high-quality drug prevention interventions. The standards are intended to be of interest to all professionals who directly or indirectly contribute to drug prevention. The EDPQS were reviewed for suitable references, in addition to a search of the Best Practice Portal, an online database on intervention effectiveness created by the EMCDDA to complement the EDPQS. The relevant findings accessible through the Best Practice Portal are included in this literature review. The EDPQS promote the use of several international quality standards which were also assessed for suitability for use in this literature review. The international standards on drug use prevention published by the United Nations Office on Drugs and Crime in partnership with the World Health Organisation were deemed suitable for use and appropriate references reviewed and included (UNODC & WHO, 2013; 2018). However, the recommendations of the national/regional Canadian, American and Asian/South Pacific standards were assessed as unsuitable due to their focus on their local contexts.

### UNODC International standards on drug use prevention

The International standards on drug use prevention (UNODC & WHO; 2018) present a summary of international evidence on drug use prevention with the intention of supporting policymakers and other stakeholders working in drug prevention to develop effective evidence-based interventions. Recommendations for intervention development are presented in the standards together with the findings of a review of reviews undertaken by the UNODC staff and Group of Experts who collaborated to produce the standards. The relevant findings of the review of reviews presented in the standards are included here.

### Mentor-ADEPIS Quality standards for effective alcohol and drug education

Mentor-ADEPIS is a collaboration between The Alcohol and Drug Education and Prevention Information Service (ADEPIS), Adfam, DrugScope and Mentor. Commissioned through the Department of Education, Mentor-ADEPIS have produced quality standards for effective alcohol and drug education (Mentor-ADEPIS, 2014) to provide evidence and recommendations to health and education practitioners developing and implementing prevention interventions. The evidence presented in the Mentor-ADEPIS quality standards was provided by a review of intervention effectiveness conducted by Mentor (James, 2011). Although the findings in the Mentor review include those of an earlier version of the International quality standards on drug use prevention (UNODC, 2013), the review was not limited to the evidence collated by UNODC, but also considered the findings of several other reviews. Consequently, the relevant findings of the Mentor report are included here.

### PHE International evidence on drug prevention

In 2015, Public Health England published a summary of the evidence on the prevention of drug and alcohol use. However, the findings are not included in this review as the summary was limited to the evidence and recommendations presented in the International quality standards on drug use prevention which are already included here (UNODC, 2013).

### Sources of intervention guidelines and accompanying evidence bases

Table 3-1 sets out the sources used for guidelines and assessment of the accompanying evidence bases as described above.

**Table 3-1 Sources of intervention guidelines and their accompanying evidence bases**

|  |  |  |
| --- | --- | --- |
|  | **Guideline** | **Evidence base** |
|  |  |  |
| **A.** | ACMD (2015) Prevention of alcohol and dependence | Brotherhood, A., Atkinson, A.M., Bates, G., & Sumnall, H.R. (2013) Adolescents as customers of addiction. ALICE RAP Deliverable 16.1, Work Package 16. Liverpool: Centre for Public Health. |
| **B.** | EMCDDA (2011) European drug prevention quality standards | EMCDDA European Monitoring Centre for Drugs and Drug Addiction (ongoing), Best practice portal. Available from: http://www.emcdda.europa.eu/best-practice |
| **C.** | Mentor-ADEPIS (2014) Quality standards for effective alcohol and drug education | James, C. Drug prevention programmes in schools: What is the evidence? (2011) London: Mentor, from http://www.mentoruk.org.uk/2011/11/drug-prevention-programmes-in-schools- what-is-the-evidence/ |
| **D.** | NICE (2017) Drug misuse targeted interventions | Novakovic,E., Rutter, L., Ainsworth, N., Hudson, T., Cullum, A., Canning, U., & McSloy, A. (2016) Drug misuse prevention: targeted interventions. Evidence review 1. National Institute for Health and Care Excellence (NICE). London: NICE, from https://www.nice.org.uk/guidance/ng64/evidence |
| **E.** | UNODC (2018)  International standards on drug use prevention | UNODC United Nations Office on Drugs and Crime (2018) International Standards on Drug Use Prevention. Vienna: UNODC, from https://www.unodc.org/unodc/en/prevention/prevention-standards.html |

### Inclusion criteria: Evidence statements

This review takes as a starting point evidence and guidelines relating to interventions developed for traditional illicit drugs. In the absence of evidence specifically relating to NPS, this evidence base is not only the best evidence currently available, but also relates to the interventions most likely to be applied to the issue of NPS.

Although the resources identified for inclusion within this review were sourced via agencies that explicitly aim to support drug prevention activities for young people, not all the evidence and recommendations presented are pertinent to the aims of this analysis. Therefore, a set of inclusion criteria were developed for the extraction of evidence statements relevant to this review (see Table 3-2).

For example, while some sources focus on drug use exclusively, others also include information on alcohol and/or tobacco interventions. Developmental approaches in particular often target multiple substances as many of the risk factors underlying substance use are shared (e.g. impulsiveness, impaired social skills, poor mental health) (ACMD, 2015). Consequently, the lack of specificity in some intervention programmes is typically reflective of interventions that target general skills development such as self-esteem, social skills and pro-social behaviour (UNDOC, 2018). Interventions targeting general skills do not need to be substance-specific and are often implemented prior to typical ages of initiation (UNDOC, 2018), general approaches have the advantage that substances do not need to be specifically mentioned, thus avoiding the risk of inadvertently increasing substance use through raising children’s awareness of psychoactive substances.

In contrast, interventions targeting specific substances are more likely to be implemented after typical ages of initiation (UNDOC, 2018). These interventions are therefore more likely to focus on the risk and protective factors unique to each substance. As noted previously, the risk and protective factors associated with regulated psychoactive substances (i.e. alcohol and tobacco) may differ in important ways from those associated with unregulated substances (i.e. NPS and illicit drugs) and therefore interventions designed for use with one, when used with the other, may be ineffective at best and harmful at worst. Consequently, where interventions in the evidence base were identified being solely based on alcohol or tobacco they were not included in this review.

**Table 3-2. Inclusion and Exclusion criteria for evidence statements**

|  |  |  |
| --- | --- | --- |
| **Criteria** | |  |
|  | **Inclusion** | **Exclusion** |
|  |  |  |
| **1.** | Primary evidence derived from peer-reviewed empirical studies or evaluations by a reputable organisation (e.g. charity or health service)  AND | Evidence stated without reference to an original source. Evaluative statements based on conventions or common practice with no evidence of scientific basis.  OR |
| **2.** | A focus on substance use intervention/ prevention in the general population or at-risk groups, with data relevant to illicit drug use.  AND | Studies evaluating risk and protective factors of use, drug treatment, drug misuse disorders, drug prevalence, social consequences of drug use, or general health and well-being. OR |
| **3.** | Outcomes based on primary outcomes of prevention or proximal mediating factors: delayed initiation; prevention; reduction; or cessation of use or intention to use..  AND | Outcomes based on general health and well-being outcomes, tobacco or alcohol use only; risk and protective factors; mediating factors with the exception of intentions, attitudes and drug-knowledge.  OR |
| **4.** | Interventions targeting psycho-social factors within the outcome population, or aspects of the communities or environments with which they directly interact. | Interventions primarily targeting psycho-social factors of parents, teachers, professionals or organisational staff without also engaging the outcome population. Interventions primarily targeting higher-level factors and policy without also engaging with the outcome population. |

Although it is acknowledged that effective interventions are not limited to individual-level factors within the outcome population, the current research has a primary interest in interventions which engage with outcome population directly. Therefore, this review aims to assess the evidence for behaviour change interventions which include component/s aimed at individuals within the outcome population and their immediate environment. While this project is interested in drug-focused interventions which target young people, the evidence considered by this review was not strictly limited to illicit drug use or those ages 16-24. This was for pragmatic reasons, as sources did not always differentiate between common psychoactive substances or specify the age-range of the participants involved.

In recognition of the common risk factors underlying use of illicit drugs, tobacco and alcohol (ACMD, 2015), interventions often target more than one substance or take interventions for any one of these substances to be interchangeable with the others. Although evidence was only included in this review if it was explicitly presented as relevant to drug use, inevitably a proportion of the evidence will be based on evaluation of interventions targeting drinking and smoking. Where evidence was clearly derived from interventions targeting tobacco or alcohol, but not illicit drugs, it was not included in this review.

Although participant ages were not always provided, the general age range was usually apparent (pre-school, primary school, secondary school, adolescent, adult) and the majority of sources were predominantly concerned with young people. Where it appeared that interventions were targeted at pre-school, primary school or limited to secondary school ages only, the evidence was not included in this review.

### Extracting evidence statements and recommendations

Each of the resources identified for inclusion was assessed for evidence relating to the effectiveness of interventions described as targeting drug use. The evidence statements were

extracted and recorded in a spreadsheet. Once all resources had been reviewed, the statements were collated and analysed to establish the core components covered by the evaluations (e.g. scope, function, delivery method, setting, population). The outcome of the intervention mapping is presented in Table 2 in the results section.

Each evidence statement was assessed as demonstrating evidence of an intervention component being *effective*, *ineffective* or *harmful*. Where a paucity of research was explicitly associated with a specific intervention component within the evidence base it was described as having *limited evidence* or *no evidence*. The guidelines were then assessed for recommendations relevant to the intervention components identified. The extracted recommendations were mapped onto the intervention components under the description *recommended* or *not recommended*. The outcome of the evidence and recommendation mapping for each intervention component are presented as Tables in the results section below.

## Results

### Intervention type and function

The range of interventions covered in the guidelines and their accompanying evidence base are shown in Table 3-3.

**Table 3-3. Types of drug prevention interventions referenced in the key guidelines**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Type / content** | | **Delivery** | | **Setting** | **Population / scope** |
| **Informational** |  | |  | | |
| Drug knowledge  Risks of use Social norms | | Ex-user led  Peer-led  Trained professionals  Web-based Mass media Multi-component Non-judgmental approach Interactive programme Fear appeals | | **Universal:** School  **Selective:** Family settings  Health settings  Nightlife venues Sexual health clinics | **Universal:** School pupils Young people  **Selective:** At-risk youth Children of users Clubbers  LGBT+ |
| **Developmental** |  | |  | | |
| Life skills Personal skills Social skills Affective skills | | Mass media campaigns Web-based  Peer-led  Police-led  Ex-user led Trained professionals Structured course Non-judgmental approach Interactive programme Multi-component | | **Universal:** Schools    **Selective:** Family-based Youth groups | **Universal:** School pupils Young people  **Selective:** At-risk youth |
| **Environmental** |  | |  | | |
| Whole-school approach Drug testing  Safe spaces | | Services Trained staff Policy development  Multi-component  Non-judgmental approach | | **Universal:** School Communities  **Selective:** Nightlife venues Health settings Sexual health clinics | **Universal:** School pupils Young people  **Selective:** At-risk youth Clubbers MSM LGBT+ |

The interventions are categorised by scope, according to the conventions of the Institute of Medicine model of prevention (IoM Model) promoted by the EMCDDA (2011; Mrazek & Haggerty, 1994), and by function, according to the classification suggested by Foxcroft as an extension of The IoM Model (Foxcroft, 2013).

The scope of a prevention intervention is described as *universal*, *selective,* or *indicated*. Universal drug prevention interventions target whole populations without accounting for differential vulnerability to risk, selected prevention target subpopulations considered to be at greater than average risk of drug use, while indicated interventions target vulnerable individuals at relatively high risk of drug use or related harms.

The functional aspect of intervention components is described as *developmental,* *informational*, or *environmental.* Developmental components focus on the development of cognitive and social skills, build resilience and support healthy development in general. Informational components aim to improve people’s drug-knowledge and raise awareness of risks. Environmental prevention activities target the social and environmental background of people’s drug use by altering aspects of common drug-use settings or addressing wider societal factors such as social norms or regulation or by addressing conditions of adversity (ACMD, 2015; EMCDDA, 2011; Fletcher Calafat, Pirona & Olszewski, 2010).

Although some indicated interventions were covered within the guidelines and evidence base, universal and selective approaches received the greatest attention. However, as the indicated interventions were generally one-to-one interventions targeting drug users with heavy or problematic drug use, they are not included in this literature review.

Although overall, interventions attempted to influence a range of factors (including risk perceptions, social norms, skills, service provision and policies), individual-level psycho-social factors were the most frequent targets of the studies reviewed. To some extent, this may

be an artefact of reporting, as psycho-social targets were the most clearly described. For example, while whole-school environmental approaches were reported to show positive effects on drug use, some sources did not specify the mechanism by which a whole-school approach was thought to impact behaviour, while others referred to multiple factors, (e.g. increasing peer bonding and reducing truancy) some of which could be quite vague (e.g. promoting a positive school environment).

The evidence and recommendations for each intervention component are presented in Tables 3 to 19 together with a short description of how the component was typically implemented. Following the complete set of evidence tables, the principal findings are summarised before being discussed in more depth.

## Intervention components: Evidence and recommendations

Skills-based interventions received a great deal of attention within the evidence base and guidelines, with skills-based components the predominant focus of psycho-social approaches. As skills-based approaches are based on the premise that healthy development will reduce the likelihood of drug use, they do not necessarily incorporate an explicit focus on drug use and are commonly aimed at populations prior to an age when they are considered at risk of encountering or using drugs.

Although several sources referred to skills generally (see Table 3-3), others were more specific, and consequently, the efficacy of interventions focussing on general /personal skills, affective skills and social skills could also be presented separately (see Tables 3-4 to 3-7). However, it should be noted that skills-based programmes commonly combine elements, and some skills draw on similar or overlapping competencies.

### General/personal skills

The skills-based programmes referred to in the evidence base and guidelines were based almost exclusively in school settings and generally received strong support from UK-based agencies, including the UK Government (see Table 3-4) General skills-based approaches aim to increase young people’s confidence, resilience, decision-making and problem-solving skills. Although the evidence for general /personal skills is mixed, ineffective and counterproductive effects were quite clearly linked to approaches focused on ethical/moral decision-making and stand-alone esteem/confidence building inventions. The lack of effectiveness of these elements was largely reflected in recommendations, with the exception of UK policy, which places a strong focus on approaches which emphasise building confidence. Otherwise, there was clear support for skills-based elements associated with positive outcomes, particularly as part of multi-component and whole-school approaches. Although several studies reported positive skill-based intervention outcomes, generally the effects were considered to be fairly weak.

### Social skills

Social skills-based approaches support the development of people’s social competencies and communication skills. These approaches are based on an assumption that drug use is related to young people overestimating the extent of drug use among their peers, together with deficiencies in their social awareness and drug refusal skills. Social influence approaches use normative education methods and resistance skills training to help people recognise high-risk situations, increase awareness of media, peer, and family influences and build refusal skills. Although evidence on the effectiveness of social skills approaches is mixed, the weight of the evidence is positive, with the exception of high-risk groups where this approach can have counterproductive effects. Social influence approaches appear to be in fairly common use and are largely recommended, except with high-risk groups (see Table 3-5).

**Table 3-4. Evidence of effectiveness and recommendations for the use of general skills**

|  |  |  |  |
| --- | --- | --- | --- |
| **General / personal skills** |  | | |
| **Effective:**   * Skills-based programmes have been shown to have consistent long-term effects [C][E]. Positive results are associated with:   + Use in schools [A][E]   + At-risk young people [E]   + Computer-based programs [E]   + Combined approaches [A][C] * Programmes focusing on personal skills such as self- reflection have shown some positive effects [B] * Interventions focused on decision making have been found to have positive effects on drug use and intentions to use [C][D][E]   **Ineffective:**   * Approaches addressing only ethical/moral decision making, have been found to be ineffective [E] * Approaches focusing only on building confidence and self-esteem making, have been found to be ineffective [B][C][E]   **Harmful:**   * Approaches focusing only on self-esteem [B][E] | | **Recommended:**   * ACMD recommend the use of school-based skills-focused approaches * HM Government recommend approaches which build confidence and resilience * Mentor-ADEPIS recommend approaches that teach personal skills and decision-making skills * NICE recommended skills-based approaches are combined with skills training for carers / families * UNDOC/WHO recommend combined skills approaches which include decision making skills   **Not recommended:**   * NICE do not recommend the use of skill-based approaches with at-risk young people * Mentor-ADEPIS advise against approaches that focus only on self-esteem * Mentor-ADEPIS advise against approaches that focus moral/ethical decision-making * UNDOC/WHO advise against approaches that focus only on self-esteem * UNODC/WHO advise against approaches that focus moral/ethical decision-making | |
|  | | |
| Guideline source: A=ACMD, B=EMCDDA, C=Mentor-ADEPIS, D=NICE, E=UNODC/WHO | | |
|  | | |
|  | | |

**Table 3-5. Evidence of effectiveness and recommendations for the use of social skills**

|  |  |  |
| --- | --- | --- |
| **Social skills** |  | |
| **Effective:**   * Social influence-based interventions demonstrate significant positive effects on drug use [A][B][C] and intentions to use drugs [D]. Positive effects are associated with:   + Drug refusal skills [A][C][D][E]   + Combination with social competence approaches [A][C][E]   + Interactive approaches [A][C][E]   + Schools-based programmes [A][C][E]   + Use of peer educators [A][C][E] * Normative approaches have been found to be more effective than resistance skill trainingandpersonal skills training [C] * Approaches focusing on interpersonal communication skills have shown evidence of positive effects in several studies [B][C][D]   **Ineffective:**   * Some social influence programmes show inconsistent or no effects on drug use [D][E] * Teaching drug refusal skills can be ineffective [B]   **Harmful:**   * Some social influence interventions have shown counterproductive effects with high risk groups [E] | | **Recommended:**   * Mentor-ADEPIS recommend the use of combined skills approaches which include social skills or resistance skills * NICE recommend social skills-based initiatives should be linked to whole school approaches. * UNDOC/WHO recommend the use of social norms approaches * UNDOC/WHO recommend the use of combined skills approaches which include resistance skills   **Not recommended:**   * NICE do not recommend the use of skill-based approaches with at-risk young people |
|  | | |
|  | | |
| Guideline source: A=ACMD, B=EMCDDA, C=Mentor-ADEPIS, D=NICE, E=UNODC/WHO | | |

### Affective skills

Interventions targeting young peoples’ affective skills focused on helping them better manage their emotions, based on the assumption that improved emotional regulation will reduce peoples’ risk of drug use. Evidence for the effectiveness of affective components was mixed, with some evidence of iatrogenic effects linked to the use of general emotion education when

**Table 3-6. Evidence of effectiveness and recommendations for the use of affective skills**

|  |  |  |
| --- | --- | --- |
| **Affective skills** |  | |
| **Effective:**   * Affective skills-based programmes have shown some evidence of positive effects on intentions to use drugs [D][E]. Positive results are associated with:   + Coping skills [D][E]   + Identifying and managing stress [D]   + Dealing with feelings of exclusion [D]   **Ineffective:**   * Approaches focusing on general emotional education only have been found to be ineffective [B][E]   **Harmful:**   * Approaches focusing on general emotional education only can be counterproductive [B][E] | | **Recommended**:   * Mentor-ADEPIS recommend the use of combined skills approaches which include coping skills. * UNDOC/WHO recommend the use of combined skills approaches which include coping skills.   **Not recommended:**   * Mentor-ADEPIS advise against approaches that focus only on emotional education * NICE do not recommend the use of skill-based approaches with at-risk young people * UNODC/WHO advise against approaches that focus only on emotional education |
|  | | |
| Guideline source: A=ACMD, B=EMCDDA, C=Mentor-ADEPIS, D=NICE, E=UNODC/WHO | | |

not used as part of a multi-component or wider approach. Recommendations were similarly mixed but well-matched with the evidence, supporting the use of coping skills as part of combined approaches and advising against the use of stand-alone emotional education.

### Knowledge-based approaches

Knowledge-based approaches typically provide health-based information about drugs. This approach assumes drug use is a consequence of a deficiency in young people’s drug-based knowledge, and therefore increasing knowledge will lead to a change in beliefs and attitudes toward drugs and consequently change behaviour.

While evidence on the effectiveness of knowledge-based approaches is mixed there is strong evidence which shows that stand-alone information provision is ineffective, and in some cases counterproductive. Knowledge-based components can be effective as part of a combined approach and integration with more holistic strategies. Recommendations for the use of knowledge-based approaches are also mixed, and most guidelines recommend against the use of knowledge-only approaches (see Table 3-7).

### Mass media

Mass media campaigns are universal prevention activities that raise awareness about the dangers of using drugs to persuade people to avoid taking them. The advantage of mass media approaches is their ability to disseminate simple messages to a large number of people at a relatively low cost her head. Typically, they are implemented via television, radio, newspapers, magazines, posters or online. The intuitive appeal of mass media campaigns and success with other health risk behaviours has encouraged their use, but not without controversy. Mass media campaigns have been consistently been found to be ineffective and sometimes associated with counter-productive effects.

**Table 3-7. Evidence of effectiveness and recommendations for the use of knowledge-based interventions**

|  |  |  |  |
| --- | --- | --- | --- |
| **Knowledge-based** |  | | |
| **Effective:**   * Knowledge based interventions have been effective when part of a combined approach [C][E] * Drug-specific knowledge has been beneficial for at risk young people when embedded in a more holistic strategy [A] * Knowledge based interventions have been effective when using peer educators [E]   **Ineffective:**   * Evidence from several reviews and studies shows that information provision alone, or knowledge-based interventions are ineffective [A][B][C][E] * Knowledge based interventions have been ineffective when using adult educators [D] * Knowledge based interventions have been ineffective when using peer educators with high risk groups [E]   **Harmful:**   * Knowledge based interventions have been found to be counterproductive within universal approaches to drug prevention [B]. | | **Recommended:**   * ACMD Recommend mass-media-based prevention work to inform young people of the hazards of drug use * Mentor-ADEPIS recommend teaching risks and consequences of use * NICE recommend use of drug-specific education as part of a wider strategy * NICE recommend use of drug-specific information and advice for at-risk 18+   **Not recommended:**   * ACMD advise against use of drug-specific education. * EMCDDA advise against awareness raising approaches. * HM Government does not recommend the use of knowledge-only approaches * Mentor-ADEPIS advise against use of stand-alone information * Sheffield council does not recommend the use of knowledge-only approaches * UNODC advise against using stand-alone information | |
| Guideline source: A=ACMD, B=EMCDDA, C=Mentor-ADEPIS, D=NICE, E=UNODC/WHO | | |

**Table 3-8. Effectiveness and recommendations for the use of mass media methods**

|  |  |  |
| --- | --- | --- |
| **Mass media campaigns** |  | |
| **Effective:**   * Some evidence shows media promotions can be effective when they strongly connect with existing drug prevention programmes in the home,school and community [B][E]   **Ineffective:**   * Strong evidence from large-scale evaluations and meta-analyses show that stand-alone mass media campaigns are ineffective [A][B][E]   **Harmful:**   * Strong evidence from large-scale evaluations and meta-analyses show that stand-alone mass media campaigns are frequently associated with harmful effects [A][B][E] * Campaigns featuring messages about resistance skills have been found to have the most harmful effects [B] | | **Recommended:**   * ACMD recommend that mass media campaigns are only delivered as part of multiple component programmes. * ACMD recommend mass media-based prevention work to inform young people about the hazards of drug use. * EMCDDA recommend mass media campaigns are only delivered as part of multiple component programmes created in conjunction with young people and subjected to pilot testing. * HM Government recommend promotion of the drug information website FRANK   **Not recommended:**   * EMCDDA does not recommend the use of stand-alone mass media approaches. * HM Government does not recommend the use of stand-alone mass media approaches. * NICE does not recommend the use of stand-alone mass media approaches. * UNDOC/WHO does not recommend the use of stand-alone mass media approaches. |
|  | | |
| Guideline source: A=ACMD, B=EMCDDA, C=Mentor-ADEPIS, D=NICE, E=UNODC/WHO | | |

The use of stand-alone mass media campaigns is consistently advised against in the majority of the guidelines. When they are used it is generally advised that they form part of a wider strategy. Although the ACMD recommend investment in mass media campaigns to inform young people of the hazards of drug use they also recommend they are delivered as part of a wider programme. The web-site FRANK is a mass media campaign that provides information on drugs and drug harms and is a key element of the demand reduction aspect of the UK Government’s strategy.

### Web/mobile-based approaches

Web/mobile-based approaches to drug prevention are programmes which are administered via the internet or mobile phones. They are generally considered distinct from mass media campaigns as they are interactive, more specifically targeted and can involve a series of sessions or customisable programmes. Web-based approaches can be very heterogeneous involving a variety of components, but they are often skills-based. Although evidence for the effectiveness of web-based approaches still remains quite limited and some studies have found no or inconsistent effects they are optimistically promoted with calls for more research into their efficacy. The significant advantage offered by web-based approached is their potential for selective targeting combined with far reach. They also have the advantage of offering privacy and confidentiality, factors which may be especially important for engaging with users or potential users of illicit drugs. Although web-based approaches may exclude some of the most vulnerable groups who do not have good access to the internet, there is also some evidence that they can improve contact with some at-risk groups.

**Table 3-9. Effectiveness and recommendations for the use of web-based approaches**

|  |  |  |  |
| --- | --- | --- | --- |
| **Web / mobile phone-based** |  | | |
| **Effective:**   * Several studies have shown general positive effects with positive results associated with:   + Recreational users [B]   + At-risk young people [D]   + Web-based and mobile phone-based approaches [B]   **Ineffective:**   * Mobile phone-based approaches have been found to have inconsistent effects on drug use [D] * Some web-based interventions have shown no reduction in drug use compared with control conditions [D]   **No evidence:**   * There is currently no evidence for the effectiveness of specific NPS-based online prevention interventions [B] | | **Recommended:**   * EMCDDA recommends more research into the possibilities of web-based approaches. * EMCDDA recommend the use of the internet and digital devices as platforms for the delivery of health responses and interventions. * NICE recommends the use of web-based and mobile phone-based approaches as well as recommending more research into their effectiveness. | |
|  | | |
|  | | |
| Guideline source: A=ACMD, B=EMCDDA, C=Mentor-ADEPIS, D=NICE, E=UNODC/WHO | | |

### Interactive approaches

Interactive methods involve two-way interactions between young people and the mode of delivery, whether that is teachers, peers, online or virtual programmes or trained professionals. Many methods have the possibility to include interactive elements; in schools, this may be group discussions, pupil-led research or skills-practice. Online programmes can offer forums, messaging and interactive web pages. Non-interactive methods include lectures and stand-alone information provision. Although the interactivity of many interventions is not routinely measured, there is consistent evidence from a range of sources which demonstrates the effectiveness of using interactive methods and their use is recommended within several guidelines.

**Table 3-10. Effectiveness and recommendations for the use of interactive approaches**

|  |  |
| --- | --- |
| **Interactive approaches** | |
| **Effective:**   * Interactive approaches show evidence of beneficial effects [A][B][C][D][E] * Evidence shows that interactive approaches which involve peers are most effective [B] | **Recommended:**   * EMCDDA recommend the use of interactive methods. * Mentor-ADEPIS recommend the use of interactive methods. * UNDOC/WHO recommend the use of interactive methods. |
|  | |
| Guideline source: A=ACMD, B=EMCDDA, C=Mentor-ADEPIS, D=NICE, E=UNODC/WHO | |

### Non-judgemental approach

A non-judgemental approach is respectful, caring and avoids overly authoritative methods or shaming and stigmatising users. Use of a non-judgemental approach is recommended as it is associated with positive outcomes and has been found to be more acceptable to participants.

**Table 3-11. Effectiveness and recommendations for non-judgemental approaches**

|  |  |
| --- | --- |
| **Non-judgmental approach** | |
| **Effective:**   * Evidence shows that a non-judgmental approach is associated with positive outcomes [C][D][E] | **Recommended**:   * EMCDDA recommends the use of a non-judgmental approach * NICE recommends the use of a non-judgmental approach |
|  | |
| Guideline source: A=ACMD, B=EMCDDA, C=Mentor-ADEPIS, D=NICE, E=UNODC/WHO | |

**Table 3-12. Effectiveness and recommendations for the use of fear appeals**

|  |  |  |
| --- | --- | --- |
| **Fear appeals** |  | |
| **Ineffective:**   * Fear-based approaches have consistently been found to have no effect [C][E]   **Harmful:**   * Evidence shows that fear appeals can have counterproductive effects [C][E] | | **Not recommended:**   * ACMD advise against the use of fear appeals * HM Government advise against the use of fear appeals in interventions that are not part of a wider prevention programme * Mentor-ADEPIS advise against use of fear appeals * Sheffield council advise against the use of fear appeals * UNODC/WHO advise against the use of fear appeals |
|  | | |
| Guideline source: A=ACMD, B=EMCDDA, C=Mentor-ADEPIS, D=NICE, E=UNODC/WHO | | |

### Fear appeals

Fear appeals use fear arousal to try to motivate people to avoid drug use. Fear appeals rely on the presentation of health threats and vulnerability to risk. Despite the intuitive appeal of this approach, fear appeals have consistently been found to have no effect and are not recommended for use within most of the guidelines.

### Peer educators

In this context, peer-led interventions are interventions in which young people engage with other young people to share information and knowledge. A summary of the recommendations for the use of peer-led interventions is shown in Table 3-13 together with a summary of the evidence on which the recommendations are based.

**Table 3-13. Effectiveness and recommendations for the use of peer educators**

|  |  |  |
| --- | --- | --- |
| **Peer educators** |  | |
| **Effective:**   * Strong evidence shows that interventions that involve peer educators have been found to be effective [A][B][C][D][E] Positive results have been associated with:   + Manualised programmes [B]   + Group-based skills training [D] * Some evidence shows positive outcomes for peer mentoring approaches [E] * Peer mentoring approaches have shown positive effects for young people whose parents/family members use drugs [B]   **Ineffective:**   * Some evidence shows no or limited effectiveness of peer-led initiatives [B][D] * There is evidence that use of peer educators in high-risk groups can be ineffective [E] * Some evidence shows peer mentoring programmes have no short- or long-term preventative effects on illegal drug use [A] * Peer mentoring schemes that are not evidence-based have been found to be ineffective [E] | | **Recommended:**   * EMCDDA recommend the use of peers in interventions * Mentor-ADEPIS recommend the use of trained peers * UNDOC/WHO recommend the use of trained peer educators * UNDOC/WHO recommend the use of mentoring using trained and supported mentors within a structured programme |
|  | | |
| Guideline source: A=ACMD, B=EMCDDA, C=Mentor-ADEPIS, D=NICE, E=UNODC/WHO | | |

### Trained professionals

The term ‘trained professionals’ refers to teachers, practitioners and other professionals who are trained in the use of a specific intervention program. A summary of the recommendations for the use of trained professionals in interventions is shown in Table 3-14 together with a summary of the evidence on which the recommendations are based.

**Table 3-14. Effectiveness and recommendations for the use of professionals**

|  |  |  |
| --- | --- | --- |
| **Professional-led** |  | |
| **Effective:**   * Interventions that involve trained teachers and health professionals have been found to be effective [A][B][E] | | **Recommended:**   * EMCDDA recommend the use of trained professionals * Mentor-ADEPIS recommend the use of trained professionals * NICE recommend the use of trained professionals * UNDOC/WHO recommend the use of trained professionals |
|  | | |
| Guideline source: A=ACMD, B=EMCDDA, C=Mentor-ADEPIS, D=NICE, E=UNODC/WHO | | |

### Ex-users

Interventions engaging ex-drug users in delivery typically centre on the use of testimonials. A summary of the recommendations for the use of ex-users in interventions is shown in Table 3-15 together with a summary of the evidence on which the recommendations are based.

**Table 3-15. Effectiveness and recommendations for the use of ex-users**

|  |  |  |
| --- | --- | --- |
| **Ex user-led** |  | |
| **Ineffective:**   * Ex-user led interventions have been found to be ineffective [E] | | **Not recommended:**   * EMCDDA does not recommend initiatives led by ex-users * HM Government advises against the use of ex-users in interventions not part of a wider programme * Mentor-ADEPIS advises against the use of ex-user testimonials * Sheffield council does not recommend ex-user led interventions * UNODC/WHO advises against the use of ex-user testimonials |
|  | | |
| Guideline source: A=ACMD, B=EMCDDA, C=Mentor-ADEPIS, D=NICE, E=UNODC/WHO | | |

### Police educators

Police educators typically deliver programs in schools. A summary of the recommendations for the use of police officers in interventions is shown in Table 3-16 together with a summary of the evidence on which the recommendations are based.

**Table 3-16. Effectiveness and recommendations for the use of police**

|  |  |  |
| --- | --- | --- |
| **Police-led** |  | |
| **Ineffective:**   * Police led interventions have been found to be ineffective or counterproductive [B][E] | | **Not recommended:**   * EMCDDA does not recommend initiatives be led by police officers but suggests a complementary role * HM Government advises against the use of police in interventions which are not part of a wider prevention programme * Sheffield council does not recommend police-led interventions * UNODC/WHO recommend against the use of police-led interventions |
|  | | |
| Guideline source: A=ACMD, B=EMCDDA, C=Mentor-ADEPIS, D=NICE, E=UNODC/WHO | | |

## Settings

### School-based approaches

School-based approaches can be classroom-based involving the teaching of a defined curriculum or following a manualised approach or it can focus on wider aspects of the school context. Whole-school approaches can focus on a range of methods including school

substance polices, school norms, relationships between pupils and staff or pupil’s attachment to school and peers. A summary of the recommendations for the use of school-based approaches is shown in Table 3-17 together with a summary of the evidence on which the recommendations are based.

**Table 3-17. Effectiveness and recommendations for the use of School-based approaches**

|  |  |  |
| --- | --- | --- |
| **School-based** | | |
| **Effective:**   * Evidence shows classroom-based education targeting knowledge, skills and social norms are effective, but effects can be small and fade over time [A][B][C][E] Positive results are associated with:   + A structured course of sessions [A][C]   + Use of peer educators [A][C]   + Vulnerable young people [C] * Whole-school approaches promoting a positive environment, peer bonding and reducing truancy show positive results as a complement to drugs education [A][C][E] * There is strong evidence that comprehensive approaches involving communities and schools is effective for high-risk young people [B] * There is strong evidence that manualised programmes in schools are effective for preventing drug use [A][B]   **Ineffective:**   * Standalone school curricula designed to increase drug knowledge have been found to be ineffective [A][C]   **No evidence**   * There is no evidence for the effectiveness of NPS-focused prevention activities in schools [B] | **Recommended:**   * ACMD recommend the use of school-based skills-focused approaches * ACMD Recommend providing all pupils with accurate, credible and consistent information about the hazards of drug use * EMCDDA recommends adapting existing school-based programmes with proven effectiveness to include NPS * EMCDDA recommends the use of manualised programmes/ structured series of sessions * HM Government recommend approaches which aim to build confidence and resilience in school contexts * HM Government recommends adaptation of the PSHE curriculum to include NPS * Sheffield council recommend resilience-based approaches and provision of information on drugs, harm reduction and advice in schools and universities * Sheffield council recommend the use of sensitive drug policies in schools * UNDOC/WHO recommend the use of whole-schools approaches focused on policies and increasing school attachment   **Not recommended:**   * NICE does not recommend the use of manualised programmes * NICE does not recommend the use of one-off sessions * UNDOC/WHO does not recommend the use of one-off sessions | |
|  | |
| Guideline source: A=ACMD, B=EMCDDA, C=Mentor-ADEPIS, D=NICE, E=UNODC/WHO | |

### Youth group settings

Interventions in youth group settings can be delivered within a community organisation or as part of outreach work. A summary of the recommendations for the use of interventions in youth group settings is shown in Table 3-18 together with a summary of the evidence on which the recommendations are based.

**Table 3-18. Effectiveness and recommendations for the use of youth group settings**

|  |  |
| --- | --- |
| **Youth group settings** | |
| **Effective:**   * Skills-based training is more effective in settings young people trust when they are surrounded by like-minded peers [D]. * Youth groups / leisure activities can increase engagement with vulnerable groups [B] * some programmes are ineffective [D] | **Recommended:**   * EMCDDA recommend youth group settings, particularly for at-risk young people but with care being taken to avoid stigmatization. * NICE recommended further research into the effectiveness of planned outreach activities. | |
|  | |
| Guideline source: A=ACMD, B=EMCDDA, C=Mentor-ADEPIS, D=NICE, E=UNODC/WHO | |

### Family-based approaches

Family-based approaches can involve parents only or parents and their children together. A summary of the recommendations for the use of interventions in family-based settings is shown in Table 3-19 together with a summary of the evidence on which the recommendations are based.

**Table 3-19. Effectiveness and recommendations for the use of family-based approaches**

|  |  |
| --- | --- |
| **Family-based** | |
| **Effective:**   * Evidence shows that family-based interventions can have positive effects. The most effective interventions are associated with:   + Use of multi-component skills-based elements [A][D]   + A focus on parent/carers and their children [A][B][D]   + Inclusion of interpersonal communication skills [B][D]   + Manualised family-based programmes [A] * For foster carers, evidence shows that behaviour reinforcement systems are an important component [D]   **Ineffective:**   * There is evidence that parent-orientated programmes are poorly attended and may stigmatise parents of high-risk young people [B]. * Some evidence shows that family-based programmes are generally not effective or have inconsistent effects on drug use [D] | **Recommended:**   * NICE do not recommend the use of family-based interventions but when used recommend skills-based interventions which include both parent/carers and their children * Sheffield council recommend family-focused interventions | |
|  | |
| Guideline source: A=ACMD, B=EMCDDA, C=Mentor-ADEPIS, D=NICE, E=UNODC/WHO | |

### Night-life settings

Interventions in night-life settings typically involve the use of brief interventions alongside safe spaces or drug-testing services. A summary of the recommendations for the use of interventions in night-life settings is shown in Table 3-20 together with a summary of the evidence on which the recommendations are based.

**Table 3-20. Effectiveness and recommendations for the use of night-life settings**

|  |  |
| --- | --- |
| **Night-life settings** | |
| **Effective:**   * Evidence is mixed for the implementation of safer night-life settings, but some initiatives are associated with significant positive outcomes [B] * Evidence shows that on-site drug testing is effective in reducing reduce people’s intentions to use drugs as well as reducing drug harms [B]   **No evidence:**   * Some safer nightlife settings initiatives are being used with insufficient evidence [B] * There is a lack of evidence on the effectiveness of drug checking in reducing NPS use and related harms [B] | **Recommended:**   * EMCDDA recommend that interventions in nightlife setting are adapted to respond to NPS use and related harms * EMCDDA recommend the use of drug testing services * NICE recommends drug-use information provision in night-club and festival settings * Sheffield council recommend the training of staff in licensed premises to recognise the risk and impact of substance misuse * UNDOC recommends approaches which focus on staff training and counselling, acceptance of the programme, engagement with law enforcement and health and social sectors and enforces existing venue and community policies on drug use. | |
|  | |
| Guideline source: A=ACMD, B=EMCDDA, C=Mentor-ADEPIS, D=NICE, E=UNODC/WHO | |

### Health service settings

Interventions in health service settings commonly consist of brief interventions alongside drug-testing services and har-reduction programs. A summary of the recommendations for the use of interventions in health service settings is shown in Table 3-21 together with a summary of the evidence on which the recommendations are based.

**Table 3-21. Effectiveness and recommendations for the use of health service settings**

|  |  |
| --- | --- |
| **Health service settings** | |
| **Effective:**   * Drug-testing services located in sexual health centres have been shown to reduce people’s intentions to use drugs and increase use of harm-reduction practices alongside the provision of harm-reduction information [B].   **No evidence:**   * There is currently a lack of data to inform appropriate NPS harm reduction services, and a lack of evaluation of the effectiveness of these approaches [B]. * but there is yet no evidence of reduction of harms relating to NPS use [B]. * There is no evidence for the effectiveness of specific NPS interventions in health settings [B]. | **Recommended:**   * EMCDDA recommend the training of sexual health clinic staff in issues associated with NPS use * EMCDDA recommend the use of drug testing services * EMCDDA recommend staff training to aid the identification of individuals who require hospital treatment for NPS use and the adaptation of existing effective prevention, harm reduction and needle exchange approaches to incorporate NPS * HM Government recommend the use of targeted interventions by sexual health services * NICE recommends drug-use information provision and skills-based interventions in health care settings including sexual health centres | |
|  | |
| Guideline source: A=ACMD, B=EMCDDA, C=Mentor-ADEPIS, D=NICE, E=UNODC/WHO | |

### Multi-component approaches

Multi-component strategies combine elements of other approaches, typically skills-based approaches. A summary of the recommendations for the use of multi-component approaches is shown in Table 3-22 together with a summary of the evidence on which the recommendations are based.

**Table 3-22. Effectiveness and recommendations for the use of multi-component approaches**

|  |  |
| --- | --- |
| **Multi-component approaches** | |
| **Effective:**   * There is modest evidence to show that multi-component drug approaches are more likely to be effective than single-component programmes that target just the individual [A][C][E] * Evidence shows that community-based multi-component approaches can prevent the use of drugs [E] * Multi-sectorial programmes with multiple components including schools and communities have been found to have beneficial effects [A] | **Recommended:**   * EMCDDA recommend that interventions are multi-component, utilise a variety of methodologies and are integrated into the community. * Mentor-ADEPIS recommend using multi-component approaches that combine skills education with other programmes and whole-school approaches. * UNDOC/WHO recommend the use of evidence-based multi-component approaches in a range of settings and recommend involving communities and universities. |
|  | |
| Guideline source: A=ACMD, B=EMCDDA, C=Mentor-ADEPIS, D=NICE, E=UNODC/WHO | |

## Discussion

This chapter set out to provide an overview and summary of the types of drug prevention interventions recommended for use in guidelines provided by lead agencies in the field and to assess evidence of their effectiveness. Accordingly, the review aimed to map the core elements of the interventions described in the guidelines; to evaluate the reported evidence on the effectiveness of each element; and the recommendations for their use.

In the following section, the principal findings of the review in relation to these aims are summarised before a discussion of the field in general, drawing on some of the tensions which arise between different approaches to intervention and their shifting popularity over time.

The discussion then moves on to the consideration of the implications of these findings for intervention development, as well as the strengths and limitations of the review method and analysis. Finally, the chapter concludes with a summary of the key points contributed by this review towards the overarching aims of this thesis.

### Principal findings

Where there is clear evidence for the effectiveness, or lack of effectiveness, of specific intervention components, the guidelines provided by the relevant organisations typically offer recommendations congruent with that evidence.

*Effective approaches:*Regarding ‘what works’ and is recommended in drug prevention there is consistent evidence for the effectiveness of:

* Combined skills-based approaches using personal, social and affective elements
* Approaches focusing on personal decision-making skills
* Social norms-based interventions (skills and informational components)
* Use of a non-judgemental approach
* Use of interactive methods
* Use of trained professionals
* Interventions set within health services
* Interventions set within nightlife/entertainment venues
* Interventions engaging with youth groups

*Mixed evidence of effectiveness:*  
Other approaches demonstrate mixed findings, with components associated with both positive and negative effects, and in some contexts, counterproductive effects. Recommendations largely reflect the evidence with effective elements recommended for use and ineffective elements not recommended:

* Drug-refusal training - mostly reported as effective, and despite some evidence of ineffectiveness, recommended for use.
* Social influence approaches - recommended for use due to strong evidence of effectiveness, although there is some evidence of ineffective/counterproductive effects.
* Affective-skills - use of coping skills is effective and recommended, but stand-alone general emotional approaches are not recommended for use due to ineffective or counterproductive effects.
* Knowledge-based components – are effective when embedded within a multi-component approach but ineffective or harmful used as a stand-alone approach. Recommendations for use are mixed, with most organisations advising against the use of stand-alone information provision, with the recommendation that when needed, knowledge-based components should be embedded within a multi-component approach.
* Use of peer-educators – recommended due to strong evidence of effectiveness, although some peer-led interventions are reported as ineffective, particularly for high-risk groups.
* Web/mobile-based strategies – recommended despite mixed findings for the effectiveness of these strategies
* Mass media campaigns - generally not recommended due to strong evidence of the ineffectiveness of stand-alone informational approaches. When needed it is recommended that they are used as part of a multi-component approach in line with evidence demonstrating the effectiveness of this strategy.
* Interventions within school settings – recommended, despite the ineffectiveness of stand-alone drugs education, due to evidence of the effectiveness of skills-based and whole-school interventions.
* Family-based interventions – Mixed recommendations in line with mixed evidence of effectiveness.

*Ineffective or counterproductive:*  
The evidence for what does not work is stronger than for what does (ACMD, 2015), and the following approaches are generally not recommended due to clear evidence for their lack of effectiveness and potential for causing harm:

* Approaches targeting only self-esteem/ confidence – ineffective and counterproductive
* Standalone knowledge-based approaches – ineffective and counterproductive
* Fear appeals – ineffective and counterproductive
* A focus on moral/ethical decision making – ineffective
* Interventions led by ex-users – ineffective
* Interventions led by the police – ineffective

The only apparent exception to the advice against using these approaches is the recommendation within UK drugs policy which strongly endorses the use of interventions aiming to build young people’s confidence.

### General discussion

Despite some conflicting findings, the existing research evidence appears reasonably consistent, with some clear messages emerging about which approaches are most effective, and which are best avoided or used with caution. The strongest evidence base appears to support the use of combined skill-based approaches, particularly those focusing on social norms, interpersonal skills and personal skills. There is also evidence to indicate that interventions benefit from being interactive, non-judgemental and involving peers in delivery. In addition, evidence shows that it is best to avoid the use of standalone drug-knowledge components, fear appeals and isolated use of esteem/ confidence building approaches and to employ caution when employing social influences and affective skills components.

*Contradictions and tensions*   
Despite the relative consistency of the findings, there are also several contradictions between the evidence base and guidelines. Although most were reasonably minor, two of the more conspicuous contradictions were the continued support for stand-alone information provision, despite strong criticisms directed at stand-alone knowledge-based approaches, and the strong focus of UK policy on building young people’s confidence, despite the lack of evidence for confidence-based approaches.

These contradictions are symptomatic of ongoing tension that runs through the UK public health context. That is the tension between structuralist perspectives which highlight the importance of social structures in shaping health outcomes and individualist perspectives that emphasise the role of individual agency and personal responsibility for health.

In this context, UK drug strategy and policies present a strongly individualised perspective on drug use while the other guidelines, particularly the European and International guidelines, present a perspective that takes greater account of wider social factors. This emphasis on wider social factors is in line with the ‘social wave’ of public health which emerged alongside growing awareness of the impacts of social inequities on health (e.g., Black, Morris, Smith & Townsend, 1980; Lawn et al., 2008; Davies et. al. 2014). In light of this recognition, the ethical obligation to address health inequalities has steadily gained influence as a political issue and the reduction of health inequalities is now a key strategic priority both internationally (WHO, 2014) and in the UK (Public Health England, 2013). Along with increased awareness of the social determinants of health came the accompanying recognition that health promotion must also address the social and economic factors that shape behaviour and determine health outcomes (Rose, 1992).

*Informational approaches*The contradictions seen here arise as a result of continued attempts to apply traditional individualistic approaches to drug prevention despite growing recognition of the impact of wider social and environmental factors on drug use. Regarding continued support for stand-alone information provision, the reliance on informational approaches rests upon a model of young people as ‘rational consumers’ (ACMD, 2015; HM Government, 2010; 2016; 2017). In policy-level papers, the UK Government explicitly state that its demand reduction approach assumes a model in which ‘people’s behaviour is the outcome of rational decision making and if rational individuals are aware of the dangers associated with drugs they will choose not to take them, and by providing information, interventions aim to make drug users more likely to reduce or quit, and non -users less likely to start’ (HM Government, 2010b, p.11). UK Drug policy frames drug use as the outcome of individual choice, placing responsibility for drug use predominantly on the individual. Young people are held accountable for their own drug

use and are presented as responsible for their own health (HM Government, 2010).

The problem is well illustrated in the ACMD report (2015) and UK drugs policy (2017). Despite both parties clearly acknowledging that the programmes least effective in preventing substance use are knowledge-only approaches and mass media campaigns, they each go on to recommend stand-alone media-based drug information provision as a core aspect of their recommended preventative action aimed at young people.

*The shift toward developmental approaches*This endorsement of knowledge-only approaches runs counter to the general consensus within the drug prevention field in which drug prevention activities have increasingly shifted from an emphasis on information provision to a focus on developmental and environmental approaches that pay greater attention to wider factors and view young people as embedded within the wider social and environmental context. This shift is reflected in the strong emphasis placed on skill-based approaches in the evidence-base and guideline recommendations.

Although many skill-based approaches still contain a decision-making component, drug use is framed as rooted in developmental risk and protective factors, including a young person’s socio-economic position and material circumstances. The developmental perspective shifts intervention activities from prevention of drug use, to the prevention of the development of health and social problems (ACMD, 2015). Universal prevention activities become life-course approaches that aim to promote health and well-being with the goal of enhancing strengths so as to reduce the risk of problematic outcomes later (ACMD, 2015; HM Government, 2017).

This shift towards a strengths-based perspective is reflected in the strong focus on building young people’s confidence and resilience in UK drug strategy. Universal action to promote health is aimed at giving young people the confidence, resilience and risk management skills

to resist risky behaviour (HM Government, 2017). However, in relying upon a very individualised conceptualisation of resilience, UK drugs policy manages to ratify an individualistic model of behaviour with a developmental perspective. Although within the field of resilience research, the concept of resilience has evolved from an individual-level internal trait or capacity to a more ecological understanding that encompasses wider social factors (Masten, 2007), UK drug strategy presents an internalised concept of resilience more in line with early definitions. In emphasising the need for young people to be more resilient to the range of risks they face, young people continue to be framed as personally responsible for ameliorating the risk factors underpinning drug use and ensuring they keep themselves healthy (HM Government, 2017).

The significance of an individualised understanding of drug use is in the implications this has for addressing health and social inequalities. If drug use is seen as solely or largely the responsibility of the individual, then the influence of structural factors associated with drug use are deemphasised and the responsibility the State bears to address the structural influences contributing to drug harms is diminished. Where those structural factors are related social and health inequalities, the individual then becomes burdened with the reduction of health inequalities in the expectation that they should overcome the impact of social inequalities contributing to their drug use through their own efforts.

*The growing popularity of environmental approaches*While developmental approaches seek to influence risk and protective factors that precede and prevent later drug use, environmental approaches aim to alter the young person’s immediate cultural, social, physical, and economic environments in which they make their choices about drug use (EMCDDA, 2011). An environmental perspective acknowledges that young people’s drug use is not based solely on individual-level factors or personal characteristics. Young people are viewed instead as being influenced by a complex set of individual and environmental factors including social norms; laws and regulations and taxes; exposure to publicity messages; and the availability of drugs.

Environmental approaches can focus on levels close to young people, or more distal levels. A useful tool for considering the social and environmental levels is Brofenbrenner’s (1977, 1986) ecological model of development (see Figure 3-1).

Figure 3-1. Brofenbrenner’s (1977, 1986) ecological model of development

The immediate environment in which the individual is embedded is the microsystem, that is, the contexts of everyday life which provide the settings for many environmental

interventions. The evidence base provided evidence for environmental interventions set in schools, families, health services and nightlife/entertainment venues. In targeting the environments that young people engage with directly and the social norms and policies that operate in those environments, these interventions operate largely at micro and meso levels. Environmental interventions can also target influences which shape micro and meso systems, though actions operating at Exo and macro levels, such as changes to the education system or regulatory measures.

Although environmental approaches are gaining in popularity (EMCDDA, 2011) they are not as well represented in the guideline evidence base as developmental approaches. One example of an environmental approach is the whole-school approach. Whole-school approaches aim to influence risk and protective factors to reduce the likelihood that young people will take drugs through increasing young peoples’ attachment to school and improving their relationships with staff and peers. Whole-school approaches to drug use have shown positive results with illicit drug use, and there is no reason to suspect they would be less effective for NPS use than illicit drugs as they target general risk factors for substance use. However, as they are focused on generic risk factors, they are unlikely to require significant adaptation for use with NPS.

What constitutes an environmental approach is not always clear cut, and as with informational approaches there can be an environmental component to intervention programmes. While interventions targeting levels more distal from the individual such as policies and legislation might be more easily labelled as environmental interventions, activities targeted at the micro and meso levels which individuals interact with more directly commonly involve multiple components that interact with both the individual and the environment.

*Multi-component and multi-level approaches*There is strong support for the use of multi-component approaches within the guidelines (ACMD, 2015; EMCDDA, 2011; Mentor-ADEPIS, 2014; UNODC, 2018) with several problematic intervention components being recommended for use only within wider strategies. However, multi-component approaches can be challenging to implement and evaluate, and as a result, there is a limited evidence base for these approaches. Nevertheless, multi-component approaches are considered to hold promise as the efficacy of various intervention components appears to be improved when part of a wider multi-component approach (Brotherhood, et. al., 2013; EMCDDA, 2011).

Although multi-component approaches can refer to multiple domains at the same level, as with skills-based approaches which combine more than one skill domain (e.g. social skills, communication skills, affective skills, cognitive skills etc.), multi-component is also used to describe multi-level approaches which combine intervention activities across levels such as combining skills-based programmes with whole schools approaches and community-based initiatives.

Interventions in health service and nightlife/entertainment settings, although distinguished by the environment in which they are implemented, are examples of multi-component interventions. For example, intervention programmes implemented in nightlife settings can involve changes to; the physical environment such as chill-out rooms; staff training to recognise when people are under the influence; attitudes and drug-taking norms; provision of drug-risk information and harm-reduction education; provision of drug testing services; and the sharing of drug information with early warning systems (Charlois, 2009; EMCDDA, 2012; Brunt & Niesink, 2011; Valente et al., 2015).

Although there is no evidence demonstrating the effectiveness of this sort of programme with NPS, there is some evidence that some initiatives are associated with positive drug prevention outcomes, particularly when combined with a community approach (Fletcher et. al., 2010). The EMCDDA advise that interventions in nightlife settings are suitable for use with NPS and recommend that they are adapted to include NPS. The selective nature of nightlife settings allows the intervention program to be targeted at an appropriate population, for whom drug-specific information is relevant. Although drug-testing services can be controversial due to the perception that drug-use is being condoned, support for nightlife-based interventions is growing in the UK (EMCDDA, 2016)

Similarly, drug-testing services and information provision located in health settings, such as sexual health clinics, are suitable for targeting NPS users as drug use and NPS use is higher in some of the populations which most frequently use sexual health clinics such as MSM and LGBT+ groups. However, night-life settings may be better suited to engaging young recreational drug users as drug interventions in sexual health settings target only a small minority of drug users, typically MSM, who engage in high-risk drug practices and chemsex (EMCDDA, 2016).

### Implications for intervention development

*Ethical principals*In consideration of ethical principles of intervention development, from a health inequalities perspective, it is important to consider the relationship between wider structural factors and the drug use of the target population and to pay attention to the impact of social inequalities. Furthermore, it is important to consider the way in which any intervention may interact with social inequalities as not only can social inequalities undermine the effectiveness of intervention activities, but interventions may exacerbate health inequalities (Jepson, Harris, Platt & Tannahill, 2010). If interventions fail to account sufficiently for differential impacts on different groups as well as their different needs, inequalities can be perpetuated and compounded. Equally, interventions also have the positive potential to reduce inequalities, so it is important to consider any opportunities for interventions activities to address inequalities and their causes.

One way in which interventions might contribute to the exacerbation of inequalities highlighted by this review is the potential for explanations of drug use to be reduced to individual-level factors and failing to sufficiently acknowledge the influence of wider social, environmental and structural influences. When designing drug interventions, it is important to remain sensitive to any potential for the intervention approach or activities to be perceived as victim-blaming.

It is worth noting that at systematic review level the evidence base offered little evidence able to contribute to an understanding of the impact of inequalities on intervention effectiveness. One review of interventions by Jepson et al., (2010) noted that the systematic reviews within their review of reviews largely failed to take account of the inequalities agenda and concluded that it is crucial that researchers and interventionists make health inequalities a central concern.

The association of several intervention components with counterproductive effects demonstrates that drug interventions have significant potential for negative unintended consequences. Interventions should, therefore, be designed with care and based on the best available scientific evidence to minimise the likelihood of iatrogenic effects. The potential for knowledge-based approaches to have counterproductive effects is especially concerning as many interventions necessarily include relevant drug-information. To reduce the potential for information provision to encourage drug use, selected populations should be carefully targeted, and intervention design supported by the use of needs assessments and partnership work with targeted groups.

A further ethical concern for consideration is the acceptability of interventions with those who they engage. The findings of the review offered evidence pointing toward the importance of a non-judgemental approach for interventions to be successful. Authoritarian, didactic styles

and the use of lectures were noted to be unpopular as well as ineffective (EMCDDA, 2011; NICE, 2017). This highlights the importance of paying attention to the dynamics of power and authority if drug interventions are to be acceptable to young people.

*Interventions effectiveness*Turning attention to intervention effectiveness, the findings of the review point toward important considerations for the relevance of interventions in respect of components, populations and levels of intervention.

The difficulty with universal approaches targeting whole populations is the knowledge problem, that is the tendency for information provision and drug-education to have counterproductive effects when used with an unsuitable population. To some extent, the knowledge problem reflects the condition that information is a component part of most drug-focused interventions, and the distinction between informational approaches and other approaches is not always clear. Developmental skills-based approaches are grounded in knowledge exchange, as are various environmental approaches such as drug-testing services and interventions targeting social norms. Knowledge is a key currency within all interventions designed to purposefully engage with young people, and that knowledge embodies a variety of domains. From the interventions reviewed here several domains are discernible; health-risk knowledge, drug-specific knowledge, social knowledge, affect-based knowledge, knowledge about services etc. These domains of knowledge interact across intervention types and levels and are not limited to a single type or level of intervention. From this perspective, we appreciate that it is not drug-specific information in and of itself that constitutes the problem, but the counterproductive effects that can occur when drug-specific information is presented in the presence or absence of other important mediating influences (including age and/or level of drug experience). Inevitably, many drug-focused interventions will require engagement with drug-specific information, what is vital to understand then, is what other mediating factors interact with drug-specific information to make it more or less likely to encourage drug-taking behaviour.

Developmental skills-based interventions can side-step the knowledge problem, as, in targeting the precursors of drug use rather than drug use itself, these approaches do not necessarily need to refer to drugs explicitly. Consequently, developmental skills-based activities are suitable for use as universal interventions. Another advantage of developmental approaches is the potential they offer for addressing risk factors which impact multiple health risk behaviours, of which illicit drug use is just one. Health risk behaviours tend to cluster and are associated with shared risk and protective factors (ACMD, 2015, UKCPD, 2012). Intervening early to address risk and protective factors common to a variety of risk behaviours has clear benefits. However, connecting general health and well-being activities with later drug-related outcomes can be extremely challenging (ACMD, 2015).

The turn toward a developmental perspective has been accompanied by an increasing emphasis on intervention aimed at younger age groups within drug policy (HM Government, 2008; 2010; 2017). Examples from UK drug strategy include support for midwives, local authorities and schools to improve the health and well-being of infants and young children before typical ages of drug initiation.

While approaches targeted at younger ages might side-step the knowledge problem, developmental approaches engaging with young people who are likely to encounter drugs may need to refer to drugs explicitly if they are to offer young people the best support. Even if these approaches continue to retain a focus on general life skills (e.g. problem-solving, decision making, social competence, communication, managing emotions) they may also engage with drug-focused components (e.g. social influence, drug refusal skills, drug education). Reviewing the evidence-base it was not always clear whether skills-based approaches were intended for young people expected to encounter drugs, or indeed if generic skill components were part of a wider drug-focused intervention. This is important because drug-focused interventions and general developmental interventions, despite sharing the same overarching health and well-being goals, may have differing objectives. While general developmental approaches seek to influence risk and protective factors such that young people are less likely to be exposed to drug promoting influences, drug-focused interventions are required to help young people navigate within environments in which drug use is encountered. The skills which help young people avoid high-risk contexts in the first place may not be the same as the skills which help young people navigate contexts in which drug use is encouraged, and these skills may be different again to the harm-reduction skills required by young people already engaging in drug use. It is important to understand which skills, in which contexts, are the most effective for supporting healthy outcomes.

As this project is interested in drug interventions with a view to assessing their appropriateness for use with NPS, developmental interventions targeting generic risk factors of substance use are less directly relevant, as they are unlikely to need adaptation to accommodate specific NPS-related issues. Even for drug-focused skills-based interventions aimed at young people first encountering drug use, it seems unlikely that the competencies being taught will need adaptation to address NPS especially (e.g. social competence and drug refusal skills), however, drug knowledge components may require adaptation to include relevant NPS information alongside the other substances targeted.

It is of interest to note the strong emphasis placed on developmental approaches within policy, guidelines and the evidence base, as perhaps, to some extent, this explains why the prevailing recommendation for NPS-based approaches is not to implement specific NPS interventions but to adapt existing drug-focused interventions to include NPS. In regard to existing developmental approaches targeting multiple substances, adaptation and inclusion of age-appropriate NPS knowledge may be a suitable course of action.

*Evidence-base*While the intervention evidence base is informative, the evidence remains more limited than necessary as many studies do not specify which principles or components were used. In some cases, broad associations can still be made, for example, whole-schools approaches were associated with positive outcomes, but without further description of a presumed mechanism of action it is not possible to link positive outcomes with specific pathways (e.g. changes to policies, norms, pupil attachment, truancy levels, mentoring programs etc.). Although to some extent this is a consequence of reporting where the information available in primary studies is not reported at review level (Jepson et. al., 2006), however, some reviewers did note a lack of specificity within the studies (e.g. Brotherhood et. al., 2013, Novakovic et. al., 2016).

The situation could be significantly improved by the use of theory in intervention development (EMCDDA, 2012). By specifying intervention concepts and elements and describing the proposed relationships between the theoretical models clarify assumptions about *what* works and *why*. Grounding interventions in theory not only improves their effectiveness but also improves the quality of the evidence base, ideally creating a positive cycle of continued intervention improvement. Within the evidence base interventions linked to a solid theoretical basis have been found to be more effective (Brotherhood et al., 2013; UNODC, 2018) and the EDPQS strongly advocated the use of theory in all interventions (EMCDDA; 2010; 2011).

Although the EPDQS do not advocate for use of a particular theory, as a starting point they do highlight social cognitive theories. Theories reportedly used within the review evidence base were social learning theories, social cognitive theories and stages of change models (Brotherhood et al., 2013; Jepson & Jepson, 2010; Jepson et. al., 2006). However, the small number of interventions mentioning theoretical approaches prevents an assessment of their relative efficacy of illicit drug use (Jepson et. al., 2006).

### Strengths and limitations of the review

By adopting a pragmatic approach centred on the guidelines published by leading organisations within the drug prevention field the findings of this review are strongly rooted in evidence and issues most relevant to those interested in NPS intervention development. However, as a result, the evidence reviewed is not exhaustive, and several effective intervention approaches are likely to have been excluded, particularly those which may be less conventional or more recent. In this way, the review findings offer little counterpoint to dominant mainstream approaches and therefore run the risk of continuing to perpetuate common biases with the field.

As a result of this pragmatic approach, the summary of the evidence is based on a heterogeneous set of materials at differing levels of analysis (largely reviews and reviews of reviews). Consequently, some of the findings presented are unevenly weighted with the finding of small-scale reviews overrepresented in comparison to larger scale reviews. As the aim was to provide a broad overview of common interventions this imbalance has been tolerated in favour of coverage, but caution is advised when drawing conclusions from the data tables.

Given the breadth and heterogeneity of interventions included in has not been possible to examine any particular intervention approach in great depth. Similarly, the reliance on data sources once or twice removed from the primary studies means the review is limited in the extent to which it can provide detailed evidence regarding a particular intervention component or group of young people.

Without more detailed analysis of primary studies, the review is reliant on the labels applied in review studies, and the degree of variation in the content of component labels is unknown. Broad categories such as general skills-based approaches do not always allow distinction between effective and ineffective elements. Similarly, the same label can include a variety of delivery modes, settings, knowledge domains, which may account for some of the conflicting findings as important influences may unaccounted for. For example, non-judgemental delivery appears to be an important factor, but one that is rarely reported.

The lack of detail also means the differential effects of components on different sub-groups was not apparent, with reviewers noting that data allowing sub-group analysis were rarely reported (Brotherhood et. al, EMCDDA, 2011; 2013; Jepson & Jepson, 2010). Consideration of the differential effects on sub-groups is important for establishing whether interventions have the potential to reduce inequalities or run the risk of exacerbating them.

This review is interested in young people, but distinguishing studies by age presents a challenge. Reviews typically separate children from adults (e.g 18 and under) and over 18’s are often classed as adults with no further differentiation. Reviewers have noted that isolating data from the 19-25 age group is particularly challenging (Brotherhood, et. al., 2013; Thomas, et. al., 2011). As a result, the majority of the findings of this review are based on children and adolescents.

The heterogeneity of data sources also means there is very likely a large variation in the quality of the primary studies included. As data sources were included based on their relationship to key guidelines; no attempt was made to control for the quality of the primary studies. Although most of the reviews are systematic reviews selected by organisations because of their quality, high-quality reviews can still include poor-quality evidence if that is all that is available. The quality criteria of the reviews were variable, with some deliberately including only evidence of good quality or higher, others collating evidence of an acceptable standard or above, and with some scoping studies not applying quality criteria. It is not clear whether gaps in the evidence base were the result of a lack of any available evidence or a lack of high-quality evidence.

It is also worth noting that there is a significant degree of interrelatedness between the guidelines in so far as they reference each other, collaborate with a number of the same professionals and draw on at least some of the same evidence. Although an attempt was made to exclude review sources with excessive overlap, the extent to which the reviews shared the same primary data was not verified.

The generalisability of findings is unknown, but reviewers have raised doubt about the applicability of the evidence to Europe and the UK as much of the primary data applies to a North American context and many studies are more than a decade old (Brotherhood et. al., 2013). In addition, it is not known how many studies apply to real-world contexts, as it is possible that many were undertaken in controlled contexts.

## Conclusions

Despite a lack of evidence demonstrating the effectiveness of interventions based on traditional illicit drugs when applied to young people’s NPS use, leading drug prevention organisations do not recommend the use of specific NPS-based interventions. In mapping the types and efficacy of existing drug interventions, the findings of this review indicate that for developmental interventions which target general risk factors underlying use of tobacco, alcohol and drugs, use this advice is appropriate. Developmental skill-based approaches appear to make up the bulk of intervention activities in the UK, most of which are universal school-based programmes that may not need to refer to drugs explicitly. Consequently, little or no adaptation would be required to these interventions to ensure coverage of NPS alongside other psychoactive substances.

For young people likely to be exposed to NPS however, the need to explicitly refer to these substances will require that drug-focused information components are revised and developed to include NPS. Given that NPS differ from traditional illicit drugs in important ways, further

research will be required to investigate young people’s relationship with NPS to ensure that NPS-specific information components are relevant and appropriate. When NPS information provision is to form part of an intervention, the findings of this review highlight the importance of ensuring that it is not delivered as a stand-alone element, but as part of a wider strategy carefully targeted at suitable groups. Evidence from the review findings also shows that the efficacy of an NPS-focused intervention is likely to be enhanced if it is part of a combined-skills based approach using interactive delivery methods and implemented in a non-judgemental environment by trained professionals or peer educators.

Other approaches which look particularly promising for use with NPS are multi-component approaches based in health settings and nightlife/entertainment venues. Nightlife/ entertainment settings-based approaches especially appear to offer a constructive way to engage with young people who might use NPS recreationally.

The analysis of guidelines and drug policy conducted in this review also highlighted the importance of ensuring that NPS-focused interventions incorporate the use of theory, pay close attention to interactions with health and social inequalities, and avoid invoking explanations of behaviour or drug use that rest on individual characteristics and neglect the influence of wider societal factors.

# Systematic literature review of reasons why people use or do not use NPS

## Introduction

The purpose of the second part of the literature review is to bring together and analyse evidence from available studies which have examined users’ and potential users’ reasons for using or not using NPS. The aims of this chapter are to provide an overview of what is known, to identify similarities and differences between study findings and consider what insights they offer for intervention development. To achieve this, a systematic review of research published in peer-reviewed journals and reputable sources was conducted to identify the empirical work to contribute to our understanding of why people use or avoid using, NPS.

### Review scope and objectives

Although the focus of this work is young people and NPS, the area of research is not yet sufficiently mature to have a viable set of studies which centre exclusively on this age group. Similarly, in this rapidly developing field, the terminology has yet to settle on agreed conventions for what to call this heterogeneous group of substances. Accordingly, this review takes a broad perspective, including any studies of NPS, legal highs or specific named NPS which address motivations for use in any population. The objectives of the review are to:

1. Provide an overview and summary of studies that have been undertaken which include investigation of people’s reasons for using and/or not using NPS.
2. Map the range and types of reasons highlighted by the studies.
3. Assess whether the reasons found vary according to discernible differences between studies, such as differences in the methodology employed, or differences between the regions, populations or substances under investigation.

## Method

### Search strategy

An initial scoping review was undertaken to determine an appropriate search strategy and suitable inclusion and exclusion criteria. The scoping review revealed that search terminology around NPS is problematic due to the variety and inconsistency of the terms used. On the one hand, generic terms such as ‘legal highs’ tend to exclude key papers that refer to individual named substances such as mephedrone, but on the other hand, a search based on the names of specific NPS was considered unfeasible due to the abundance of chemical compounds classed as NPS. Also, several generic terms such as ‘designer drugs’ were found to be insufficiently specific to capture the phenomena of interest. To strike a balance, several generic search terms were used to identify studies in the first instance, which was followed up by a manual search of the reference lists of the studies identified as relevant to this review. Accordingly, inclusion was not limited to the generic terms, as studies investigating specific substances were included if they were identified by the authors as an NPS / legal high or highlighted within the literature as a key paper (see Table 1). In this way, research on substances such as mephedrone and benzylpiperazine were incorporated from the period when they were considered to central to the issue, but not later periods, when they were no longer deemed to be representative of legal highs.

Once the search terms were determined, a comprehensive search of published literature was undertaken using the bibliographic databases PsychINFO, PsychARTICLES, MEDLINE and Web of Science. A flow diagram of the search process is shown in Figure 4-1.

Figure 4-1. Literature review search process

**Records scanned for relevance**   
Records excluded (N=1487)  
Duplicates removed (N=29)  
Non-relevant papers:  
• General commentary (N=187)   
• Toxicology/Pharmacology (N=1258)  
• Prescription drugs (N=6)  
• Illicit drugs (N=3)  
• Law (N=4)

**Articles assessed for eligibility**

Studies excluded (N=32)

Inaccessible (N= 1)

No data collected (N = 18)

No motives/reasons in outcomes:

• Prevalence only (N=6)   
• Online activity (N=2)   
• Awareness (N=1)  
• Use of drug services (N=1)   
• Type of products (N=2)  
• Subjective effects (N=1)

Check   
relevance

**Search terms**  
legal high\*   
novel psychoactive substance\*  
new psychoactive substance\*  
novel psychoactive compound\*  
new psychoactive compound\*  
emerging psychoactive substance\*  
  
**Sources**  
Databases searched (N = 1524)  
• PsychARTICLES  
• PsychINFO  
• Web of Science  
• MEDLINE  
Other sources (N = 26)  
• Grey literature  
• Bibliographies

**Full-text articles retrieved   
N= 63**

Assess  
Eligibility

**Total number of records  
N = 1550**

**Studies included in review   
N = 31**

Conduct  
search

The search terms shown in Table 4-1 were adapted as appropriate for the conventions of each database, searching for papers which included any of the terms within the keywords, title or abstract. A grey literature search was manually performed focusing on UK Government papers and reports by key drugs charities, local councils and healthcare organisations. The search period included studies conducted prior to the ban of legal highs in May 2016.

**Table 4-1. Search term suitability**

|  |  |
| --- | --- |
| **Optimal search terms** | **Suboptimal search terms** |
|  |  |
| legal high\*  novel psychoactive substance\* new psychoactive substance\* novel psychoactive compound\* new psychoactive compound\* emerging psychoactive substance\* | club drug\* research chemical\* designer drug\*  legal drug\* |
|  |  |

Note: the symbol \* allows for the plural form in addition to the singular form

Once the initial search was conducted, document records were collated, duplicates removed, and abstracts/executive summaries screened for relevance. All relevant papers/reports were then downloaded and stored in the reference management software Mendeley (version 1.19.3), where the full-text articles were assessed according to the inclusion criteria shown in Table 4-2.

### Results

The field of NPS research appears to be growing rapidly, with the majority of research conducted in the most recent five years covered by the review. However, with more than 80% of papers covering the toxicology and pharmacology of NPS and less than 4% reflecting on social or psychological factors, the psycho-social aspects of NPS use appear underrepresented in the literature base.

**Table 4-2. Inclusion and exclusion criteria**

|  |  |  |
| --- | --- | --- |
| **Criteria** | **Inclusion** | **Exclusion** |
| **1.** | Empirical studies, published in a peer-reviewed journal or by a reputable organisation (e.g. charity or local council)  AND | Non-empirical studies such as general commentaries, opinion pieces, theoretical articles etc. and papers published in a non-peer reviewed journal.  OR |
| **2.** | Main focus of paper on use of new psychoactive substances  AND | Main focus on traditional illicit drugs or toxicology, pharmacology or treatment of NPS harms  OR |
| **3.** | Reasons for use cited based on analysis of data collected as part of study  AND | No reasons for use cited or reasons based on assumptions or second hand sources  OR |
| **4.** | Articles published in or translated into English language | Articles published in any other  language without translation |

## Included studies

Thirty-one studies met the inclusion criteria and were included in the review. The majority of the studies were originated from the UK (England, Wales and Northern Ireland) and Ireland (15), 6 studies were conducted in the USA and 4 in New Zealand, while 3 were international in focus and 1 each originated from Australia, Turkey and the Netherlands. Ten studies examined legal highs or NPS, 9 focused on synthetic cannabinoids, 8 on mephedrone, 3 on benzylpiperazine (BZP) and 3 on synthetic cathinones. Most studies incorporated use of a survey or online survey (15), 13 employed an interview or focus group methodology, 4 studies involved analysis of online forums and 2 studies used analysis of patient records. Open-ended questioning was used to elicit responses in 16 studies while 15 used endorsed statements, rating scales or analysis of existing records/information. At the time of study, the majority of substances investigated were not controlled (26), but 5 studies examined use of NPS that had recently been controlled or used samples that incorporated multiple regions across which controls varied. An overview of the main features of each of the studies included in the review is shown in Table 4-3.

**Table 4-3. Studies included in the literature review**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Year** | **Authors** | **Co.** | **Controlled N** | | | **Age** | **Method** | **Population** | **Open-ended** | | **Drug1** |
|  |  |  |  | **substance** | | |  |  | **sampled** | **questioning** | | **type** |
| **1.** | 2007 | Butler & Sheridan | NZL | | No | 58 | 17-23 | Semi-structured interviews | BZP users | | Yes | BZP |
| **2.** | 2009 | Newcombe | ENG | | No | 12 | 18-50 | Interviews / focus groups | Mephedrone users / drug workers | | Yes | MC |
| **3.** | 2009 | Schifano et. al. | EUR | | No | ≈200 | - | Analysis of online forums | Existing drug users | | No | SC |
| **4.** | 2010 | McElrath & O’Neill | NI | | Yes | 23 | 19-51 | Semi-structured interviews | Mephedrone users | | Yes | MC |
| **5.** | 2010 | Measham et. al. | ENG | | No | 2 | 36-38 | Semi-structured Interviews | Mephedrone users | | Yes | MC |
| **6.** | 2010 | Sheridan & Butler | NZL | | No | 58 | 17-23 | Semi structured interviews | BZP users | | Yes | BZP |
| **7.** | 2010 | Winstock et. al. | ENG | | No | 2295 | 18-27 | Online survey | Existing drug users | | No | MC |
| **8.** | 2011 | Carhart-Harris & Nutt | ENG | | No | 1506 | 10-73 | Online survey | Mephedrone users | | Yes | MC |
| **9.** | 2011 | Castellanos et. al. | USA | | No | 11 | M=17.3 | Analysis of patient records | Synthetic cannabinoid users | | No | SC |
| **10.** | 2011 | Every-Palmer | NZL | | No | 15 | M=34 | Semi-structured interviews | Patients with history of psychosis | | Yes | SC |
| **11.** | 2011 | Kelleher et. al. | IRL | | No | 329 | 16-58 | Online survey | Legal high users | | No | LH |
| **12.** | 2011 | McElrath & Van Hout | NI-IRL | | Mixed | 45 | 18-51 | Semi-structured interviews | Mephedrone users | | Yes | MC |
| **13.** | 2011 | Van Hout & Brennan | IRL | | No | 32 | 18-35 | Semi-structured interviews | Legal high users | | Yes | LH |
| **14.** | 2012 | Freeman et al., | ENG | | No | 20 | M=21.6 | Questionnaire | Mephedrone users | | No | LH |
| **15.** | 2012 | Van Hout & Brennan | NI-IRL | | Yes | 22 | 18-35 | Semi structured interviews | Mephedrone users | | Yes | MC |
| **16.** | 2012 | Vandrey et. al. | INT | | No | 168 | 18+ | Online survey | Synthetic cannabinoid users | | No | SC |

**Table 4-3. Studies included in the literature review - continued**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Year** | **Authors** | **Co.** | **Controlled N** | | | **Age** | **Method** | **Population** | **Open-ended** | | **Drug1** |
|  |  |  |  | **substance** | | |  |  | **sampled** | **questioning** | | **type** |
| **17.** | 2013 | Barratt et. al. | AUS | | No | 316 | 23-34 | Online survey | Synthetic cannabinoid users | | Yes | SC |
| 18. | 2013 | Perroine et. al. | USA | | No | 25 | 21 - 50 | Semi-structured interviews | Legal high users | | Yes | SC |
| 19. | 2013 | Wilkins & Sweetur | NZL | | No | ≈2000 | 13-45 | Survey | Random sample of households | | Yes | BZP |
| **20.** | 2014 | Barnard et. al. | ENG | | No | - | M=32 | Online survey & interviews | NPS users & drug workers | | Yes | LH |
| **21.** | 2014 | Bonar et. al. | USA | | No | 396 | M=34.8 | Survey | Existing drug users in treatment | | No | SC |
| **22.** | 2014 | Corazza et. al. | ENG | | No | 446 | 13-30 | Online survey | British students | | No | LH |
| **23.** | 2014 | Johnson & Johnson | USA | | Yes | 113 | 18-40+ | Online survey | Synthetic cathinone users | | No | CH |
| **24.** | 2014 | Norman et al., | ENG | | No | 101 | 16-34 | Online survey / forums | Legal high users | | Yes | LH |
| **25.** | 2014 | Van Hout | INT | | No | 11 | - | Analysis of online forums | Existing drug users | | No | CH |
| **26.** | 2015 | Besli et. al. | TUR | | No | 16 | M=15.4 | Analysis of patient records | Synthetic cannabinoid users | | No | SC |
| **27.** | 2015 | O'Brien et. al. | ENG | | No | 182 | 16-29 | Online survey / forums | NPS users | | Yes | NPS |
| **28.** | 2015 | Rees et. al. | WAL | | No | - | 16-25 | Focus groups | Homeless / at risk young people | | Yes | LH |
| **29.** | 2015 | Van Amsterdam et. al | NLD | | No | 25 | 20-42 | Semi-structured interviews | Existing drug users | | Yes | NPS |
| **30.** | 2016 | Ashrafioun et. al | USA | | Yes | 104 | M=25 | Online survey | Synthetic cannabis users | | Yes | SC |
| **31.** | 2016 | Lauritsen & Rosenburg | USA | | No | 186 | M=33 | Online survey | Synthetic cathinone users | | Yes | CH |
|  |  |  |  | |  |  |  |  |  | |  |  |
| 1. BZP = Benzylpiperazine; LH = Legal highs; MC = Mephedrone; NPS = New psychoactive substances; SC = Synthetic cannabinoids; SH = Synthetic cathinones | | | | | | | | | | | | |

### Extracting reasons for use of NPS

A mapping approach was undertaken to enable a description and comparison of the themes captured within the sample of studies. In the first step the findings of each study were analysed and all reasons that were cited as relevant to the sample under enquiry extracted.

For those studies which employed a method involving endorsed statements, it was necessary to devise a threshold by which reasons for using/not using NPS could be classed as relevant, as the options included within these studies were pre-determined by the authors and therefore might not be representative of the population. Where a descriptive rating had been used (e.g. very important – not at all important), reasons were included when the sample mean was past the mid-point, i.e. on average, participants felt the suggested reason was at least somewhat important to their decision making. When survey-based studies were more ambiguous in their methodology, judgment was guided by the conclusions of the authors as to which reasons were considered significant for the population examined within their study.

Since many reasons extracted from the full sample of studies were closely related in meaning, a set of codes were devised to aid interpretation. Reasons with high semantic relatedness were grouped together under a single code, producing a set of unique reasons for using NPS. For example, the reasons *desire to explore drug effects*, *experimentation* and *curiosity* were all grouped as one unique reason coded as *curiosity*.

The unique reasons were then organised into a smaller number of overarching themes which aimed to capture core dimensions within the set of reasons, whilst retaining important distinctions. For example, whilst *desired stimulant effects* and *pleasurable high* were grouped together under the theme *pleasurable effects* they remained distinguished from *positive social interactions* and *fitting in with friends* which were grouped under the theme *social influences.*

The full set of unique reasons for use and overarching themes are presented in Table 4-4. The proportion of studies in which each unique reason was cited is expressed as a percentage score along with references to the studies of origin. Each theme has also been assigned a percentage score representing the proportion of studies which cited reasons associated with that theme.

To assess whether the reported reasons for NPS use found within the review studies vary according to discernible differences within the sample of studies, the distribution of reason-themes within various sets of studies was also analysed. The results of these analyses are shown in Tables 4-5 to 4-10 in the relevant sections where the findings of the sub-set analyses are presented.

**Table 4-4. Reasons for use of NPS organised by theme**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Theme**  (% of studies with theme)[[1]](#footnote-1) | **Reason for use** (% of studies with reason)[[2]](#footnote-2) | | | **Study of origin reference** (see Table 3) |
|  |  | | |  |
| **Accessibility 67 %** | Easy availability | 67 % |  | [3][4][5][6][8][10][11][12][13][15][17][20][22][24][25][26][27][28][30][31] |
|  | Low cost | 43 % |  | [3][4][8][12][13][15][20][22][24][25][26][28][31] |
|  | Illicit drugs unavailable | 13 % |  | [4][5][12][24] |
|  | Cheaper than illicit drugs | 6 % |  | [17][20] |
|  |  | | |  |
| **Substitution 60 %** | Alternative to illicit drugs | 23 % |  | [10][17][18][24][25][26][30] |
|  | Better quality than illicit drugs | 13 % |  | [7][12][17][13] |
|  | Illicit drugs unavailable | 13 % |  | [4][5][12][24] |
|  | Manage addiction to other drugs | 10 % |  | [6][7][17] |
|  | Better effects than illicit drugs | 7 % |  | [7][17] |
|  | Cheaper than illicit drugs | 7 % |  | [17][20] |
|  | Safer than illicit drugs | 7 % |  | [20][21] |
|  |  | | |  |
| **Pleasurable effects 60 %** | Pleasurable effects / high | 50 % |  | [1][2][3][9][10][11][15][16][17][20][21][22][23][24][30] |
|  | Desired stimulant effects | 10 % |  | [12][23][29] |
|  | Better effects than illicit drugs | 7 % |  | [7][17] |
|  | Desired psychedelic effects | 7 % |  | [29] |
|  |  | | |  |

**Table 4-4. Reasons for use of NPS organised by theme - continued**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Theme**  (% of studies with theme)[[3]](#footnote-3) | **Reason for use** (% of studies with reason)[[4]](#footnote-4) | | | **Study of origin reference** (see Table 3) |
|  |  | | |  |
| **Curiosity 50%** | Curiosity | 43 % |  | [2][11][13][16][17][20][21][23][24][25][27][30][31] |
|  | Attractive packaging | 7 % |  | [3][28] |
|  |  | | |  |
| **Quality reasons 47 %** | Consistency / reliability of effect | 20 % |  | [6][8][10][11][12][13] |
|  | High quality / purity | 17 % |  | [10][14][24][27][28] |
|  | Better quality than illicit | 13 % |  | [7][12][13][17] |
|  | Good reputation / recommended | 13 % |  | [1][14][17][25] |
|  |  | | |  |
| **Legal status 33%** | Because they are legal | 27 % |  | [3][10][12][17][20][22][28][31] |
|  | Avoid legal consequences | 7 % |  | [6][18] |
|  | Avoid exclusion from work | 3 % |  | [18] |
|  | Easier to get into gigs and clubs | 3 % |  | [20] |
|  |  | | |  |
| **Social influences 33%** | Positive social interactions | 23 % |  | [1][12][21][22][29][30][31] |
|  | Fit in with friends | 10 % |  | [11][20][30] |
|  | Social acceptability | 7 % |  | [6][20] |
|  |  | | |  |
| **Avoiding detection 27%** | Not detected in drug tests | 27 % |  | [3][9][10][16][17][18][21][23] |
|  |  | | |  |
| **Safety reasons 23%** | Perceived safety | 17 % |  | [6][10][13][14][28] |
|  | Safer than other drugs | 7 % |  | [20][21] |
|  |  | | |  |
|  |  | | |  |

**Table 4-4. Reasons for use of NPS organised by theme - continued**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Theme**  (% of studies with theme)[[5]](#footnote-5) | **Reason for use** (% of studies with reason)[[6]](#footnote-6) | | | **Study of origin reference** (see Table 3) |
|  |  | | |  |
| **Coping 23%** | Relaxation / stress reduction | 10 % |  | [16][17][21] |
|  | Boredom | 10 % |  | [2][21][24] |
|  | Coping | 7 % |  | [21][28] |
|  | Escapism | 3 % |  | [23] |
|  |  | | |  |
| **Managing drug use 20%** | Ability to maintain control | 13 % |  | [3][12][7][17] |
|  | Manage addiction to other drugs | 10 % |  | [6][17][7] |
|  | Manage effects of other drugs | 7 % |  | [3][21] |
|  |  | | |  |
| **Other reasons 13%** | Addiction | 7 % |  | [2][21] |
|  | Rebellion | 3 % |  | [10] |
|  | Sexual reasons | 3 % |  | [23] |
|  |  | | |  |

### Findings: Prevalence of reasons for use

Thirty studies reported reasons why people used NPS. From this set of studies 146 individual reasons were extracted which were collated into 34 unique reasons for use which were then grouped into 12 themes (see Table 4).

### Accessibility

Accessibility emerged as the theme with the greatest prominence across the full set of studies, being reported in more studies than any other reason for use. Accessibility also demonstrated great consistency across study contexts, receiving the greatest attention within all but one study subcategory (studies conducted outside of the EU). In general, availability appears to be the primary driver of accessibility, but the low cost was also seen as contributing to making NPS more accessible.

Several studies emphasised the importance of understanding the relative nature of the choices people make, and how accessibility-based reasons are intimately interwoven with the accessibility and quality of other drugs (McElrath & O'Neill, 2010; Measham et. al, 2010; McElrath & Van Hout, 2011; Van Hout & Brennan, 2011; 12; Barratt et. al., 2013; Barnard et. al., 2014; Norman et. al., 2014; Van Hout, 2014). Users have been found to turn to NPS when other, preferred, drugs are unavailable (McElrath & O'Neill, 2010; Measham et. al, 2010; McElrath & Van Hout, 2011; Van Hout & Brennan, 2011; 12; Barratt et. al., 2013; Barnard et. al., 2014; Norman et. al., 2014; Van Hout, 2014) or when the quality of traditional drugs noticeably drops (Measham et. al, 2010; Winstock et. al., 2010; McElrath & Van Hout, 2011; Van Hout & Brennan, 2011; 2012). However, when the quality of traditional drugs and NPS were reasonably comparable, the convenience of the easy availability of NPS was seen to increase in appeal (Measham, 2010; Van Hout & Brennan, 2011).

Ease of access was linked with social networks, headshops and online retailers to different degrees in different contexts. The importance of social networks for access to NPS was noted in several studies, with many users preferring to obtain NPS from friends or known dealers, even for substances that were legally available and cheaper via retailers (McElrath & O’Neill, 2011). Although this was said to reflect the spontaneity of NPS use when people were offered NPS by friends (McElrath & O’Neill, 2011), some users also expressed a lack of desire to use headshops or online retailers (McElrath & O’Neill, 2011; Van Hout & Brennan 2011). According to McElrath & O’Neill (2011), the reluctance to use high street shops and websites was, for some mephedrone users, a way to avoid the stigma of a drug user identity by not being associated with headshops or having a record of their transactions on statements or credit card bills.

For other NPS users, headshops appeared to be an important source of NPS, particularly for younger or novice users without connections with established drug-using subcultures or dealers (Sheridan & Butler, 2010; McElrath & O’Neill, 2011; 2014; Measham, 2016). For others motivated by a desire to avoid the black market or the stigma associated with illicit drug use, legally sourced NPS from headshops added a degree of social respectability (Van Hout & Brennan, 2011; Barnard et. al., 2014).

In terms of substances, while mephedrone-based studies noted users were less likely to use headshops, those examining the broader category of ‘legal highs’ noted that users more commonly used headshops as a source, although, to some extent, the connection might be explained by age as younger users were seen to be both more likely to report use of legal highs ( Barnard et al., 2014; Rees et al., 2015; Van Hout & Brennan, 2011) and more likely to rely on over the counter sales (Butler & Sheridan, 2007; Sheridan & Butler, 2010; Van Hout & Brennan, 2011).

Unsurprisingly, the three studies that involved analysis of online NPS-related communities connected ease of availability with online retailers, with members of online communities preferring to use internet-based sources, placing value on the ease of online purchasing and the fast, often next day delivery services (O'Brien et. al., 2015; Schifano et al., 2009; Van Hout, 2014). Although for individual users, the availability of NPS appears to be more commonly associated with social networks and headshops, online sources are thought to be especially important for the NPS market, with the internet likely to be the original source of many of the NPS available through social networks (Van Hout & Brennan 2011; Van Hout, 2014; Winstock et. al, 2010).

### Substitution

The substitution theme encompassed reasons for using NPS in place of traditional illicit drugs. As already noted, the use of NPS was closely interrelated with factors affecting the use of traditional illicit substances. The use of NPS as an alternative to illicit drugs was overtly reported in the majority of studies reviewed. In addition, most of the remaining studies presented the use of NPS as a substitute for traditional drugs as an assumption, which suggests that the influence of reasons connected to factors affecting the illicit drug market are highly significant for understanding why many people use NPS (Carhart-Harris & Nutt, 2011; Corazza et. al., 2014; Johnson & Johnson, 2014; Kelleher et al., 2011; Newcombe, 2009; O'Brien et. al., 2015; Rees et. al., 2015; van Amsterdam et. al., 2015; Lauritsen & Rosenberg, 2016).

Within the substitution theme, people’s reasons for using NPS instead of traditional drugs related to several of the other core themes found, including accessibility, pleasure, quality, safety and management of drug use. When NPS were seen as easier or cheaper to get hold of, their quality, effects, or safety were perceived as better, and their addictiveness as lower, then NPS were favoured over traditional illicit drugs.

The relative availability of traditional illicit drugs appeared to be a particularly important driver of NPS use, as did the relative quality of NPS. Although some NPS, most notably mephedrone, seemed to be a drug of choice, many users appeared to prefer traditional substances such as ecstasy and cocaine but chose legal highs as a result of the poor quality or lack of availability of street drugs (McElrath & O'Neill, 2010; Measham et. al, 2010; McElrath & Van Hout, 2011; Van Hout & Brennan, 2011; 12). Preferences appeared to be based on not just the psychoactive effects of substances, but also the consistency of the product, which was often perceived to be greater for branded legal highs (McElrath & O'Neill, 2010; McElrath & Van Hout, 2011; Van Hout & Brennan, 2011; 12). One notable exception was synthetic cannabinoids, which were not necessarily chosen for reasons relating to relative quality or availability, but for their legality and ability to evade drug tests (Barratt et. al., 2013; Bonar et. al., 2014; Every-Palmer, 2011; Hammersley, 2010; Lauritsen & Rosenberg, 2016; Palamar & Barratt, 2016; Perrone et. al., 2013; Vandrey et. al, 2012).

### Pleasurable effects

The pleasurable effects of NPS were also found to be a primary driver of NPS use, reported as a reason for use in more than half of the studies reviewed, with greater consistency across study contexts than any other reason. Pleasurable effects generally focused on pleasurable euphoric feelings (Ashrafioun et. al., 2016; McElrath & Van Hout, 2011; Newcombe, 2009; Norman et. al., 2014; Van Hout & Brennan, 2011; 2012;) a stimulating buzz (Butler & Sheridan, 2007; Johnson & Johnson, 2014), psychedelic experiences (Johnson & Johnson, 2014; van Amsterdam et. al., 2015) or relaxation (Bonar et. al., 2014; Vandrey et. al, 2012). While a pleasurable high was associated with all drug types, benzylpiperazine was linked with a stimulating buzz, synthetic cannabinoids with relaxation, and synthetic cathinones were associated with euphoria, psychedelic experiences and stimulation.

### Quality reasons

The perceived quality of NPS appeared to be an important factor in a significant proportion of the studies reviewed. Quality was most commonly related to consistency, with users appreciating the reliability of a consistent product (Carhart-Harris & Nutt, 2011; Every-Palmer, 2011; Kelleher et al., 2011; McElrath & Van Hout, 2011; Norman et. al., 2014; Van Hout & Brennan, 2011). Quality was also related to purity, both the high purity of NPS products (Every-Palmer, 2011; Freeman et. al., 2012; O'Brien et. al., 2015) and their purity relative to traditional illicit drugs (Van Hout & Brennan, 2011). While the quality of NPS appeared to be reasonably important to recreational drug users, it was less commonly reported as a reason for use by problem-drug users, particularly of synthetic cannabinoids (Besli et al., 2015; Bonar et al., 2014; Castellanos et al., 2011; Lauritsen & Rosenberg, 2016; Perrone et. al., 2013; Schifano et al., 2009). Note that the terms problem-drug and problem-drug user are used to refer to the problematic use of drugs which may be due the drug itself, the circumstances of the user, or how the drug is used. For a more in-depth discussion of the issues around the terminology of problematic drug use see literature review Part I.

### Curiosity

Curiosity was cited as a reason for use in half of the studies reviewed. Curiosity was either presented as a reason in and of itself (Ashrafioun et. al., 2016; Barnard et. al., 2014; Bonar et. al., 2014; Johnson & Johnson, 2014;Kelleher et al., 2011; Norman et. al., 2014; O'Brien et. al., 2015; Schifano et al., 2009; Vandrey et. al, 2012; Van Hout & Brennan, 2011; Van Hout, 2014) or as curiosity about the similarity of synthetic cannabinoids to cannabis (Barratt et. al., 2013; Lauritsen & Rosenberg, 2016). Curiosity was linked to the alluring names and colourful packaging of NPS which was thought to be especially appealing to young people (Rees et. al, 2015; Schifano et al., 2009). Curiosity was also reported to be more relevant within studies sampling recreational users than those which sampled problem-drug users.

Curiosity appeared to be related to initiation of NPS use (Barratt et. al., 2013; Newcombe, 2009) and was commonly found in studies examining the use of legal highs/NPS but appeared not to be as relevant within studies looking at more specific drug categories such as mephedrone, benzylpiperazine, synthetic cannabinoids and synthetic cathinones. This may reflect the experience level of the populations, as studies aimed at experienced drug users tended to target specific drug types, while studies focused on legal highs/NPS may have incorporated more novice users with higher rates of drug initiation.

### Legal status

Legal reasons for use of NPS were cited in about one-third of the studies reviewed. In the majority of these studies, legality was presented as a reason in and of itself, although a few studies were more specific. Participants who used NPS for legal reasons were motivated to avoid a criminal record, legal penalties and exclusion from treatment or employment (Perrone et. al., 2013; Sheridan & Butler, 2010). For other users, the legal status of NPS was appealing as they thought they could take NPS into clubs and gigs easily (Barnard et. al., 2014). Legal reasons were found to be most relevant within samples of problem-drug users (Barratt et. al., 2013; Every-Palmer, 2011; Perrone et. al., 2013; Rees et. al., 2015). Problem-drug users appeared to place a high priority on legal reasons, unlike recreational users for whom legal reasons did not seem to be of primary importance (McElrath & O'Neill, 2010; Measham, 2010;). Similarly, legal status also emerged as particularly relevant for users of synthetic cannabinoids, many users preferring cannabis but choosing to use a non-prohibited alternative for legal reasons (Barratt et. al., 2013; Perrone et. al., 2013). Although studies of recreational users did not generally emphasise the importance of legal reasons, a few authors noted that some recreational users appeared to value the legal status of NPS, as legal status offered some measure of protection and distance from stigmatising drug user identities (McElrath & O’Neill, 2011; Van Hout & Brennan, 2011).

### Social influences

About a third of the studies noted the relevance of social reasons for use of NPS. Users wanted to fit in with friends and siblings, both in response to a desire to share a good time with friends or to avoid social rejection (Ashrafioun et. al., 2016; Barnard et. al., 2014; Bonar et. al., 2014; Kelleher et al., 2011). NPS were seen as a way to enhance positive social experiences by making people feel more confident, outgoing, chatty and connected (Bonar et. al., 2014; Butler & Sheridan, 2007; Lauritsen & Rosenberg, 2016; McElrath & Van Hout, 2011; van Amsterdam et. al., 2015;), particularly at parties (Ashrafioun et. al., 2016) and when using synthetic stimulants and empathogens (Ashrafioun et. al., 2016; Butler & Sheridan, 2007; McElrath & Van Hout, 2011; Sheridan & Butler, 2010). For some users, NPS were seen as more socially acceptable due to the reduced stigma associated with legally available substances (Barnard et. al., 2014; McElrath & Van Hout, 2011; Sheridan & Butler, 2010).

### Safety reasons

The use of NPS was linked with perceptions of safety in less than a quarter of the studies reviewed. Safety beliefs were explicitly linked to legal status in four studies: two research papers from New Zealand, investigating the use of benzylpiperazine (Sheridan & Butler, 2010) and synthetic cannabinoids (Every-Palmer, 2011) and two area assessments relating to use of legal highs, a local needs assessment for Buckinghamshire County Council (Barnard et. al., 2014), and an enquiry by the National Assembly for Wales (Rees et. al., 2015).

In their interviews with young people Sheridan and Butler (2010) found that users of benzylpiperazine typically thought it was safe because it was legal, with some users assuming that as it was legally available it had been tested and regulated (Sheridan & Butler, 2010). Similarly, the studies looking at legal highs also found a propensity for people to assume that legal high products were safe because they were legal and readily available and that this was particularly true for novice users (Barnard; 2014, Rees et. al., 2015). Users of synthetic cannabis were also found to connect legal status with perceptions of safety in the study conducted by Every-Palmer (2011), although to some extent assumptions about safety were driven by marketing, as several users believed that products advertised as organic were natural and therefore safe. In contrast to studies which highlighted connections between young or novice users and perceptions of safety, studies focused on more experienced drug users reported that they tended not to think of NPS as safe (Corazza et. al., 2014; Norman et. al., 2014) noting that many users understood that legal status was no guarantee of safety (McElrath & O’Neill, 2011) nor was marketing to be trusted (Van Hout & Brennan, 2011).

Although users widely ignored marketing and instructions on packets, often due to the contradictory labelling of ‘not for human consumption’ (Van Hout & Brennan, 2011), the response to the distrust of usage instructions appeared to be mediated by the level of drug-taking experience. More experienced drug users appeared to be aware that NPS could be higher in potency than traditional street drugs and were described as taking care to judge dosing, and more likely to employ harm reduction practices such as gauging and use of test kits (O'Brien et. al., 2015; Van Hout & Brennan, 2011; Van Hout, 2014). In contrast, younger, less experienced users were reported to be more reckless, with some intentionally exceeding recommended doses based on the belief that legal status implied lower potency (Rees et. al., 2015; Sheridan & Butler, 2010;). Despite pervasive distrust of packaging instructions, branded products were often viewed by experienced drug users as safer, not by virtue of their legitimacy, but on account of the greater purity and consistency of unadulterated branded products (Van Hout & Brennan, 2011). Safety in this context was presented as relative to traditional illicit drugs, the purity of which was considered by many to have dropped to unacceptably low levels, positioning NPS as a safer option (McElrath & O’Neill, 2011).

For users engaging with online communities, safety was associated with use of online retailers by virtue of customer ratings and feedback systems as well as the high level of information sharing within NPS-related forums and websites (O'Brien et. al., 2015; Schifano et al., 2009; Van Hout, 2014).

### Coping

The therapeutic effects of NPS were cited as a reason for use in seven studies. For participants in some studies, taking NPS was reported as a way to relax and find relief from stress, anxiety, insomnia or pain (Barratt et. al., 2013; Bonar et. al., 2014; Vandrey et. al, 2012), while for others it was a way to cope by escaping from frustration and problems (Bonar et. al., 2014; Rees et. al., 2015) and feelings of boredom (Bonar et. al., 2014; Newcombe, 2009; Norman et. al., 2014). Boredom and the desire to relax was noted to be linked with drug initiation (Barratt et. al., 2013; Newcombe, 2009), while use of NPS as a coping mechanism seemed to be associated with on-going use of NPS and problem-drug use (Bonar et. al., 2014; Rees et. al., 2015). For problem-drug users, NPS appeared to be a way to cope with mental health problems, homelessness, poverty and unemployment by offering a way to forget life (Rees et. al., 2015).

### Managing drug use

NPS were also used as a way of managing drug use, ether to enhance the effects of other drugs (Bonar et. al., 2014; Schifano et al., 2009), to reduce or manage addiction to other drugs (Barratt et. al., 2013; Winstock et. al., 2010) or to maintain physical control (McElrath & Van Hout, 2011; Sheridan & Butler, 2010). The use of NPS to manage drug use was linked to perceptions of NPS being weaker and more consistent in strength and quality. Being able to maintain control was seen as being important to some users, particularly in public or semi-public places (McElrath & Van Hout, 2011). Reasons related to the management of drug use were generally associated with experienced drug users.

### Avoiding detection

The use of NPS as a way to avoid a positive result in drug testing was noted in eight studies. Due to their novelty, many drug tests do not screen for NPS, making them an attractive choice for many users within studies. The majority of studies which reported motives to evade positive drug tests incorporated samples of problem-drug users (Barratt et. al., 2013; Bonar et. al., 2014; Castellanos et. al., 2011; Every-Palmer, 2011; Perrone et. al., 2013) while all but one focused on the use of synthetic cannabinoids (Johnson & Johnson, 2014). The desire to avoid a positive drug test appeared to be linked with context, as a number of the problem-drug user samples were drawn from treatment settings where mandatory drug testing may be typical. In addition, a significant proportion of the studies examining use of synthetic cannabis were conducted in the USA, a cultural context in which drug testing as a legal or organisational requirement is more commonplace than in Europe and the UK (Bonar et. al., 2014; Castellanos et. al., 2011; Lauritsen & Rosenberg, 2016; Perrone et. al., 2013).

### Potential moderators

Factors determined as suitable for making comparisons within the sample of studies were age, nationality, type of drug, type of user and study methodology.

### Age (see Table 5)

While 7 studies focused exclusively on young people, the majority included young people within their samples, and only 1 study was limited to interviews with adults (n=2; Measham, 2010). For the studies sampling young people (age range approximately 14-25), the salience of perceptions of safely as a reason for use was noticeably greater when compared with other studies which also included older ages within their samples (Freeman et. al., 2012; Rees et. al., 2015; Sheridan & Butler, 2010). While perceptions of safety were cited as a reason for use in 43% of studies sampling young people exclusively, it was found to be an important reason in only 5% of studies that included older users within their samples.

**Table 4-5. Most commonly cited reasons for use by age range**

|  |  |  |  |
| --- | --- | --- | --- |
| **Age range** | **Reason for use** | | **Number of studies** |
|  |  | | % reporting reason |
| **Young people only** | |  | **n 7 Studies** |
|  | Quality | | 71% |
|  | Substitution | | 43 % |
|  | Safety | | 43 % |
|  | Accessibility | | 43 % |
|  | Pleasure n | | 29 % |
| **Adults (inc. young people)** | |  | **n 21 Studies** |
|  | Accessibility | | 71 % |
|  | Pleasure | | 62 % |
|  | Curiosity | | 57 % |
|  | Substitution | | 57 % |
|  | Quality n | | 38 % |

### Regional differences (see Table 4-6)

The distribution of reasons found in the UK studies shared a similar profile to those conducted in Europe (excluding the UK) which is in line with evidence that the UK and European NPS markets are highly interconnected (EMCDDA, 2018). In contrast, the most commonly reported reasons for use in the studies conducted outside of Europe and the UK differed noticeably. For UK based studies, drug-testing concerns and legal status appeared to be of little relevance, whereas for studies conducted predominantly in the USA, Australia and New Zealand, avoiding positive drug tests and legal penalties were reported as primary motives for the use of NPS.

**Table 4-6. Most commonly cited reasons for use by country**

|  |  |  |
| --- | --- | --- |
| **Country/region** | **Reason for use** | **Number of studies** |
|  |  | % reporting reason |
| **United Kingdom** |  | **n 10 Studies** |
|  | Accessibility | 70 % |
|  | Quality | 60 % |
|  | Curiosity | 50 % |
|  | Substitution | 40 % |
|  | Pleasure | 40 % |
| **Rest of Europe** |  | **n 8 Studies** |
|  | Accessibility | 88 % |
|  | Substitution | 63 % |
|  | Pleasure | 50 % |
|  | Quality | 38% |
|  | Curiosity n | 38 % |
| **Non-EU** | | **n 11 Studies** |
|  | Pleasure | 73 % |
|  | Not detected in drug tests | 64 % |
|  | Substitution | 64 % |
|  | Curiosity | 55 % |
|  | Legal reasons n | 45 % |

### Type of substance (see Table 4-7)

There were 8 studies included in this review that focused on use of legal highs and NPS more generally, rather than specific named substances. Of these studies, 5 were based in the UK (Barnard et. al., 2014; Corazza et. al., 2014; Norman et. al., 2014; O'Brien et. al., 2015; Rees et. al., 2015), 2 in the Republic of Ireland (Kelleher et al., 2011; Van Hout & Brennan, 2011) and 1 in the Netherlands (van Amsterdam et. al., 2015). Each of the studies included young people within their samples but only one focused specifically on young people. Compared to the overall sample, within the studies that examined the broad category of legal highs/NPS rather than specific substances, the salience of safety perceptions as a reason for use appeared greater. In addition, users of legal highs/NPS were more likely to cite curiosity as a reason for use, which appeared to reflect the greater inclusion of drug-naïve users within the samples of studies asking questions about these groups of substances.

In contrast, studies exploring people’s reasons for using specific types of NPS, such as synthetic cannabinoids and cathinones, did not highlight safety reasons or curiosity as especially important. Users of synthetic cannabinoids were found to prioritise the desire to avoid a positive drug test and legal reasons more than users of other substances, which as noted previously appears to be linked to problem-drug use in settings where drug testing is more common. For users of synthetic stimulants and empathogens, social reasons seemed to be most relevant, which reflects the social contexts of use typically associated with these substances (Ashrafioun et. al., 2016; Butler & Sheridan, 2007; McElrath & Van Hout, 2011; Sheridan & Butler, 2010).

**Table 4-7. Most commonly cited reasons for use by substance type**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | |  |
| **Type of substance** | **Reason for use** | | **Number of studies** |
|  |  | | % reporting reason |
| **Legal highs/ NPS** | |  | **n 8 Studies** |
|  | Accessibility | | 88 % |
|  | Curiosity | | 75 % |
|  | Quality | | 63 % |
|  | Pleasure | | 50 % |
|  | Safety n | | 38 % |
| **Synthetic stimulants/empathogens** | |  | **n 13 Studies** |
|  | Accessibility | | 62 % |
|  | Quality | | 54 % |
|  | Substitution | | 54 % |
|  | Pleasure | | 46 % |
|  | Positive social interactions n | | 38 % |
| **Synthetic cannabinoids** | |  | **n 9 Studies** |
|  | Not detected in drug tests | | 78 % |
|  | Substitution | | 78 % |
|  | Pleasure | | 67 % |
|  | Legal reasons | | 56 % |
|  | Accessibility n | | 56 % |

### Type of use(r) (see Table 4-8)

The majority of studies included in the review sampled populations in which NPS use was presented as recreational in nature. As noted previously, for recreational users, accessibility appeared to be of primary importance. Also found to be particularly relevant for explaining recreational use of NPS was curiosity, pleasure, substitution for traditional illicit drugs and quality-based reasons. In comparison, problem-drug users appeared to be less commonly motivated by curiosity and quality-based reasons, with legal reasons and the ability of NPS to evade drug testing more frequently noted.

**Table 4-8. Most commonly cited reasons for use by type of drug use/user type**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Type of use/r** | **Reason for use** | | **Number of studies** | |
|  |  | | % reporting reason | |
| **Recreational drug users** | |  | | **n 24 Studies** |
|  | Accessibility | | | 70 % |
|  | Curiosity | | | 54 % |
|  | Pleasure | | | 54 % |
|  | Substitution | | | 50 % |
|  | Quality n | | | 46 % |
| **Problem drug users** | |  | | **n 7 Studies** |
|  | Not detected in drug tests | | | 71 % |
|  | Substitution | | | 71 % |
|  | Pleasure | | | 57 % |
|  | Legal reasons | | | 57 % |
|  | Accessibility n | | | 57 % |

### Methodological differences (see Tables 4-9 and 4-10)

The full set of studies employed a range of methodologies, between which few variables could be compared directly, although general comparisons could be made between those using open-ended questioning (n=16) and those using closed questions or analysis of pre-existing data (n=15) as well as studies using small samples (n=16) and large samples (n=15).

As methods utilising closed questions were typically devised by drawing upon factors known to be relevant to use of traditional illicit drugs, open-ended questioning provided an opportunity for any reasons unique to the context of NPS to emerge. Generally, the findings of both open-ended and closed questions were similar, noting the importance of accessibility, pleasure, quality and the use of NPS as a substitute for traditional drugs. However, while open-ended questioning also emphasised the relevance of legal reasons, closed questions highlighted the significance of curiosity as a motivation for use.

**Table 4-9. Most commonly cited reasons for use type of question**

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of questioning** | **Reason for use** | | **Number of studies** |
|  |  | | % reporting reason |
| **Open-ended questioning** | |  | **n 16 Studies** |
|  | Accessibility | | 75 % |
|  | Substitution | | 56 % |
|  | Quality | | 50 % |
|  | Pleasure | | 50 % |
|  | Legal reasons  n | | 44 % |
| **Closed questioning** | |  | **n 15 Studies** |
|  | Curiosity | | 67 % |
|  | Accessibility | | 60 % |
|  | Pleasure | | 60 % |
|  | Substitution | | 53 % |
|  | Quality n | | 40 % |

**Table 4-10. Most commonly cited reasons for use by sample size**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sample size** | **Reason for use** | | **Number of studies** |
|  |  | | % reporting reason |
| **Large sample** | |  | **n 15 Studies** |
|  | Curiosity | | 80 % |
|  | Accessibility | | 73 % |
|  | Pleasure | | 67 % |
|  | Substitution | | 53 % |
|  | Quality n | | 40 % |
| **Small samples** | |  | **n 16 Studies** |
|  | Accessibility | | 63 % |
|  | Substitution | | 56 % |
|  | Quality | | 50 % |
|  | Pleasure | | 44 % |
|  | Legal reasons n | | 31 % |

Although this might indicate legality is a uniquely important reason for NPS use compared to the use of traditional drugs, it seems likely that the emphasis on legal status found through open-ended questioning is an artefact of the use of open-ended questions in the small-scale studies sampling problem-drug users for whom legal status was particularly important. In other words, legal reasons may be uniquely important to users of NPS, but their significance may be limited to specific contexts or a minority of users.

### Findings: Prevalence of reasons for not using NPS

Of the 31 studies identified in this review, 10 studies reported reasons why people did not, or might not, use NPS. From this set of studies 24 individual reasons were extracted which were collated into 14 unique reasons for avoiding NPS use, which were then grouped into 6 themes (see Table 4-11).

Compared with reasons reported for why people used NPS, relatively few reasons were reported for why people might not use NPS. With most studies using samples for which the inclusion criteria were recent or active use of NPS, there was a natural emphasis on why participants chose to use NPS, rather than abstain from use. In addition, where the disadvantages of NPS use were explored, they tended to remain limited to the listing of negative symptoms associated with use; such as anxiety, heart palpitations and headaches. Given that there was generally no record of whether negative symptoms resulted in users reducing their use or stopping, descriptions of physical symptoms were not included as reasons against use. Reasons for non-use of NPS were included when they were presented as a belief or attitude thought to reduce the likelihood of NPS use.

**Table 4-11. Reasons for not using NPS organised by theme**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Theme**  (% of studies with theme)[[7]](#footnote-7) | **Reason for non-use**  (% of studies with reason)[[8]](#footnote-8) | | | **Study of origin reference**  (see Table 3) |
|  |  | | |  |
| **Risk perceptions 80%** | Risk perceptions / dangerous | 40 % |  | [6][18][19][29] |
|  | Unknown ingredients | 30 % |  | [20][14][28] |
|  | More dangerous than illicit drugs | 10 % |  | [7] |
|  | Seeing others’ bad experiences | 10 % |  | [20] |
|  |  | | |  |
| **Unpleasant effects 60 %** | Unpleasant experience | 40 % |  | [6][18][19][29] |
|  | More unpleasant than illicit drugs | 20 % |  | [1][11] |
|  |  | | |  |
| **Social influences 30 %** | Family responsibilities | 10 % |  | [19] |
|  | Negative social interactions | 10 % |  | [29] |
|  | Taking NPS is uncool | 10 % |  | [6] |
|  |  | | |  |
| **Substitution 30 %** | More dangerous than illicit drugs | 9 % |  | [7] |
|  | More unpleasant than illicit drugs | 18 % |  | [1][11] |
|  |  | | |  |
| **Accessibility 20 %** | Not wanting to use a dealer | 9 % |  | [14] |
|  | Unavailable | 9 % |  | [19] |
|  |  | | |  |
| **Legal status 10 %** | Substance now illegal | 20 % |  | [19] |
|  |  | | |  |

### Risk perceptions

The most common reasons related to perceptions of health risk were the beliefs that NPS are dangerous (Sheridan & Butler, 2010; Perrone et. al., 2013; Wilkins & Sweetur, 2013; van Amsterdam et. al., 2015) or are more dangerous than traditional street drugs (Winstock et. al., 2010). Danger was linked to the unknown nature of the ingredients products may contain (Barnard et al., 2014; Freeman et al., 2012; Rees et al., 2015) their strength and purity and the increased risk of overdose (Sheridan & Butler, 2010).

### Unpleasant effects

Half of the studies which cited reasons for non-use reported the relevance of unpleasant effects associated with use (Butler & Sheridan, 2007; Perrone et. al., 2013; Wilkins & Sweetur, 2013; van Amsterdam et. al., 2015), one of which noted the relative nature of unpleasantness compared to traditional illicit drugs (Butler & Sheridan, 2007; Kelleher et al., 2011).

### Social influences

Social reasons for non-use included negative social interactions such as withdrawing inside oneself or ‘ego-tripping’ (van Amsterdam et. al., 2015), having family responsibilities such as childcare (Wilkins & Sweetur, 2013), and the belief that use of mainstream legal drugs is uncool (Sheridan & Butler, 2010).

### Substitution

In two of the ten studies, participants reported use of traditional illicit drugs instead of NPS as they believed the traditional alternative to be safer or more pleasant to use than the legally available alternative (Butler & Sheridan, 2007; Kelleher et al., 2011; Winstock et. al., 2010).

### Accessibility

Accessibility reasons included not being able to get hold of NPS following the imposition of controls (Wilkins & Sweetur, 2013), or not wanting to engage with the black market (Freeman et al., 2012).

### Legal reasons

For some users, a change from legal to illegal status was a deterrent to use, as was found in a New Zealand based household survey which included questions about peoples’ use of the stimulant drug BZP (Wilkins & Sweetur, 2013).

### Discussion

This chapter set out to assess what insights could be drawn about people’s reasons for using (and not using) NPS from a review of the evidence available from peer-reviewed research. To this end, the aims of the review were to provide an overview and summary of the studies able to contribute insight; to map the range of reasons illuminated by the studies and to assess whether differences between studies could shed light on factors liable to influence or affect people’s reasons for use. In this section, the key findings of the review in relation to these aims are summarised before going on to reflect on what the implications of these findings are for intervention development as well as the extent to which the review is likely to provide an accurate reflection of the literature. The chapter concludes with a summary of the key points contributed by this review towards the overarching aims of the thesis.

### Principal findings

Although the field of NPS research appears to be growing rapidly, the psycho-social aspects of NPS use appear underrepresented in the literature base. The literature which does focus on psycho-social factors of NPS use shows good international coverage, and there is strong representation by the UK, USA and Australasia. Of the 31 studies exploring people’s reasons for using (and not using) NPS identified in this review, 10 explicitly focused on the use of legal highs and NPS more broadly, while the remaining 21 focused more narrowly on specific types of NPS. Although all but one study included young people within their samples, relatively few studies focused exclusively on young people. Of those, only one study focused on the use of legal highs/NPS more broadly; an enquiry into legal highs conducted by Rees et al., (2015) for the National Assembly for Wales. However, as the sample appeared to be mainly problem-drug users, the findings may not be generalisable to the wider population of young people in the UK. While a subset of studies investigated the reasons for problem-drug users who used NPS, the majority focused on the reasons of people engaging in recreational use. Most studies were survey or interview-based and examined the motives of experienced drug users. Few studies appeared to include naïve drug users in their samples.

In terms of the findings of the studies, all but one of the 31 studies included reported on the reasons why their sample used NPS, while 10 reported on reasons why they did not use NPS. The most commonly reported reasons for use of NPS were: easy accessibility; as a substitute for traditional illicit drugs; pleasurable effects; curiosity; and perceived quality. The main reported reasons for why people did not use NPS were: people were mainly put off by their dangerous reputation; the unknown nature of the ingredients used in NPS products; and unpleasant effects associated with their use.

While the easy accessibility of NPS was the most prominent reason for use across all of the studies reviewed, the use of NPS as a substitute for traditional illicit drugs was also a very

prominent theme within the studies and was not only connected with easy availability but also with favourable comparisons in relation to effects, quality and price in addition to legal status. Although less salient than accessibility and substitution-based reasons, the desire to use NPS for their pleasurable effects was the reason which demonstrated the most consistency across all study contexts. While not as consistently prominent across the studies, curiosity was also reported as an important reason and appeared to be related to drug initiation. The perceived quality of NPS also appeared to be an important factor in many studies, with recreational users particularly appreciating the reliable consistency of NPS products.

For studies focusing exclusively on young people, the salience of safety as an important reason for use also emerged, and perceptions of safety were also seen to be a more prominent reason for use in studies that examined the use of the broader grouping of legal highs/NPS in comparison to those examining specific named substances such as mephedrone and synthetic cannabis. However, the impact of substance type on perceptions of safety did not appear to be as important as the influence of users age and/or level of experience with drugs.

The importance of legality and the desire to avoid a positive drug test was most strongly associated with problem-drug users of synthetic cannabinoids in studies conducted outside of the EU.

### Implications for intervention development

*Ethical considerations*

In consideration of ethical principles of intervention development, the findings of this review have implications regarding health inequalities and safety concerns. From a health inequalities perspective, the findings offer little insight into the relationship between people’s reasons for using NPS and wider social factors and the drivers of health inequalities. There was insufficient information reported within the studies to be able to distinguish differences in people’s reasons for using NPS as a function of variables pertinent to social inequalities such as socioeconomic or employment status, education levels, gender or ethnicity. However, the clear differences between the motives of problem-drug users and recreational drug users offer an indication that material and/or social deprivation may be an important modifier of people’s reasons for using NPS, as deprivation is a significant risk factor for problem-drug use (ACMD, 1998).

From a safety perspective, there are signs that certain at-risk populations might be neglected within the NPS evidence base; specifically, drug naïve populations, who may be disproportionality represented within populations of young people and children. The findings of this review showed that young/naïve users appear to be particularly at risk of underestimating the health risks associated with NPS use due to the association of legal status with low potency and perceptions of safety.

The relative lack of attention given to young/drug naïve people in NPS focused research is perhaps surprising given the strong emphasis on the need to protect young people which is evident in drug policy and the media (e.g. HM Government, 2010, 2017; BBC, 2012, 2014). The reason for the underrepresentation of young/drug naïve people is likely to be a result of the strong correlations observed between NPS use and use of traditional illicit drugs (e.g. CSEW, 2014/15). The commonly expressed assumption that users of NPS are the same populations as those who use traditional illicit drugs, may have resulted in disproportionate inclusion of experienced drug users in studies of NPS (e.g. ACMD, 2011; HM Government, 2014). Although users of traditional illicit drugs may well be more likely to take up use of NPS, this does not exclude the possibility that other, less drug-experienced groups such as young people are also experimenting with NPS, potentially in more risky ways. Understanding how the profile, motives and attitudes of such users differ from more experienced drug users is potentially an important line of research.

Another safety concern highlighted by the findings of this review is the high potential for negative unintended consequences implied by the pervasive influence of substitution-based reasons. The use of NPS as a substitute for traditional illicit drugs, and vice versa, is a clear indication of market displacement between substances. This indicates the need for interventions to be especially sensitive to factors which may encourage displacement between substances. Given that a variety of factors (availability, price, drug effects, safety perceptions, quality and legal status) were associated with substitution, the potential for displacement is worthy of careful consideration.

*Intervention effectiveness*Turning attention to intervention effectiveness, the findings of this review point towards considerations which may help improve the relevance of NPS-focused interventions. Firstly, the findings go some way towards informing our understanding of the influence of legal status, the key feature of NPS that differentiates them from traditional illicit drugs. Secondly, the findings also highlight factors which may be important modifiers of people’s NPS use, such as age/drug experience, type of drug use, type of substance and setting.

*Legal status*Although much of the commentary around NPS has placed a strong emphasis on the significance of legality as a reason for use (e.g. HM Government, 2010; 2016) the findings of this review suggest that, in general, for users of NPS, legality does not seem to be of primary importance. However, further analysis of study characteristics revealed that legal reasons were prominent within studies examining problem-drug use, use of synthetic cannabinoids and studies conducted outside of Europe and the UK.

The prioritisation of legal status in studies of problem-drug use and use of synthetic cannabinoids was largely driven by the same population, that is, problem-drug users of

synthetic cannabinoids. This population was also the same population who were most commonly reported as using NPS for reasons relating to drug testing. Although NPS users motivated to avoid positive tests appeared unconcerned about the legal status of the drugs they consumed (Bonar et al., 2014; Castellanos et al., 2011; Johnson & Johnson, 2014; Vandrey et al., 2012), legality and test-based reasons are closely interlinked as a positive test result may have legal implications. This suggests the significance of legal reasons is a consequence of context, as not only were problem-drug user samples drawn from treatment settings where mandatory drug testing was typical, but a significant proportion of the studies examining the use of synthetic cannabis were conducted in the USA, a cultural context in which drug testing as a legal or organisational requirement is more commonplace than in Europe and the UK (Bonar et al., 2014; Castellanos et al., 2011; Lauritsen & Rosenberg, 2016; Perrone et al., 2013).

While authors such as Hammersley (2010) argue that legality is a primary part of the appeal of synthetic cannabinoids, with many users preferring cannabis but choosing to use a non-prohibited alternative for legal reasons, the findings of this review suggest that the relationship between synthetic cannabis and the preference for a legal substance may largely be driven by context. Although admissions to drug services in the UK are predominantly linked to use of synthetic cannabis (NDTMS, 2018) it seems likely that for recreational users of synthetic cannabinoids in the UK who are not in treatment, the importance of drug testing and legal reasons may diminish, as recreational drug users appear not to place as much value on legal status.

Despite the lack of value placed on legal status by recreational users, there are indications that the legal status of NPS may interact indirectly with users’ motives in important ways via the easy availability of NPS, in addition to associations between NPS and perceptions of safety, drug quality and/or stigmatised drug identities.

In their study of recreational users, Measham et al., (2010) concluded that while availability was the primary driver of NPS use, legal status is nevertheless an important reason for users due to the easy availability conferred by their legal status (McElrath & O'Neill, 2010; Measham, 2010). The argument that legality is secondary to availability is largely supported by the findings of this review, as the relevance of accessibility appears to exceed that of legality in the majority of studies. In addition, for those studies looking at recently controlled substances (Ashrafioun et. al., 2016; Carhart-Harris & Nutt, 2011; Johnson & Johnson, 2014; McElrath & O’Neill, 2010; Van Hout & Brennan, 2012;) many users appeared undeterred by the change in legal status, while availability remained the most consistent reason for use.

The assumed association between legal status and perceptions of safety has prompted much concern particularly in relation to young people (e.g. ACMD, 2011; HM Government, 2010; 2016). The review findings suggest that these concerns may be justified, as the studies which focused exclusively on young people were more likely to report use of NPS due to perceptions of safety, with some studies noting that for some users safety was associated with legal status, with young people appearing to associate legality with low potency and higher quality due to the misperception that legal products were regulated and tested.

The association between legality and quality did not appear to be limited to young people however, with recreational users from broad age ranges appearing to associate legally available NPS products with greater consistency and purity. Given that recreational users of NPS were found to place a strong emphasis on quality-based reasons for use, the legal status of NPS once again appears to be a strong indirect driver of NPS use.

There are also indications that legal status might influence people’s use of NPS via perceptions of stigma, as a few studies noted that some recreational users appeared to value the legality of NPS, as legal status offered some measure of protection and distance from

stigmatising drug user identities (McElrath & O’Neill, 2011; Van Hout & Brennan, 2011). The greater social acceptability conferred by legal status appeared to be more relevant to older users of NPS who were described as are more likely to be professionals motivated to protect their jobs (Measham, 2010).

Taken together these findings show that when considered as a direct influence on NPS use, the importance of legal status may only be limited to specific contexts or a minority of users, but when the indirect influences of legality are also considered, legal status appears important to many, if not most, users. Given the numerous indirect influences of legal status on people’s reasons for using NPS highlights a need for NPS interventions to carefully consider, and make explicit, their intended mechanism of change. This might help reduce the likelihood of interventions resulting in unintended negative consequences via alternative pathways or successful intervention outcomes being erroneously attributed to less effective causal pathways.

*Age/drug experience*Analyses of study outcomes by the age range of the samples used revealed that age may be an important modifier of people’s reasons for using NPS. Although it appears that to some extent, the relationship between age and NPS use is mediated by people’s level of drug experience.

Within the studies reviewed, young people were typically characterised as drug-naïve, that is they appeared to have little or no experience of drug use. Young/naïve users appeared to be more strongly associated with use of legal highs and more likely to perceive legally available branded products as safe, less potent and of higher quality. Young/naïve users were also seen as more likely to use headshops or convenience stores due to lack of connections with established drug-taking subcultures (Daly, 2013; DrugScope 2013; 2014; Measham, 2016).

Older users, however, tended to be characterised as more experienced drug users, seasoned clubbers and psychonauts (Measham et al., 2010; Newcombe; 2009; Van Hout & Brennan, 2011). Older/experienced users were thought to be less likely to connect legal status with safety, despite considering branded products to be of higher quality than traditional illicit drugs (Corazza et al., 2014; Norman et al., 2014). To experienced drug users, safety was linked with drug quality and context of use rather than legal status, with users preferring to rely on their own judgement to assess safety (McElrath & O’Neill, 2011; Van Hout & Brennan, 2011). Older, more experienced users were described as more aware of the risks of NPS use, more careful in their dosing and more likely to engage in harm reduction practices.  
In contrast, less experienced users were described as more reckless in their attitude toward consumption and use of harm-reduction strategies.

NPS-focused interventions need to be sensitive to age and level of drug-experience as the different attitudes and beliefs of young/naïve and older/experienced populations are likely to have differential effects on intervention outcomes. The strong bias in the NPS evidence-base toward experienced drug users needs to be redressed if interventions suitable for young/naïve groups are to be optimally effective.

*Type of drug use*The type of drug use also shows evidence of being an important modifier of peoples’ reasons for using NPS. While the profile of recreational users’ reasons for using NPS was consistent with overall trends, problem-drug users were more strongly associated with use of NPS for legal reasons and the avoidance of positive drug tests.

While quality-based reasons appeared to be less relevant to problem-drug users, the quality of NPS appeared to be reasonably important to recreational drug users. The link between recreational use and quality is consistent with the observation that the growth of the NPS market was partially fuelled by drops in the purity of the popular party drugs ecstasy and cocaine, and the widespread marketing of NPS as a high-quality alternative (Carhart Harris & Nutt 2011; Measham et al., 2010; Winstock et al., 2010).

While problem-drug users are only a minority, the disproportionate burden of harm associated with this group can lead to an over-emphasis on this group of users. It is important to be aware that the motivations of problem-drug users may differ significantly to other groups and for interventionists targeting recreational use to check that their assumptions about people’s motives are not informed by studies based on problem-drug use.

*Type of substance*Compared to the overall sample, within the studies that examined the broad category of legal highs/NPS rather than specific substances, the salience of safety perceptions as a reason for use appeared greater. Users of branded legal high products were more likely to assume that they were safe because they were legal and readily available, and that this was particularly true for novice users. Although only one of the studies examining the use of legal highs/NPS focused exclusively on young people, naïve drug users were a central focus of concern within the legal high/NPS based studies. This reinforces the premise that a person’s level of drug experience influences perceptions of safety as the greater emphasis on safety-based reasons for both users of legal highs/NPS and younger users may reflect the influence of novice drug users. The greater inclusion of novice users in the studies examining legal highs/NPS may also account for why curiosity was more relevant to legal highs/NPS than studies focused on specific drug types, as these samples may have been more strongly linked to drug initiation.

In contrast, studies exploring people’s reasons for using specific types of NPS, such as synthetic cannabinoids and cathinones, did not highlight safety reasons as especially important. Studies focusing on specific named substances tended to draw on samples of experienced drug users in drug treatment settings or through surveys targeted at clubbers and psychonauts. For the communities of experienced recreational drug users, participants generally appeared quite well informed about NPS and less likely to associate legal status with safety. These users also appeared more strongly associated with substitution of NPS as an alternative to illicit drugs, with NPS forming part of an interchangeable repertoire of party drugs.

*Setting*The link between problem-drug use and legal reasons drew attention to the importance of the context of drug use, as the prioritisation of legal reasons appears to be related to contexts in which drug testing is often mandatory. As legal status is a defining feature of NPS, differences in the legal context of use, such as the differing legal controls between countries, may have a significant impact on people’s NPS use. Interventionists should therefore be careful when drawing evidence from other countries during intervention development. Similarly, evidence-based on samples in treatment settings may not be appropriate for interventions targeting recreational use.

*Framing of the target behaviour*A further consideration which may be important to interventionists are the differences between reasons for using NPS and reasons for avoiding NPS use. Currently, the majority of the evidence base is focused on reasons for use, but the primary influences encouraging use may not be the primacy influences which discourage use. Although the findings of this review suggest that reasons for non-use appear to be largely the inverse of some reasons for use, the influence of the type of reason (e.g. health/ pleasure /social) may vary considerably for the behavioural outcomes of taking and not-taking. Interventionists may need to consider the differential influence of reasons on performance and non-performance of the target behaviour, as the most prominent influences on the use of NPS may not be the most effective targets for discouraging use. For example, in the studies examined here, risk perceptions were found to be a prominent reason for non-use, but the inverse, perceptions of safety, was noticeably less prominent as a reason for use. It is possible that for users, this reflects a lower concern for health rather than a lack of risk awareness.

### Strengths and limitations of the review

This review employed a systematic approach to locate appropriate studies for consideration. As a result, the studies included are likely to represent a greater proportion of the NPS evidence base than if a non-systematic approach had been used. Furthermore, by conducting sub-analyses of study characteristics, important modifiers of people’s NPS use/reasons for use were identified.

However, the review is subject to several limitations. Firstly, the problematic terminology around NPS is likely to have restricted the scope of the literature search as the full range of potential search terms was beyond the scope of this work. To some extent, this was addressed by complementing the database search with bibliographic searches of reference lists in order to identify key papers in the field, but nevertheless, it is possible that some relevant papers will have been omitted.

While the field of NPS research is growing rapidly, it is not yet sufficiently mature to enable a narrow focus on the population of interest. Consequently, the range and types of studies included are quite broad which limits the extent to which comparisons can be made between studies. As the current research presented in this thesis is exploratory in nature, the inclusion of a broad range of studies is not necessarily a disadvantage as the wide scope has facilitated a broader overview than would have been possible with a more targeted review. However, as a result of the large variation in study types included, the method of analysis used was necessarily quite broad-stroke and some of the more subtle findings of the studies may not have received due attention. Although the review used a systematic approach to inclusion and coding, the level of detail within the studies varied greatly. Consequently, those studies which

allowed a finer-grained analysis are somewhat overrepresented in the review findings compared to those which were less detailed. To account for this difference in study complexity, the overview analysis of the themes was restricted to a single count per study, per theme, regardless of the study’s level of representation within the subcategories of a theme. Although this approach accommodated variations in study depth, some richness will inevitably have been lost. Similarly, the power of the studies was not taken into account, and consequently, the findings of surveys with hundreds of respondents were given equal weight to the findings of small-scale interview studies.

A further limitation of the review was that analysis was undertaken by a single reviewer who decided both the relevance of the studies and undertook the coding of the extracted data. The validity of the review method would have been strengthened by working with a second reviewer to develop and verify the coding categories. In addition, the review did not attempt to assess the studies for quality and some of the studies included may be of low scientific robustness. In particular, several studies included were not sourced from peer-reviewed journals but instead from local councils and third sector sources. While some of these reports did not follow a formal scientific method, it should be noted that the quality of the third sector materials was generally good.

The wide variation of the contexts and samples of the studies limits the extent to which the findings are generalisable to young people in the UK. Due to limitations of reporting and study coverage it was not possible to conduct moderator analyses for several factors known to influence drug use such as gender, education, socio-economic status, employment and history of mental illness.

### Conclusions

The findings of this review indicate that important influences on people’s reasons for using

NPS which may need to be considered by interventionists are; the type and quality of the NPS; the type of use; the setting of use; legal status; market factors such as price and availability; and the framing of the target behaviour. Also, important modifiers of peoples’ reasons for use maybe age and/or amount of previous drug experience. The review also highlighted a strong potential for displacement between substances.

Although legal reasons for using NPS use appear less prominent in UK-based studies than those outside of Europe and the UK, there were indications that legal status had a strong indirect influence on reasons for NPS use via accessibility, perceptions of safety and drug quality, all of which appear to be primary drivers for NPS use in young populations. Given that perceptions of safety were especially relevant to young people, inventions targeting the NPS use of young people in the UK will need to account specifically for the influence of legal status and cannot therefore assume that interventions designed to address illicit drugs will be appropriate for use with NPS.

The review found that the majority of studies in the evidence base focused on experienced drug users’ reasons for taking NPS. Few studies focused on the motives of drug naïve populations, and few exclusively on young people. In addition, relatively few studies examined why people avoid using NPS. There are currently no studies which have investigated why young people in the UK use or do not use ‘legal highs’ although several UK based studies include young people in their samples. There is a clear need for more research examining young people specifically, and in particular, young people who are not experienced drug users. Furthermore, by the emphasising the link between young/naïve drug users and perceptions of safety around NPS, the findings of this review suggest that young, novice users of NPS may be at particular risk of harm and therefore the need to address this gap in the knowledge-base is pressing.

# Overview of research design

## Introduction

This chapter sets out a programme of empirical research designed to support the overarching aim of the project, i.e., to inform the development of behaviour change interventions that address young people’s use of NPS. The chapter provides an overview of the research design and theoretical background supporting a series of the studies and a description of the analytical approaches employed in each study. A report of the implementation and findings of each study is presented in the three chapters that follow: Study 1 (Chapter 5), Study 2 (Chapter 6) and Study 3 (Chapter 7).

To develop effective behaviour change interventions, it is important to understand the motivations which drive the behaviour. However, a search of the literature found no studies reporting on young people’s motives for using NPS in the UK that were not predominantly focused on experienced drug users. It was also noted that, within the literature, people’s reasons for using NPS generally received much greater attention than their reasons for not using NPS. Addressing these gaps in the literature were important objectives of the present research project.

In addition to addressing the gaps in the literature, the present research was also guided by the aim of integrating the use of theory with intervention design as theory-based interventions have been found to be effective and have received strong support in drug prevention guidelines (see Chapter 3). As there are several existing social cognitive models that have shown to be useful in other contexts, the present research aims to assess the suitability of these models for explaining young people’s NPS behaviour.

Another important function of the present research was to support the aim of developing intervention approaches that are relevant and acceptable to the target population (see Chapter 1). Interventions that are more acceptable to the target population are likely to be more ethical and are also more likely to have better uptake and be more sustainable (ACMD, 2015; NICE, 2017; UNODC & WHO, 2018). While the overriding aim of the present research was to inform intervention design, the research took place across the time period when the PS Act was implemented, which presented a significant change to the context of NPS use and a unique opportunity to observe the impact of a real-world intervention on young people’s beliefs and attitudes around NPS. Therefore, another important objective of the present research was to investigate the extent to which implementation of the PS Act affected young people’s perceptions about NPS.

## Research questions

1. Why do young people use NPS?
   1. What salient beliefs do young people hold about NPS?
   2. What are young people’s motives and reasons for using or not using NPS?
2. To what extent has implementation of the PS Act affected:
   1. Young people’s beliefs about NPS?
   2. Young people’s motivations and reasons for using or not using NPS?
3. What approach to NPS intervention do young people think is suitable and acceptable?
4. Which theoretical framework/s are appropriate for use in NPS-related behaviour change interventions?
   1. Which frameworks are compatible?
   2. Is there a need for extensions or modifications?

## Definitions

For the sake of clarity, the following working definitions of key terms have been adopted in the present research project:

### **Reason**

Reasons are causes, explanations, or justifications for an action, event or behaviour. They may reflect behavioural beliefs, motivations or environmental influences. Reasons can be distinguished from behavioural beliefs and motives, as they focus on the context-specific cognitions that people use to explain their behaviour (Westaby, 2005).

### Outcome expectancy / behavioural belief

Outcome expectancies are the anticipated consequences of a person’s behaviour (Conner & Norman, 2015). A behavioural belief is a belief about the likely outcome of a behaviour.

### Motivation

Motivations are the processes whereby goal-directed activities are energised, directed and sustained (Schunk, Pintrich, & Meece, 2008). Motivations can be distinguished from reasons as they are more general drivers of people’s behaviour whereas reasons are context-specific (Norman, Conner, & Stride, 2012).

### Behavioural intention

Behavioural intention represents a person’s motivation in the sense of his or her conscious plan, decision or self-instruction to exert effort of perform the target behaviour (Conner & Norman, 2015).

## Study design

The research questions were addressed in three studies. Study 1 was an exploratory study investigating young people’s beliefs, reasons and motivations. Study 2 people’s beliefs, reasons and motivations after the ban on legal highs which also allowed a comparison with pre-ban beliefs. Study 3 was an acceptability and suitability study. The assessment of the suitability of theoretical models was ongoing across all three studies. All studies used a focus group methodology and qualitative analysis with a quantitative element. Figure 5-1 illustrates the flow of the work through the three studies.

Figure 5-1 Research flow process diagram

Key: SCM = Social cognition model

Post-ban  
data

**DATA COLLECTION**

**DATA ANALYSIS**

**BEHAVIOUR MODEL**

**Study 1** pre-ban focus groups

Acceptability data

Re-evaluate fit of SCM’s

*Cross-check*

*Devise*

*Inform study design (focus group questions)*

**Study 2** post-ban focus groups

**Study 3**   
focus groups

Pre- and post-ban comparison

Coding framework

Pre-ban   
data

Coding themes

Coding themes

Select model/s

Evaluate fit of SCM’s

Select existing models

*Revise*

*Devise*

*Inform*

*Replicate*

The subsequent sections provide a brief overview of each study before going on to describe in more detail the theoretical models considered within the research, some core elements of design and implementation, and the analytical approach used.

### Study 1 (Chapter 6)

Study 1 was undertaken several months prior to the introduction of the PS Act. The study was a belief elicitation study informed by the method outlined by Epton and colleagues for the development of theory-based health messages (Epton, Norman, Harris, Webb, Snowsill & Sheeran, 2014). The study was designed to explore young people’s beliefs, reasons and motivations related to use and non-use of NPS to identify: the unique aspects of young people’s relationship with NPS; their salient beliefs about NPS, and their reasons and motivations for using and not using NPS.

### Study 2 (Chapter 7)

Study 2 was a comparative study conducted more than a year after the PS Act was brought into force on the 26 May 2016. To aid comparison, Study 2 largely replicated the design of Study 1, with some additional questions asking participants about their knowledge and perception of the ban on former legal highs. The study aimed to explore the effect of the PS Act on young people’s perceptions of NPS and NPS use, and any similarities or differences between the beliefs of the young people in the pre-ban focus groups and those of the young people in the post-ban groups. As Study 1 was originally designed before the introduction of the PS Act was announced, the studies were not initially designed for comparative purposes but nevertheless were able to provide significant insight into the impact of the ban on young people’s perceptions and cognitions.

### Study 3 (Chapter 8)

Study 3 was designed to consider young people’s views about intervention approaches for the purpose of identifying what young people think would be most effective and acceptable. Engaging with young people to hear their perspectives on what makes a good intervention and what is important to them, can help improve the cultural sensitivity and targeting of intervention design, in addition to informing the content of intervention components to ensure they are engaging and appropriate. The aims of the study were to identify which motives are most important to young people, which constructs may make the best targets for intervention, which delivery settings and methods are most suitable, and which approaches are best avoided.

## Theoretical basis for interventions

Theories define the relationships among interrelated constructs (e.g. beliefs, attitude, intention, behaviour) in a way that makes it easier to explain and predict behaviour (Glanz & Rimer, 2005). The constructs and the specified relationships between them then provide a map of potential intervention targets (Conner & Norman, 2013).

The review of the drug intervention evidence base (see Chapter 3) highlighted the importance of using theory in intervention development. The European drug prevention quality standards (EDPQ; Brotherhood & Sumnall, 2011) strongly endorse the use of theory in drug-focused interventions and within the drug intervention evidence base theory-based approaches were found to be more effective (Brotherhood et al., 2013; UNODC, 2018).

Including theory in intervention design is vitally important for improving intervention effectiveness, not only because reliable theory can support better outcomes, but providing a theoretical basis can also facilitate intervention development by establishing precisely which intervention mechanisms are responsible for observed outcomes (Michie, 2007). However, it

is important to ensure that interventions use and specify theory appropriately (Miche & Abraham, 2004), as while theory-based approaches to behaviour change are known to be more effective for a range of health behaviours (Conner & Norman, 2005; Noar et al., 2007; Prestwich, Webb & Conner, 2015; Webb et al., 2010), not all applications of theory-based interventions are equally successful (Prestwich, Sniehotta, et al., 2014). If descriptions of interventions, however effective, do not sufficiently specify their theoretical basis and the precise mechanism of change being targeted, attempts to apply the intervention can lead to a misapplication of theory. This results in interventions that are said to be evidence-inspired rather than evidence-based. (Hardman et al., 2002; Michie & Abraham, 2004).

Although several theories were used successfully in the drug intervention evidence-base, there are insufficient studies incorporating theory to determine their relative efficacy with illicit drug use (Jepson, Cox & Platt, 2006). The theories that were used were social cognitive theories and stages of change models (Brotherhood et al., 2013; Jepson & Jepson, 2010; Jepson et. al., 2006). While these theories are commonly used in the development of interventions (Rutter, 2002), a review of individual approaches to behaviour change conducted by NICE (2009) found that interventions based on the stages of change model did not demonstrate effectiveness and consequently do not recommend it is used as a theoretical basis for behaviour change interventions.

### Selection of models

One of the key objectives of this research is to identify which theoretical constructs are most relevant to NPS behaviour and determine which theoretical models are appropriate for use in NPS-related behaviour change interventions.  While the health behaviours examined by Epton et al., (2014) are well researched from a social cognitive perspective, this investigation concerns a novel behaviour (i.e., NPS use) so the recommended process was adapted to incorporate a more exploratory approach. Epton et al., (2014) used the Theory of Planned

Behaviour (TPB: Azjen, 2013) as a theoretical framework for their study as its suitability for the behaviours of interest had been previously established. However, no theoretical frameworks have yet been applied to NPS behaviour. Consequently, this study considers several social cognition theories which have been selected based on their relevance to comparable health risk behaviours. The intention is that a broader theoretical base, linked with a range of comparable behaviours, will aid the synthesis of a theoretical framework appropriate for use with NPS behaviour. Although NPS bear closest phenomenological similarity to the illicit drugs which they largely emulate, the legal status of the majority of NPS places them in a social context which may share more similarities with legally available psychoactive substances such as alcohol and tobacco. Having no direct parallel in previous health research, but key commonalities with a range of health behaviours, it was decided not to restrict the theoretical framework to a single model based on a review of recreational drug interventions, but to expand consideration to health behaviour research more generally. Looking to previous research, five models of behaviour change were deemed appropriate to inform the development of the study. In addition to the TPB this study also included: the Health Belief Model (Becker, 1974; Rosenstock, 1966;), Protection Motivation Theory (Rogers, 1975), Behavioural Reasoning Theory (Westaby, 2005) and the Prototype/Willingness Model (Gibbons, Gerrard, Blanton, & Russell, 1998).

The selection criteria for the models were that they should (i) provide an explanation of the cognitive and social processes underlying comparable health behaviours, (ii) specify behavioural determinants and (iii) show evidence of success in predicting health behaviour or behaviour change in related or comparable behaviours. Although the specific constructs of social cognition models vary, the models share some common core assumptions. In particular, they assume that behaviour is determined by a set of social, behavioural and efficacy beliefs which form the basis of an assessment about the value of performing the behaviour. This evaluation then informs a person’s intention or commitment to perform the behaviour, which

interacts with environmental constraints to determine the performance of the behaviour. To the extent that a person is free to act in line with their goals, behaviour is considered to be intentional and volitional.

### Health belief model

The health belief model (HBM; Becker, 1974; Rosenstock, 1966) proposes that health behaviour is explained by people’s beliefs about the perceived level of health threat (susceptibility and severity) and the value of performing the behaviour (barriers and benefits) as well as various cues to action. The HBM is one of the most widely used theories in health behaviour research which has been applied to a broad range of behaviours including health risk behaviours such as smoking (Gianetti, Hersey & Iverson, 1987; Mullen, Stacy & Lloyd, 1990; Penderson, Wanklin & Baskerville, 1982; Reynolds & Rihen, 1985) and drinking (Beck, 1981; Gottleib & Baker, 1986; Portnoy, 1980). Although it remains popular, the HBM is criticised for having poor construct definition and relatively weak predictive power (Armitage & Conner 2000; Harrison et al., 1992).

Figure 5-2 Health belief model

Health-promoting behaviour

Perceived benefits vs. perceived barriers

Perceived threat

Self-efficacy

Cues to action

Modifying variables

Perceived seriousness

Perceived susceptibility

### Protection motivation theory

Developed as an explanation for the mechanism underlying fear appeals, protection motivation theory (PMT; Rogers, 1975) proposes that people are motivated to protect their health on the basis of a threat appraisal and a coping appraisal. Health threats are appraised according to perceptions of susceptibility and severity while coping ability is evaluated on the likelihood that performing a behaviour will remove the threat and the person is capable of performing the behaviour. PMT has been used successfully with drug-taking (Wu, Wong Chou et. al., 2014), adolescent smoking (MacDonald et.al., 2013; Thrul et. al., 2013 & Yan et. al., 2014) and to a lesser extent drinking (Murgraff et. al., 1999).

Figure 5-3 Protection motivation theory

Health-protection motivation

Intrinsic rewards extrinsic rewards

Response cost

Vulnerability severity

Sources of information

Threat appraisal

Coping appraisal

Response efficacy self-efficacy

Fear

### 

### Theory of Planned Behaviour

According to the theory of planned behaviour (TPB; Ajzen, 1991) behaviour is a result of a person’s intention to act and their perceptions of control over the intended behaviour. A person’s intentions are determined by their attitude (favourable or unfavourable evaluations), subjective norms (beliefs about whether significant others want them to perform the

behaviour) and perceived behavioural control (perceptions about whether performing the behaviour is easy or difficult). The TPB has been applied to a variety of health behaviours and has received extensive support (see Conner & Norman, 2015). While the TPB is generally considered a good predictor of behaviour, its performance with health risk behaviours is not as strong (McEachan, Conner, Taylor, & Lawton, 2001). Nevertheless, the TPB has shown positive results with a range of health risk behaviours including smoking (Conner et. al., 2006; Rise, Kovac, Kraft, & Moan, 2008), binge drinking (Cooke, Dahdah, Norman et. al. 2007; ManKarious & Kothe, 2015; Norman, & French, 2016) and illicit drug use (MacMillan & Conner, 2003; Peters, Kok & Abraham. 2007). Despite its extensive application in behavioural prediction, the TPB has been less commonly used to inform intervention design, (Hardeman et al., 2002).

Figure 5-4 Theory of planned behaviour

Behaviour

Intention

Attitude

Subjective norms

PBC

PBC = Perceived behavioural control

### Prototype willingness model

According to the prototype willingness model (PWM; Gibbons & Gerrard, 1995; Gibbons, Gerrard & Lane, 2003), there are two pathways to behaviour, a rational pathway similar to the TPB that is determined by attitudes, subjective norms and intentions, and a social reaction pathway that responds more spontaneously to opportunities to perform health risk behaviours depending on a person’s willingness to engage. An important factor in a person’s willingness

are the prototypes associated with the risk behaviour (e.g., a typical NPS user), the favourability and similarity of which can affect how open a person is to engage in the behaviour. The PWM was developed to account for adolescent risk-taking in recognition of the unplanned nature of many risk behaviours in social contexts. The PWM has been used successfully with health risk behaviours (Rivis, Sheeran & Armitage 2006) including drinking behaviour in students and adolescents (Gerrard et. al., 2002; Gibbons & Gerrard, 1996; Norman, Armitage & Quigley, 2007) and drug use (Brody et. al., 2004).

Figure 5-5 Prototype willingness model

Risk   
behaviour

Behavioural willingness

Attitudes

Subjective norms

Prototype risk images

Behavioural intention

Previous behaviour

### Behavioural reasoning theory

Behavioural reasoning theory (BRT; Westaby, Fishein & Aherin, 1997) builds on the TPB, sharing the same main constructs, that is, intention as the proximal behavioural determinant, which is influenced by attitudes, social norms and perceived behavioural control. However, in addition, the BRT also includes constructs which represent people’s reasons for and reasons against performing a behaviour. Including reasons allows the model to capture defensive processes and justifications not accounted for by the TPB, allowing greater context-specific explanations of behaviour. BRT has not been used as extensively as some of the other models but has shown a good predictive ability for students’ binge drinking behaviour (Norman, Conner & Stride, 2012).

Figure 5-6 Behavioural reasoning theory

Behaviour

Intention

Attitude

Subjective norms

PBC

Reasons against

Reasons for

Past behaviour

PBC = Perceived behavioural control

### Overview of model constructs

As the constructs of the five social models show much overlap, a superordinate of model constructs was devised to inform the design of this research. By examining the model constructs for similarities and differences, a set of seven socio-cognitive construct categories were created. The model constructs, the model they relate to, how they were grouped, and the construct categories are shown in Table 5-1.

**Table 5-1 Health behaviour model constructs grouped by construct category**

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **Model construct** | **Sub-constructs** | **Model** |
| **Reasons** | Reasons | Reasons for  Reasons against | BRT  BRT |
| **Risk perceptions** | Personal vulnerability | Conditional risk  Unconditional risk | PWM  PWM |
| Perceived threat | Seriousness  Susceptibility | HBM  HBM |
| **Behavioural beliefs** | Attitudes | Positive attitudes  Negative attitudes | PWM  PWM |
| Cognitive attitude | Advantages  Disadvantages  Harmful  Beneficial | TPB / BRT  TPB / BRT  TPB / BRT  TPB / BRT |
| Affective attitude | Pleasant  Unpleasant  Enjoyable  Unenjoyable | TPB / BRT  TPB / BRT  TPB / BRT  TPB / BRT |
| Behavioural willingness | Openness to risk | PWM |
| **Normative beliefs** | Subjective norm | Approval  Disapproval | TPB / BRT / PWM  TPB / BRT / PWM |
| User prototypes | Positive images  Negative images | PWM  PWM |
| Non-user prototypes | Positive images  Negative images | PWM  PWM |
| **Control beliefs** | Perceived behavioural control | Easy  Difficult | TPB / BRT  TPB / BRT |
| Self-efficacy | High  Low | HBM  HBM |
| Perceived barriers | Present  Not present | HBM  HBM |
| Cues to action |  | HBM |
|  |  |  |  |
|  |  |  |  |
| **Category** | **Model construct** | **Sub-constructs** | **Model** |
| **Modifying variables** | Demographic variables | Age  Gender  Socio-economic status | HBM  HBM  HBM |
| **Past behaviour** | Past behaviour | Ever engaged in behaviour  Never engaged in behaviour | PWT / BRT  PWT / BRT |

## Design and implementation

A qualitative approach was chosen as qualitative methods are well suited for investigating newly developing social phenomena and subject matter that is underdeveloped or ill-defined (Ritchie & Lewis, 2003). Qualitative methods have long been used as a prelude to quantitative studies, particularly where the subject matter is complex, and some identification of underlying constructs is needed to guide the choice or development of explanatory theory around which relevant questions can be structured. It is within this context that this research sits. In aiming to inform interventions, a primary objective of this work is to link NPS behaviour with a suitable explanatory theory. The role of qualitative methods in identifying the important influences and in generating explanatory hypotheses is widely recognised (Giddens, 1984; Layder, 1993; Lofland & Lofland, 1995; Miles & Huberman, 1994; Richards & Richards, 1994). It is intended that once potential influences (model constructs) have been identified, the extent of their influence (i.e. predictive power) would be further interrogated at a later date, a task typically achieved though statistical analysis of surveys. Therefore, within the present work, a premium is placed on the diversity, rather than the generalisability, of potential influences, for which the open and generative nature of qualitative methods is ideally suited.

However, the small sample sizes typical of qualitative research can lead to non-representative samples that are not a good reflection of the general population. Non-proportional representation can lead to a skewed sample and consequently create bias within the data. In particular, with a limited number of participants, it can be challenging to ensure adequate representation of people from diverse and underrepresented groups. To mitigate these issues as far as possible, whilst retaining a pragmatic approach, multiple focus groups were organised together with several community groups. Recruitment through a single channel might have reduced the heterogeneity of the sample, it was intended that collaboration with several groups with a variety of membership and core interests would improve the diversity and representativeness of the sample. The community groups involved in the research engaged young people from a range of demographics including those from high and low SES backgrounds, those in employment and the unemployed, young people from secondary colleges, tertiary colleges and universities as well as a range of ethnicities. Each study incorporated three focus groups and participant recruitment aimed to encourage as many young people to attend as was practical for each group in order to account for participant drop out.

### Community-focused research

The target population of interest was young people in the general population. However, recruiting a representative sample of young people for a small scale study on a sensitive topic presents a number of practical issues. Due to the age of the participants and potential sensitivity of the research topic, it was deemed necessary to recruit participants in collaboration with organisations capable of safeguarding the young people taking part. However, recruitment via a single organisation such as a University department is likely to result in samples that are not a good representation of the general population (Barry, 2011; Hart et al., 2016). Consequently, the decision was made to work with a variety of local Yorkshire-based community youth groups.

The project engaged with local community groups from the outset, in recognition of the importance of involving communities in research and encouraging participants to take an active role in the research process (Hart et al., 2016). Engaging with young people from the target population in the present research not only improved the relevance of the research but also ensured that the design and materials were suitable and well-targeted.

The groups that took part in the research were chosen on the basis of both practical and methodological considerations. As community groups typically develop around set of shared values, each group is likely to represent a biased sample in some way. By working with several different groups drawing on slightly different populations, the intention was to reduce bias and increase the overall diversity of the sample population. However, recruitment of the groups was also dependant on their willingness to engage with the project which inevitably skewed the sample towards community groups with a vested interest in the research topic.

Sheffield Young Advisors were the first group invited to take part. The group was approached following discussion with Sheffield Futures, a local youth charity with links to one of the supervisors of the present research. Following an initial introduction, a meeting was organised

between the researcher and the Sheffield Futures Youth Involvement Team. The Youth Involvement Team agreed to help with recruitment and identified the Sheffield Young Advisors, Young Healthwatch Sheffield and Sheffield Interchange as appropriate groups to invite onto the project. Initial introductions were made by email, following which all three groups accepted an invitation to take part.

Additional groups were identified through a combination of web searches, telephone queries with a local volunteering agency, a local drug support service, Sheffield council and discussions with contacts at the existing groups. Potential groups were targeted if they were thought likely to have an interest in drug-related issues but did not specialise in offering drug services (e.g. youth groups with a focus on social, health, or mental health issues, sexuality, advocacy, justice or empowerment).

Each group was contacted by email and invited to take part in the project. Five group facilitators responded with interest, two groups dropped out in the early stages due to difficulties with funding and three groups agreed to take part. Once an agreement was made and any questions were answered, focus group participants were recruited in collaboration with the group facilitators following the procedure outlined in section 5.6.4. It is recognised that several groups had a particular focus on young people from disadvantaged backgrounds, however, this was not considered to present a problem for the research as young people facing disadvantage may be at greater risk of NPS use (ACMD, 2011).

Six community groups took part in the research:

* **Sheffield Young Advisors (SYA)**A youth consultancy and advocacy group run by Sheffield Futures, a local independent charity that supports young people with personal development.
* **Sheffield Interchange (SIC)**A group supporting young people with mental health issues.
* **Young Healthwatch Sheffield (YHS)**An advocacy group for children and young people’s health in Sheffield.
* **Young Healthwatch Leeds (YHL)**An advocacy group for children and young people’s health in Leeds.
* **Chilypep Sheffield (CPS***)*An empowerment project supporting disadvantaged young people.
* **Doncaster Housing for Young people (DHY)**A group supporting young people at risk of homelessness.

In addition, Sheffield Futures Young People's Involvement Team agreed to host an advisory group of young people (n=15) for consultation purposes. Working with community groups facilitated engagement with a more diverse range of young people than would have been

recruited through university channels (Barry, 2011). In particular, collaborating with the community groups for recruitment ensured the inclusion of young people from low SES backgrounds, ethnic minorities and with experience of mental health issues which was considered important in the light of the apparent neglect of inequalities issues in the drug-intervention evidence base (Jepson et. al., 2010). Including a diverse range of young people with insight into the everyday health concerns of young people in the city was an important driver of the research, and it was through consultation with Sheffield Young Advisors that the focus on NPS was determined. The group of 15 young people ranging in age from 16 to 26 identified ‘legal highs’ as an important issue which they and their friends were facing.

### Focus groups

All three studies used a focus group methodology. Given the age of the participants and potential inexperience of some, focus groups located within familiar community group spaces offered an appropriate way to explore sensitive issues in a safe and encouraging environment. Furthermore, the social processes within a group setting can encourage deeper reflection as participants ask questions of each other, seek clarification and consider their own standpoint further (Finch & Lewis, 2003). This deeper reflection is important for helping participants develop and express their insights into their own and others’ attitudes and behaviour, helping the group move beyond standard responses. Another advantage of focus groups is that the synergy created by a group dynamic can encourage contributions from people who might be reluctant to talk on their own or feel they have nothing to say (Ashar & Lane, 1993; Catterall & Maclaran, 1997; Finch & Lewis, 2003; van Teijlingen & Pitchforth, 2006). Thus, social processes may encourage a greater diversity of responses and reveal a broader range of influences on young people’s behaviour.

The target sample size and number of focus groups was based on the likelihood of reaching data saturation, that is the point when additional focus group data produces little new information in the coding analysis (Guest et al., 2006). The modal size for focus groups is recommended as eight participants, and the recommended minimum number of focus groups required to achieve identification of at least 90% of the most prevalent themes using inductive thematic analysis is three (Guest et al., 2016). Accordingly, each study used three focus groups with a target of ten participants per group (to allow for drop-out).

### Participants

The target demographic was young people from the general population. The intention was to include users and non-users of NPS and traditional drugs, ideally with rates of use comparable with the wider population of young people in the UK. The study did not target groups with specific drug-related issues or problem drug use as other types of intervention such as one-to-one therapeutic approaches would be more suitable for people with substance dependency (NICE, 2017). Study participants were a diverse group of young people aged 16–25 from a variety of postcode areas in Sheffield, Leeds and Doncaster. This age group falls into a range identified as most likely to initiate use of psychoactive substances and use recreational drugs more frequently than other age groups (CSEW, 2015), and is potentially at higher risk of acute harms associated with NPS use (EMCDDA, 2018). Diversity in this instance refers to young people from a range of social, ethnic and economic groups with various levels of education and employment as well as the inclusion of diverse sexual orientations and young people with a variety of mental health issues. The specific age range used for the study reflected the classification of young people by the community groups. The diversity of the sample was intended on the one hand to draw attention to the perspectives of groups who might be missed had the work been restricted to a sample of university students, as is typical in much psychological inquiry in non-clinical settings, and on the other to triangulate upon the most commonly held beliefs across several contexts.

### Recruitment

Following receipt of ethical clearance, community group facilitators were contacted, and the groups invited to take part in the study. Once interest was confirmed, the researcher liaised with group facilitators to organise session dates, recruitment procedures and risk-assessment. To address the potential for inadvertent coercion to take part in the study, recruitment was done together with community group facilitators in a two-step process. Firstly, young people steering the community groups were approached by their facilitator to establish whether the group would be interested in taking part in the research. Once the steering group gave the go-ahead, the researcher attended one of the regular sessions of the community group to introduce the project to group members, after which potential participants were invited to take part. During the introduction salient points regarding risk and confidentiality were emphasised. Introductory sessions were held on the same day as the focus group, during the first 20-30 minutes of regular community group sessions. During this time the project was explained to participants and they were provided with an information sheet, consent form and opportunities for questions and discussion. Once potential participants read the information sheet and their questions were answered satisfactorily, they were given an additional five to ten minutes to consider their decision. It was emphasised that there was no obligation to take part in the research and they could withdraw at any time. It was stressed to group members that the research was a distinct activity and an alternative activity was available for those not wishing to take part. Written consent was obtained for each participant. For those under the age of 16, written consent of a senior staff member of their organisation was also obtained. Participants were given a £10 voucher in recognition of their time which were provided regardless of individual contributions, and even if they chose to withdraw.

### Procedure

After deciding to take part, participants filled in the consent form and a background information questionnaire (see Appendices B, C and D for Studies 1, 2 and 3 respectively) for consent form). To ensure confidentiality, questionnaires contained no identifying information. Completed questionnaires were placed in blank envelopes, collected and stored securely. Prior to the start of the focus group discussion, ground rules were run through and confidentiality guidelines reiterated. Participants were then asked a series of semi-structured questions with prompts. Group discussion took between about 40 to 60 minutes and was recorded using a digital voice recorder. A short break was offered to participants approximately halfway through the group discussion. At the end of the session, facilitators checked in with group members and any additional support needs were identified and handled appropriately with the help of a qualified youth worker.

### Defining the target behaviour

Effective interventions depend on clear behavioural definitions (Ajzen, 2006). The particular challenge posed by NPS is the lack of clarity in what actually constitutes a ‘legal high’ from both a formal and informal perspective. With hundreds of available products ranging widely in psychoactive effects, there was concern about the effectiveness of using an approach dependent on precise definitions of behavioural targets. However, the core issue here was whether young people themselves viewed legal highs as a distinct category of drugs about which meaningful conversations could be had. To confirm this, young people were asked about what the term ‘legal highs’ meant to them during one of two consultation sessions with Sheffield Young Advisors. Although levels of knowledge around NPS varied a great deal within the group of 15 young people, the majority were familiar with the term and the group agreed unanimously that ‘legal highs’ was an appropriate term to use. The young people in

the advisory group were able to distinguish between NPS and traditional drugs due to the branded packaging in which they were sold, as well the ways peers talked about them. Young people agreed that ‘taking legal highs’ was an appropriate way to describe the behavioural action, demonstrating a clear understanding that ‘taking’ referred to the recreational use of NPS by smoking, snorting or consumption.

The definition of NPS was adapted from materials created by the ACMD (2015) in consultation with the advisory group of young people. Prior to the introduction of the PS Act Legal Highs were defined as:

‘The common name for New Psychoactive Substances (NPS), also known as club drugs, designer drugs or research chemicals. These are chemical substances that are sold legally but produce the same, or similar effects, to illegal drugs such as cannabis, cocaine, ecstasy and heroin. They are psychoactive which means they have mood-altering properties and can act as stimulants, sedatives, hallucinogens and psychedelics.’

After the introduction of the PS Act Legal Highs were defined as:

‘The common name for New Psychoactive Substances (NPS), also known as club drugs, designer drugs or research chemicals. These are chemical substances that produce the same, or similar effects, to illegal drugs such as cannabis, cocaine, ecstasy and heroin. Until recently they were sold legally but are now banned. They are psychoactive which means they have mood-altering properties and can act as stimulants, sedatives, hallucinogens and psychedelics.

### Action orientation

Although NPS use is the behaviour targeted in the research, the desired outcome of

intervention would be non-performance of the target behaviour. However, the motivational systems underpinning acting and not acting may not be the same, as each outcome may be linked with different goals, supported by different beliefs and reasons (Richetin, Conner & Perugini, 2011). For example, while a young person might choose to take NPS for social reasons, they might choose not to take NPS for health reasons. In other words, each behaviour, (taking and not taking) may be motivated by different, separate, goals, not opposite orientations toward the same goal. In the review of the NPS literature reported in Chapter 3, it was noted that NPS focused studies examining people’s reasons mostly focused on their reasons for using NPS and comparatively few considered reasons why they did not take NPS.

To ensure this research captured motives for why young people may decline to use NPS in addition to why they use them, an alternative target behaviour ‘not taking legal highs’ was also defined. Although the young advisors agreed that ‘not taking legal highs’ was an appropriate term for the purposes of the research, more than one of the young advisors said that they had some difficulty visualising the behaviour. To address this, a prompt was developed which asked participants to imagine a young person being offered a legal high but choosing not to use it.

### Measures and materials

A basic background questionnaire (modified for Study 2, see Chapter 6), consent forms (updated later in accordance with general data protection regulations) and participant information sheets were used in all three studies (see Appendices B, C and D for Studies 1, 2 and 3 respectively). These were created in consultation with the young people’s advisory group who provided guidance on the use of language and the suitability of procedures.

The background questionnaire collected the following socio-demographic information: age; gender; ethnicity; postcode and occupation. In addition, the questionnaire also asked about participants’ use of legal highs. As NPS use is more likely for young people who use illicit drugs (Barnard et al., 2014; Bonar, 2014; Carhart-Harris et al., 2011; Freeman et al., 2012; Kelleher et al., 2011; NAW, 2015; Schifano et al., 2012; Van Hout, 2014; Winstock et al., 2010), and drug use is more likely for young people whose friends use psychoactive substances (Dinges & Oetting, 1993; Mason et al., 2017), participants were also asked about their use of illicit psychoactive substances and whether or not they believed their friends used NPS or illicit drugs. The participant information sheet provided information about the study including confidentiality procedures, contact details for further information or complaints, safety information and a description of legal highs.

## Analytical approach

The choice of analytical approach was not straightforward as there are few clearly agreed rules or procedures for analysing qualitative data (Spencer, Ritchie & O’Conner, 2003). Also, there is a tension within the needs of the study because, on the one hand, there is a need to relate NPS behaviour to prescriptive structures in existing theoretical models, while on the other hand there is a need to explore in an unconstrained way what is a new topic for investigation.

While the use of a theory-driven approach was preferable from an intervention perspective, there are dangers inherent in attempting to apply existing theory to a novel behaviour, as uniquely important aspects of the behaviour or context can become obscured, which can then impact intervention efficacy. While the exploratory perspective favoured the use of bottom-up inductive methods that aim to generate theoretical constructs from the data, the theory-driven intervention approach favoured top-down a priori methods that aim to fit data to existing theoretical models and their constructs.

In relation to the philosophy and practice of analysing qualitative data, existing schools of thought and their methods and tools were reviewed for suitability. The focus on explanatory theory brought the research into alignment with some qualitative approaches more than others. Much of the compatibility of approaches rests on the philosophical underpinnings of the various schools of thought, and in this instance, the natural alignment of explanatory theory with a positivist tradition was seen as less compatible with the more interpretivist and constructivist stances that typically underpin qualitative methods such as discourse analysis and phenomenological analysis (Bryman, 1988; Silverman, 1993; Snape & Spencer, 2003). While grounded theory is an approach that offers a clearly described methodology for the generation of explanatory theory from qualitative data, the focus placed on existing theory within this research violates one of the core principles of grounded theory. To challenge the bias introduced by existing theoretical accounts, grounded theory requires that data is produced and analysed, as far possible, without reference to existing theory.

In the absence of a well-established and validated analytical method suitable for application to this research a method based on thematic network analysis (Attride-Stirling, 2001) was used. It is intended that the method will be applied with as much transparency as practicable to maintain credibility and therefore enhance the validity of the approach (Attride-Stirling, 2001; Maggs-Rapport 2001; Snape & Spencer, 2003).

To balance the tension between the aim of connecting NPS behaviour with existing theory and the exploratory aims of the study, Studies 1 and 2 used a theory-based approach to focus group question development with an inductive approach to data analysis. In this way, the data produced captured the types of data most relevant for assessing model fit, but interpretation of the data was not constrained by the model constructs and novel themes and concepts were free to emerge during analysis.

### Analytical approach: Study 1

For study 1, data was analysed using thematic network analysis (Attride-Stirling, 2001). Thematic network analysis is an analytical tool that draws upon well-known techniques to systematically organise qualitative data in a step-by-step process that aids the identification and presentation of concepts inherent within rich textual data and the relationships between them. The thematic network approach draws upon guiding principles and methodological steps used in other well-known analytic techniques such as grounded theory (Corbin and Strauss, 1990; Glaser and Strauss, 1967) and framework analysis (Ritchie and Spencer, 1994); it brings these together with the principles of argumentation theory (Toulmin, 1958). The thematic network approach sets out a series of steps for breaking up text, identifying the explicit rationalisations that people make and the implications signified by those rationalisations. Data is analysed inductively with three levels of abstraction: 1) lowest-order premises evident in the text (Basic Themes); 2) categories of basic themes grouped together to summarize more abstract principles (Organising Themes); 3) super-ordinate themes encapsulating the principal metaphors in the text as a whole (Global Themes). To aid interpretation, the three levels of themes can then be represented as a network depicting the salient themes at each of the three levels and illustrating the relationships between them.

#### Development of the focus group questions

The categories of the social cognitive model construct used in the focus group question development were: (i) reasons, (ii) risk perceptions, (iii) behavioural beliefs, (iv) normative beliefs, (v) identity and (vi) control beliefs (see Section 4.5.7 for development of the model construct categories).

To facilitate the expression of unconstrained responses, the focus group questions also included general non-theory-based questions with young people invited to express their own thoughts and perspectives prior to being asked the theory-based questions. In addition, questions were semi-structured and open-ended so that their choice of responses was not limited (Gubrium & Holstein, 2002, McCracken, 1988). In this way young people participating in the study were not limited to responses that focus on, and therefore reinforce, existing model constructs and the data produced was more contextually grounded data and sensitive to young people’s own perspectives. The questions devised for Studies 1 and 2 are included within each study report presented in Chapters 5 and 6 respectively.

### Data analysis

Focus group session recordings were transcribed verbatim into digital form using the transcription software Express Scribe Pro (NCH Pty Ltd., Version 5, 2015). Transcripts were then imported as Microsoft Word files into Nvivo qualitative software analysis program (QSR International Pty Ltd., Versions 10, 2012 & 11, 2017) for analysis. Transcripts were analysed using a three-step procedure, as described in Section 4.7.4 blow, similar to that described in thematic network analysis by Attride-Stirling (2001). For the sake of clarity, we set out below our working definitions of the concepts and categories used in the analysis.

### Terminology

#### **Meaningful utterances**

Meaningful utterances are defined here as any extract from the transcripts from all participants’ statements that encapsulated a single point of interest relevant to the area of study. These lowest-order meaning units can vary from a single word to a few sentences but encompass a concept, belief or meaningful idea. The set of meaningful utterances contains many duplicates (having the same words with the same meaning) and near duplicates (having different words but the same meaning). Meaningful utterances include an undifferentiated, heterogeneous mixture of beliefs, reasons, motivations and other statements.

#### Basic theme

According to Attride-Stirling (2001) basic themes are lowest-order premises evident in the text. The term is used here to refer to the set of meaningful utterances after duplicates have been removed and near duplicates consolidated. They remain close to the text and offer little explanatory meaning when viewed in isolation. Basic themes comprise an undifferentiated, heterogeneous mixture of beliefs, reasons, motivations and other statements.

#### Organising theme

Organising themes are clusters of basic themes grouped together to summarise more abstract principles (Attride-Stirling, 2001). An organising theme groups together basic themes which are closely related in meaning or sentiment. These represent a consolidation of the basic themes into a comprehensive set of unique statements. Although they are more abstract interpretations of the basic themes they remain closely rooted to the data. Organising themes create a manageable set of statements which retain the fundamental ideas embedded in the basic themes, without over-consolidating to the point where unique meaning is lost. Organising themes are made up of a mixture of beliefs, reasons and motivations.

#### Global theme

Global themes are super-ordinate themes encapsulating the principal metaphors in the text as a whole (Attride-Stirling, 2001). Each global theme encompasses a unique set of organising themes to provide the next level of abstraction. Global themes result from scrutiny and interpretation of the organising themes and are selected to provide the most suitable summary of the core domains of meaning, influence and/or issues. Global themes represent reasons and motivations.

### Process

The data were analysed in three stages. Firstly, a comprehensive analysis of the content of the transcripts was undertaken to develop and populate an analytic framework to aid further analysis of the data. Secondly, data from the analytic framework was interrogated to identify the motivations underlying young people’s use of NPS and avoidance of use. Thirdly, constructs from the social cognition models were assessed against the motives to determine the goodness of fit, and the selected model constructs were then used to organise a set of behavioural beliefs suggested for use in interventions.

### Stage 1: Development of the analytic framework

A four-step process was used which incorporated the three-step process described by Attride-Stirling following an initial coding step. The first step involved the identification of all meaningful utterances within all three transcripts which were each coded under a label that captured the main sentiment of the statement. At this stage, there was a large number of codes with many near duplicates. Statements with the same meaning were consolidated during initial coding. The second step was the further consolidation of statements to form the set of basic themes. Once the initial coding pass was completed, the transcripts were re-read, and

coding refined to produce a set of codes which collated together statements with high semantic relatedness but retained as much distinctiveness as was feasible.

In the third step, these basic themes were reduced into a smaller number of organising themes to make the data more manageable for analysis and interpretation. The basic themes were reviewed and grouped into clusters with similar meaning which were then assigned to an organising theme. At this stage, a second coder read samples from the transcripts and assessed the grouping of basic themes into organising themes. Both coders then discussed the differences in coding until a consensus was reached. The organising themes represented the core of the analytical framework. Each organising theme was then assessed as either encouraging, or discouraging, the use of NPS. For the fourth step, global themes were created which aimed to bring together conceptually related organising themes whilst maintaining important distinctions within the data. After a first pass, an initial set of global themes were assessed by the second coder. The global themes were reviewed and discussed until a consensus was reached and the thematic framework was finalised.

### Stage 2: Identification of underlying motivations

Motivations were identified using a two-step process. Firstly, based on the definition of motivation as the processes whereby goal-directed activities are energised, directed and sustained (Schunk, Pintrich, & Meece, 2008), the content of the organisational themes was assessed to establish whether they were behavioural beliefs oriented towards discernible goals. A belief was considered as goal-directed when it explicitly or implicitly incorporated an outcome expectancy. Once a subset of goal-directed beliefs was identified, their relevant outcome expectancies were specified (e.g. no harm will result from use / less harm will result from use / harm will result from use). Outcome expectancies were then grouped into themes (e.g. health) and these themes then formed the basis of the motivational domains identified as relevant to NPS related behaviour (e.g. health motives).

### Stage 3: Mapping salient beliefs to model constructs

The motivation domains identified were assessed for likeness against the full set of model constructs derived from the five social cognition models used in the development of the study (see Table 4.1 for an overview of the model constructs). The model constructs with the greatest similarity to the motivational domains were selected for use.

The behavioural beliefs identified in stage 2 were then mapped onto the selected model constructs to provide a set of beliefs associated with each construct. The set of behavioural beliefs were evaluated for frequency and commonality to create a final set of salient beliefs to complement each model construct. The included beliefs were those expressed by participants in all three focus groups and mentioned on at least three separate occasions.

## Analytical approach: Study 2

Study 2 followed the same general approach and analytical framework as Study 1 but with several variations. Firstly, the transcripts were coded using the organising themes identified in Study 1. Where new statements were identified, which did not demonstrate a good fit with the existing coding categories, new codes were created. The frequency with which each statement was expressed within the three focus groups was recorded. The coded statements were then grouped into global themes using two methods, one open sorting task and one closed sorting task. The purpose of the tasks was to provide a reliability check to ensure the data was not inappropriately fitted to the pre-existing global themes developed to describe the Study 1 data. The open sorting task was undertaken first and placed no constraints on the development of themes. This was then followed by a closed sorting task in which the coded statements were organised into the global themes identified in Study 1. The two sorting tasks were repeated by a second coder and the results compared and discussed until a consensus was reached.

### Pre- and post-ban comparison

Differences in the pre- and post-ban data were assessed in relation to organising and global themes to obtain a sense of differences in the overall emphasis of the global themes, the extent to which the types of reasons elicited differed and the frequency of with which each specific reason was expressed. To aid interpretation of the differences between the pre-ban and post-ban data a set of change indices were created. It should be noted that the difference scores were not intended as a rigorous statistical measure of differences but merely an indicator of where the differences exist between the two data sets to guide discussion.

#### Raw reference difference score

The difference in the number of statements referring to each global theme in the pre- and post-ban data was calculated to create a raw reference difference score. Each global theme was then assigned a rank based on its raw reference difference score.

#### Percentage coverage difference score

The overall emphasis of each global theme was represented by the total number of statements referencing that theme as a proportion of all statements extracted from the full set of transcripts. The use of a percentage coverage measure in addition to a raw reference count was to account for the difference in the total number of statements extracted in the two studies. To compare variation in overall emphasis of each global theme, the differences between the percentage coverage for each global theme in Study 1 and 2 were calculated to create a difference measure for the percentage coverage. The global themes were then assigned a rank according to the percentage coverage difference score.

#### Relative emphasis difference score

Each global theme in both the pre-ban and post-ban data was ranked according to the number of statements referring to that theme. A relative emphasis difference score was then created to

show the difference in rank for each global theme between the two sets of data. Each global theme was assigned a rank based on the relative emphasis difference score.

#### Organising theme difference score

The organising themes within each global theme were compared for the pre- and post-ban data. The number of novel and absent organising themes were totalled to create an organising theme difference measure. The global themes were then assigned a rank according to the organising theme difference score.

#### Overall difference score

An overall difference score was calculated for each global theme by creating a sum of its rank for each of the difference scores, i.e. it's rank for the raw references difference score; the percentage coverage difference score; the relative emphasis difference score; and the organising theme difference score.

## Analytical approach: Study 3

For Study 3, data was analysed using framework analysis (Ritchie & Spencer, 1994). For this study, a different analytical approach was chosen than in the first two studies. For Studies 1 and 2 an analytical approach was chosen that was best suited to inductive exploratory analysis. Thematic network analysis had been chosen as the three-step coding process which starts with the smallest unit of meaning and works up to the highest level of abstraction was ideal for the bottom-up development of a model as was desired for those studies. However, the third study was not designed as an exploratory study and is less well suited to an approach optimised for identification of emergent themes and iterative development of theory. Instead, framework analysis (Ritche & Spencer, 1994) was selected as it was determined to be better suited to the aims of Study 3.

The focus of Study 3 is to provide answers to specific questions and identification of a-priori themes based on concepts drawn from the earlier studies and existing literature. Framework analysis (Ritche & Spencer, 1994) is best suited to the case-wise analysis of data and initial organisation usually starts out with relatively broad high-level themes. Thus, the categorical, case-wise charting methodology of framework analysis offers an efficient way to organise the data into answers to specific questions as well as identifying reoccurring themes within and across the answers of each focus group.

Framework analysis is a qualitative data analysis approach that is becoming increasingly popular within social sciences and has been used effectively with health and policy related research (Furber 2010; Gale et al., 2013; Ritchie & Spencer 1994; Smith & Firth 2011; Srivastava & Thomson 2009; Swallow, Newton & Van Lottum 2003) and more recently has been applied within the field of qualitative psychology (Parkinson, Eatouch & Holmes, 2016). Framework analysis is well suited for research that has specific research questions or a priori issues but it is not limited to pre-defined categories. As the focus of Study 3 was to consider young people’s perspectives on possible interventions, the parameters of analysis were explicitly focused on specific attributes of interventions, but nevertheless, we did not want to constrain the creativity of participants’ own interpretation of the problem and potential solutions. The flexibility of framework analysis to emphasise both predefined and emergent themes provided balance between the predefined elements of the study whilst allowing the emergence of the unexpected (Parkinson, Eatouch & Holmes, 2016).

There are five stages within the framework approach outlined by Ritchie and Spencer (1994) that describe the processes which guide the systematic analysis of the data: familiarization; identifying a framework; indexing; charting; and mapping and interpretation. The familiarisation stage aimed to get a holistic sense of what is going on within the data set and develop an awareness of the key issues and common concerns of the participants. In this stage the transcripts were reviewed several times and notes made based on initial impressions. These thoughts were then used together with the specific research objectives in the second

stage to guide the identification of a suitable analytic framework. The aim of the analytic framework was to organise the data systematically for later retrieval, exploration, and analysis during the final mapping and interpretation stage. In the third and fourth phases, indexing and charting, transcripts were indexed using codes developed to represent the analytic framework, and the coded sections extracted and organised into a matrix charting the content of each focus group against each code. At this stage a second coder independently indexed and charted samples of each transcript, the results were compared, and discrepancies were discussed until consensus was reached. Once a consensus was reached, and the data was organised into a more manageable format, the indexed data for each chart category was summarised. In the fifth and final phase, mapping and interpretation, the summarised sections of the framework matrix were analysed to develop a set of overarching themes.

# Study 1: Young people’s motivations for NPS use and non-use prior to the introduction of the Psychoactive Substances Act 2016

## Introduction

This chapter documents the methods and findings of a study designed to explore young people’s motivations for NPS use and non-use. The study was designed and carried out prior to the implementation of the Psychoactive Substances Act 2016.

Young people are thought to be particularly vulnerable to acute harms and fatal toxic reactions resulting from NPS consumption (ONS, 2015; EMCDDA, 2018) as not only are they twice as likely to use NPS than adults (CSEW, 2015), but evidence suggests they are also more likely to misjudge the risks associated with use (Sheridan & Butler, 2010; Rees et al., 2015). Underestimation of the risks of NPS use by this age group is thought to be because they have a more reckless attitude (Van Hout & Brennan, 2011), greater drug naivety (Barnard et al., 2014) and a tendency to associate the legal status of NPS with low potency and perceptions of safety (Barnard et al., 2014; Every-Palmer, 2011; Rees et. al., 2015; Sheridan & Butler, 2010). However, the NPS-related beliefs of young people in the UK have not previously been specifically investigated, and no studies report on young people’s motives for using NPS in the UK that are not predominantly focused on experienced drug users (see Chapter 3).

Understanding young people’s motivations for using or not using NPS, and the beliefs and reasons that impact those motivations, can be used inform the development of interventions to prevent or reduce NPS use in that age group (The Lancet, 2010). Therefore, this study aims to elicit the NPS-related beliefs, reasons and motivations of a sample of young people in the UK. Since avoidance of NPS use may be motivated by different goals than use of NPS (Richetin, Conner & Perugini, 2011), the study also aims to explore differences in the beliefs, reasons and motivations supporting use and non-use. In addition, a further aim of the study is to link young people’s beliefs, reasons and motivations with relevant social cognition theories, as intervention effectiveness can be further enhanced by the use of theory in intervention development (Brotherhood et al., 2013; Conner & Norman, 2005; Noar et al., 2007; Prestwich, Webb & Conner, 2015; UNODC, 2018; Webb et al., 2010).

## Research aims and objectives:

The specific research aims of this study were to investigate why young people do, or do not, use NPS for the purpose of identifying which theoretical framework/s are appropriate for use in NPS-related behaviour change interventions. The objectives of the study were to:

1. Elicit and analyse young people’s beliefs, reasons and motivations for NPS use and non-use
2. Identify motivations underlying young people’s NPS use and non- use
3. Identify salient behavioural beliefs encouraging and discouraging NPS use and non-use
4. Assess the suitability and applicability of a variety of social cognition models of behaviour

## Method overview

The recommendations of Epton et al., (2014) were followed to develop a belief elicitation study in line with the first stage of their three-stage method for the development of theory-based health messages. A focus group methodology was used for collecting data from a diverse sample of young people (aged 15-25) in collaboration with community groups in Sheffield. A set of focus group questions were devised that incorporated use of theory-based questions grounded in the theoretical constructs of the health belief model (HBM; Rosenstock, 1966; Becker, 1974), protection motivation theory (PMT; Rogers, 1975), theory of planned behaviour (TPB; Ajzen, 1991) prototype/willingness model (PWM; Gibbons, Gerrard, Blanton, & Russell, 1998) and behavioural reasoning theory (BRT; Westaby, 2005; see Chapter 4 Section 4.5 for a description of each model). The qualitative data collected was analysed using thematic analysis techniques complemented by an analysis of the frequency of belief expression. The method is described in full detail in Chapter 4.

Ethical approval was granted by the Department of Psychology Research Ethics Committee at the University of Sheffield.

### Participants and procedure

Three focus groups were conducted between April 2015 and February 2016. Thirty participants were recruited from three community groups based in Sheffield city centre: Sheffield Young Advisors (SYA), Young Healthwatch Sheffield (YHS) and Sheffield Interchange (SIC). A more in-depth description of the community groups, their role in the research and the focus group methodology is provided in Chapter 4 Section 4.6.1.

Participants were a diverse set of young people aged 15 to 25 from a range of postcode areas of Sheffield. Participants were recruited in collaboration with community group facilitators and asked if they (and the community group manager if they were under 16) would consent to take part. After deciding to take part, participants filled in the consent and a background information questionnaire and were provided with a participant information sheet form (see Appendices B, C and D for Studies 1, 2 and 3 respectively). Participants were then asked a series of semi-structured questions with prompts. Group discussion took between about 40 to 60 minutes and was recorded using a digital voice recorder.

### Target behaviour

Throughout the focus group sessions NPS were referred to by the colloquial term 'legal highs' which was defined as:

'the common name for Novel Psychoactive Substances. These are chemical substances that are sold legally but produce the same, or similar effects, to illegal drugs such as cannabis, cocaine, ecstasy and heroin. They are psychoactive which means they have mood-altering properties and can act as stimulants, sedatives, hallucinogens and psychedelics.'

Performance of the target behaviour was defined as 'taking legal highs' while non-performance was defined as 'not taking legal highs'.

### Measures

The background questionnaire collected the following socio-demographic information: age; gender; ethnicity; postcode and occupation. In addition, the questionnaire also asked about participants’ use of legal highs and illicit drugs in addition to whether they believed their friends used NPS or illicit drugs. The participant information sheet provided information about the study including confidentiality procedures, contact details for further information or complaints, safety information and a description of legal highs (see Chapter 4 Section 4.6.8 for more information about the development of the background questionnaire and information sheet and see Appendices B, C and D for Studies 1, 2 and 3 respectively).

### Focus group questions

Open-ended questions were used to elicit young people's beliefs about NPS. To encourage the inclusion of young people's own perspectives and spontaneous beliefs, general non theory-based questions were included at the outset and the conclusion of each focus group discussion. In addition to the general questions, a series of theory-based questions were developed around the constructs of the five social cognition models selected for use in this study. A description of the models and a detailed description of the development of a set of model construct categories used to inform the theory-based questions is provided in Chapter 4 (see Sections 4.5.7 and 4.7.1). Constructs from the models were grouped according to relatedness, producing six categories of construct type in addition to demographic factors and past behaviour. The socio-cognitive construct categories used as a guide for question development were; (i) reasons, (ii) risk perceptions (iii) behavioural beliefs (iv) normative beliefs (v) identity and (vi) control beliefs. The focus group questions and their relationship to the model construct categories are shown in Table 6-1. The order in which the theory-based questions were presented to participants was varied for each focus group.

**Table 6-1. Focus group questions and their relationship to model constructs**

|  |  |
| --- | --- |
| **Model construct**  Questions and prompt | |
| **General context** | |
| 1. Why is the issue of Legal Highs important to you/young people? | |
|  | What makes it an important issue to tackle? |
| **Reasons** | |
| 1. What are the main reasons for why young people take Legal Highs? | |
|  | Why do they do it? |
| 1. What are the main reasons for young people deciding not to take Legal Highs? | |
|  | Why do they decide not to? |
| **Risk perceptions/ Behavioural beliefs** | |
| 1. What are the advantages or positive things about taking Legal Highs? | |
|  | What’s good / enjoyable about it? Why? |
| 1. What are the disadvantages or negative things about taking Legal Highs? | |
|  | What’s bad / unenjoyable about it? Why? |
| 1. What are the advantages or positive things about not taking Legal Highs? | |
|  | What’s good / enjoyable about it? Why? |
| 1. What are the disadvantages or negative things about not taking Legal Highs? | |
|  | What’s bad / unenjoyable about it? Why? |
| **Normative beliefs** | |
| 1. Who would approve of a young person taking Legal Highs? | |
|  | Who would think it is a good idea? Why? |

|  |  |  |
| --- | --- | --- |
| **Table 6-1. Continued** | | |
| **Normative beliefs continued** | | |
| 1. Who would disapprove of a young person taking Legal Highs? | | |
| Who would think it is a bad idea? Why? | |
| 1. Who would approve of a young person not taking Legal Highs? | | |
|  | Who would think it is a good idea? Why? | |
| 1. Who would disapprove of young people a young person not taking Legal Highs? | | |
|  | Who would think it is a bad idea? Why? | |
| **Identity** | | |
| 1. What is your view of the typical young person who takes Legal Highs? | | |
|  | How would you describe them? Is it a positive or negative view? | |
| 1. What is your view of the typical young person who does not take Legal Highs? | | |
|  | How would you describe them? Is it a positive or negative view? | |
| **Control beliefs** | | |
| 1. What things make it more likely that young people might take Legal Highs? | | |
|  | What would make it easier/more likely to happen? Why? | |
| 1. What things make it less likely that young people might take Legal Highs? | | |
|  | What would make it more difficult/less likely to happen? Why? | |
| 1. What things make it more likely for young people to decide not to take Legal Highs? | | |
|  | What would make it easier/more likely to happen? Why? | |
| 1. What things make it less likely for young people to decide not to take Legal Highs? | | |
|  | What would make it more difficult/less likely to happen? Why? | |
| **General context** | | |
| 1. Any final comments or issues we haven’t covered? | | |

## Results

### Sample characteristics

Overall, 30 young people participated in the focus groups and the sample demographics are shown in Table 6-2. The sample population were mostly female (70% female) and ranged in age from 15 to 25 (*Median* = 18.5). Most participants (67%) were in tertiary education, with 26% in full or part-time employment and 20% reported as unemployed. The sample included participants from diverse ethnic and socio-economic backgrounds.

#### Previous use of NPS

Of the sample population, 20% reported personal experience of using NPS. It is noted that this was higher than might be expected based on the general population estimates for young people in the UK which vary between about 2 – 10% (see Chapter 2). All participants who had previously used NPS had also used illicit drugs.

#### Previous use of illicit drugs

At 50%, participants’ reported use of illicit drugs was also higher than estimates for young people in the general population, which according to the 2015/16 Crime Survey for England and Wales is 35%. More than half of the participants believed that one or more of their friends had used legal highs (57%) while the majority had friends with experience of taking illicit drugs (83%).

**Table 6-2: Study 1 sample characteristics**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Focus group** | |  |  |  |  |
| **Characteristic** | **1** | **2** | | **3** | **All** | **%** |
| **Number of participants** | 10 | 8 | | 12 | 30 | - |
| **Gender identification** |  |  | |  |  |  |
| Male | 2 | 2 | | 5 | 9 | 30 % |
| Female | 8 | 6 | | 7 | 21 | 70 % |
| **Age (years)** |  |  | |  |  |  |
| Youngest | 16 | 16 | | 15 | 15 | - |
| Oldest | 24 | 24 | | 25 | 25 | - |
| Median | 17.5 | 19 | | 20 | 18.5 | - |
| **Occupation[[9]](#footnote-9)** |  |  | |  |  |  |
| Student | 8 | 3 | | 9 | 20 | 67 % |
| Employed | 2 | 2 | | 3 | 7 | 23 % |
| Unemployed | 0 | 6 | | 3 | 9 | 30 % |
| **Ethnicity** |  |  | |  |  |  |
| White British | 6 | 5 | | 7 | 18 | 60 % |
| Black /Black British | 4 | 1 | | 1 | 6 | 20 % |
| Asian /Asian British | 0 | 2 | | 3 | 5 | 17 % |
| Other | 1 | 0 | | 1 | 1 | 3 % |
| **Previous drug use** |  |  | |  |  |  |
| NPS | 1 | 2 | | 3 | 6 | 20 % |
| Illicit drugs | 4 | 6 | | 5 | 15 | 50 % |
| **Friends’ drug use** |  |  | |  |  |  |
| NPS | 6 | 4 | | 7 | 17 | 57 % |
| Illicit drugs | 8 | 7 | | 10 | 25 | 83 % |

### **Substances**

The young people in the focus groups generally referred to NPS as legal highs, consistent with the wording used in the questions. However, the following substances were named spontaneously by participants: synthetic cannabinoids; spice, black mamba, clockwork orange and Michael Jordan; synthetic cathinones; mephedrone and bath salts; and the inhalant gas nitrous oxide.

### Data analysis

A four-step thematic analysis procedure was used to organise and interpret the data as described in section 4.7 in Chapter 4.

In the first and second steps, 750 meaningful statements were identified within the focus group transcripts which were analysed and coded into 343 basic themes. In the third step, the basic themes were further consolidated into organising themes. At this stage, a second coder assessed the grouping of basic themes into the organising themes. Initial agreement was 81% following which both coders then discussed the differences in coding until a consensus was reached. The final coding structure comprised of 52 organising themes. Of these themes, 33 were assessed as encouraging use of NPS, while 19 were assessed as discouraging use of NPS. In the fourth step, an initial pass yielded five global themes. However, it was decided that the level of abstraction was too great, and the data was being oversimplified. A second pass produced 9 global themes which were assessed by the second coder. A consensus was reached after an additional global theme was included to account for statements which were presented as relative to use of traditional illicit drugs rather than oriented toward NPS use or abstinence. This brought the final number of global themes to 10, all of which were represented in the set of statements encouraging use of NPS, while 7 were represented among the statements discouraging use.

#### Basic themes

A detailed description of which basic themes are included under each organising theme and global theme is shown in Appendix B.

#### Global themes and organising themes

Table 6-3 shows the global themes in rank order according to their overall frequency of expression within participants’ discussions. Tables 6-4 and 6-5 show separately the frequencies and ranking for reasons encouraging use and reasons discouraging use of NPS. Frequency is shown by the number of individual meaningful statements referencing each global theme, and the percentage coverage presents this as a proportion of the total number of meaningful statements coded (*n* = 750).

**Table 6-3. Global themes: Reasons and motives for and against NPS use**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Rank** | **Theme** | | **Number of references** | | **Percentage of total** | |
|  |  |  | |  | |  |
| **1.** | Risk perception | 222 | | 30 % | |  |
| **2.** | Accessibility | 82 | | 11 % | |  |
| **3.** | Authority | 74 | | 10 % | |  |
| **4.** | Pleasure | 73 | | 10 % | |  |
| **5.** | Legal status | 65 | | 9 % | |  |
| **6.** | Identity | 58 | | 8 % | |  |
| **7.** | Substitution | 54 | | 8 % | |  |
| **8.** | Social influences | 50 | | 7 % | |  |
| **9.** | Curiosity | 35 | | 5 % | |  |
| **10.** | Coping | 33 | | 4 % | |  |
|  |  |  | |  | |  |
|  | **Total** | **750** | | **100 %** | |  |

**Table 6-4. Global themes: Reasons and motives encouraging use of NPS**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Rank** | | **Theme** | **Number of references** | | | **Percentage of total (750)** | |
|  |  | | |  |  | |  |
| **1.** | Accessibility / easy to access | | | 79 | 11 % | |  |
| **2.** | Legal status / legal | | | 65 | 9 % | |  |
| **3.** | Risk perception / safety | | | 62 | 8 % | |  |
| **4.** | Authority / approval | | | 51 | 7 % | |  |
| **5.** | Pleasure / pleasant effects | | | 46 | 6 % | |  |
| **6.** | Social influences / approval | | | 42 | 6 % | |  |
| **7.** | Identity / positive user types | | | 37 | 5 % | |  |
| **8.** | Curiosity | | | 35 | 5 % | |  |
| **9.** | Coping | | | 33 | 4 % | |  |
| **10.** | Substitution / use NPS | | | 22 | 3 % | |  |
|  |  | | |  |  | |  |
|  | **Total** | | | **472** | **63 %** | |  |

**Table 6-5. Global themes: Reasons discouraging use of NPS**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Rank** | | **Theme** | **Number of references** | | | **Percentage of total (750)** | |
|  |  | | |  |  | |  | |
| **1.** | Risk perception / harm | | | 160 | 21 % | |  | |
| **2.** | Substitution / traditional drugs | | | 36 | 5 % | |  | |
| **3.** | Pleasure / unpleasant effects | | | 27 | 4 % | |  | |
| **4.** | Authority / disapproval | | | 23 | 3 % | |  | |
| **5.** | Identity / negative user types | | | 21 | 3 % | |  | |
| **6.** | Social influences / disapproval | | | 8 | 1 % | |  | |
| **7.** | Accessibility / hard to access | | | 3 | < 1 % | |  | |
|  |  | | |  |  | |  | |
|  | **Total** | | | **278** | **37 %** | |  | |

Tables 6-6 and 6-7 show statements supporting the use and non-use of NPS grouped by global theme and organising theme (see Chapter 7 section 4.7.3). The frequency with which each statement was expressed is shown in the table together with the number of focus group transcripts in which it occurred.

**Table 6-6. Beliefs, reasons and motives encouraging use of NPS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Global theme** | | **Organising theme** | **Freq** | **FGs** |
| **n** | | |  |  |
| **Accessibility** | **79** | Sold in shops | 32 | 3 |
|  | | Easy to get | 30 | 3 |
|  | | Cheap | 17 | 3 |
|  | | Sold by dealers | 7 | 3 |
| **N** | | |  |  |
| **Legal status** | **65** | Because they are legal | 19 | 3 |
|  | | Won’t get into trouble because it’s legal | 14 | 3 |
|  | | Legal status doesn't matter | 11 | 3 |
|  | | Legal means safe to use | 8 | 3 |
|  | | Fit in without doing something illegal | 6 | 2 |
|  | | |  |  |
| **Risk perception** | **62** | Lack of risk awareness / education | 36 | 3 |
|  |  | Safe to use | 13 | 3 |
|  | | Risk denial / try another | 13 | 3 |
| **N** | | |  |  |
| **Authority** | **51** | Won't get into trouble | 20 | 3 |
|  | | Rebellion / do what you want | 20 | 3 |
|  | | Parents approve of use | 6 | 1 |
|  | | Government approves of use | 5 | 2 |
| **N** | | |  |  |
| **Pleasure** | **46** | For the high | 34 | 3 |
|  | | Enjoyable / fun | 12 | 3 |
| **N** | | |  |  |
| **Social influences** | **42** | Friends approval / peer pressure | 28 | 3 |
|  | | Normal / acceptable to use | 14 | 3 |
| **N** | | |  |  |
| **Identity** | **37** | Users are from good backgrounds | 19 | 3 |
|  |  | Anyone could be a user | 13 | 3 |
|  | | Non-users are straight | 5 | 2 |
| **N** | | |  |  |
| **Curiosity** | **35** | Curiosity | 21 | 3 |
|  | | Appealing marketing | 9 | 2 |
|  | | Awareness encourages use | 5 | 2 |
| **N** | | |  |  |
| **Coping** | **33** | Coping / escapism | 14 | 3 |
|  |  | Tough life / vulnerable | 10 | 3 |
|  |  | Addiction | 9 | 2 |
|  | |  |  |  |
| **Table 6-6. Continued** | | | | |
| **Global theme** | | **Organising theme** | **Freq** | **FGs** |
| **Substitution** | **22** | Traditional drugs hard to get | 9 | 3 |
|  | | Don't want to do illicit drugs | 7 | 2 |
|  | | Safer than traditional drugs | 4 | 3 |
|  | | Cheaper than traditional drugs | 2 | 2 |
| **N** | | |  |  |
| **N** | | |  |  |

**Table 6-7. Beliefs, reasons and motives discouraging use of NPS**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Global theme** | | | | **Organising theme** | **Freq** | **FGs** |
| **N** | | | | |  |  |
| **Risk perception** | **160** | | | Risk aware / educated / media awareness | 42 | 3 |
|  | | | | Not regulated / inconsistent ingredients | 30 | 3 |
|  | | | | Risks unknown / unknown effects | 25 | 3 |
|  | | | | Dangerous / deadly | 24 | 3 |
|  | | | | Too strong / lose control | 22 | 3 |
|  | | | | Harmful | 17 | 3 |
| **N** | | | | |  |  |
| **Substitution** | **36** | | | More dangerous than traditional drugs | 32 | 3 |
|  | | | | Traditional drugs are better | 4 | 1 |
| **N** | | | | |  |  |
| **Pleasure** | **27** | | | Unpleasant effects | 18 | 3 |
|  | | | | Bad trip | 9 | 3 |
| **N** | | | | |  |  |
| **Authority** | | **23** | | Parents disapprove of use | 13 | 3 |
|  |  | | | Authority figures disapprove | 10 | 2 |
| **N** | | | | |  |  |
| **Identity** | **21** | | | Users are underage kids | 8 | 2 |
|  |  | | | Non-users are clued up | 7 | 2 |
|  | | | | Users are homeless people | 6 | 1 |
| **N** | | | | |  |  |
| **Social influence** | **8** | | | Friends disapprove of use | 3 | 1 |
|  | | | | Socially unacceptable | 3 | 1 |
|  | | | | Resist social pressure | 2 | 1 |
| **N** | | | | |  |  |
| **Accessibility** | | | **3** | Waste of money | 3 | 3 |
| **N** | | | | |  |  |

### **Motivations and model fit**

Motivations were identified using the two-step process described in Chapter 4 Section 4.7.6. Table 8 presents the results as a set of outcome expectancies for taking NPS, comprising 12 expectancies for positive outcomes assesses as encouraging use of NPS, and 8 expectancies for negative outcomes assessed as discouraging use of NPS. The expectancies are shown in Table 6-8 mapped onto the 10 motivational domains and 5 corresponding social cognition model constructs. The 5 model constructs were selected based on their goodness of fit with the 10 motivational domains identified. See Chapter 4 Section 4.7.7 for a more detailed description of the selection process.

**Table 6-8. Taking NPS: Outcome expectancies, behavioural beliefs and motivations mapped onto social cognition model constructs**

|  |  |  |
| --- | --- | --- |
| **Model construct** *Motivational domain* | **Outcome expectancies for taking NPS** | |
|  | **Positive outcomes** | **Negative outcomes** |
| **Cognitive attitude** *Health* | No / less harm will result | Harm / more harm will result |
| **Affective attitude**  *Pleasure* | Gain pleasurable experience | Unpleasant experience will result |
| *Coping* | Avoid negative feelings |  |
| **Subjective norm** *Peers* | Gain peer approval  Avoid peer disapproval | Peer disapproval will result |
| *Parent / carer* | Gain parent / carer approval | Parent /carer disapproval will result |
| **Perceived behavioural** *Autonomy* **control / self-efficacy** | Avoid restrictions  Express freedom of choice / rebel | Fail to express freedom of choice |
| *Finances* | Affordable / more affordable | Waste money |
| *Effort* | Easy to get / easier to get |  |
| **Behavioural willingness** *Curiosity* | Gain experience |  |
| *Identity* | Gain positive user identity Avoid negative non-user identity | Loss of positive non-user identity  Gain negative user identity |

### Salient behavioural beliefs

Table 6-9 presents a list of the salient behavioural beliefs which have been extracted from the focus group data. The beliefs are organised in sets organised as encouraging and discouraging use of NPS and arranged according to their corresponding motivational domain and social cognition model constructs. See Chapter 4 Section 4.7.7 for a more detailed description of the extraction and mapping process. Each salient belief is expressed as a meaningful phrase which is shown together with frequency data and a rank order based on the frequency of expression within the three focus groups.

**Table 6-9. Salient behavioural beliefs discouraging and encouraging use of NPS**

|  |  |  |  |
| --- | --- | --- | --- |
| **Model construct**  *Motivational domain*  Behavioural belief | **Freq** | | **Rank** |
| **Cognitive attitude** | |  |  |
| *Health beliefs discouraging use* | |  |  |
| Legal highs are more dangerous than classic illegal drugs | | 32 | 2 |
| Legal highs aren’t tested, it’s a different mix of chemicals every time | | 30 | = 3 |
| I don’t know what’s in them, the risks are unknown, anything can happen | | 25 | 6 |
| Legal highs are deadly, even if one is ok, the next one could kill me | | 24 | 7 |
| Legal highs are too strong, I’ll lose control and end up in a right state | | 22 | 8 |
| Legal highs are bad for me, they could make me really sick | | 17 | = 14 |
| *Health beliefs encouraging use* | |  |  |
| If they are legal, they must be safe because they’ve been tested | | 13 | = 17 |
| Bad things happen to other people, I’ll be fine if I take a legal high | | 9 | = 23 |
| Legal highs are safer than classic illegal drugs | | 4 | = 34 |
| Just because one type of legal high is bad, it doesn’t mean they all are | | 4 | = 34 |
| **Affective attitude** | |  |  |
| *Pleasure-based beliefs discouraging use* | |  |  |
| I’ll feel awful if I take a legal high, the trip is really bad | | 18 | 13 |
| The after effects are horrible, I’ll regret taking it | | 9 | = 23 |
| The effects of legal highs are much worse than classic drugs | | 4 | = 34 |
| *Pleasure-based beliefs encouraging use* | |  |  |
| I’ll feel good if I take a legal high, the high is pleasurable | | 34 | 1 |
| Taking legal highs is enjoyable, a great way to have a laugh | | 12 | 20 |
|  | |  |  |
| **Table 6-9. Continued** | | | |
| **Model construct**  *Motivational domain*  Behavioural belief | **Freq** | | **Rank** |
| *Coping beliefs encouraging use* | |  |  |
| Taking legal highs can help me forget my worries | | 8 | = 25 |
| Taking legal highs can help me relax | | 6 | = 30 |
| **Subjective norms** | |  |  |
| *Peer-oriented beliefs encouraging use* | |  |  |
| My friends would approve of me taking legal highs | | 28 | 5 |
| It’s normal to take legal highs, everyone does it | | 14 | 16 |
| Because legal highs are legal, I can fit in without doing something illegal | | 4 | = 34 |
| *Parent-oriented beliefs discouraging use* | |  |  |
| I’ll get in trouble if my parents catch me taking legal highs | | 13 | = 17 |
| **Behavioural willingness** | |  |  |
| *Prototype beliefs encouraging use* | |  |  |
| Smart people from good backgrounds use legal highs | | 19 | = 11 |
| Anyone can be a user, there are no stereotypes | | 13 | = 17 |
| *Curiosity encouraging use* | |  |  |
| I’m the kind of person who just has to try legal highs for myself | | 21 | 9 |
| **Perceived behavioural control / self-efficacy** | |  |  |
| *Autonomy beliefs encouraging use* | |  |  |
| I won’t get a criminal record for using legal highs | | 20 | 10 |
| It’s fine to use legal highs because they are legal | | 19 | = 11 |
| I’ll take legal highs if I want to, it’s my choice | | 10 | = 21 |
| Telling me not to take legal highs just makes me want to do them more | | 10 | = 21 |
| **Table 6-9. Continued** | | | |
| **Model construct**  *Motivational domain*  Behavioural belief | **Freq** | | **Rank** |
| *Financial beliefs discouraging use* | |  |  |
| Legal highs are a waste of money | | 3 | = 38 |
| *Financial beliefs encouraging use* | |  |  |
| Legal highs are a good way to have a cheap night out | | 17 | = 14 |
| *Effort beliefs encouraging use* | |  |  |
| Legal highs are easy to get hold of | | 30 | = 3 |
| Classic illegal drugs are hard to get hold of | | 7 | = 27 |

### **Description of themes and motivations**

The following sections provide a description of each global theme as follows: risk perception and health; accessibility financial motivation and effort; authority, parents approval and autonomy; drug effects and pleasure motives; legal status; social influences; user types; substitution; curiosity; and coping.

#### **Risk perception and health motivation**

The risk perception theme comprised statements related to physical harm and safety from harm. The behavioural beliefs expressed in this theme related to the probability that using NPS would result in harm or no harm. Consequently, the behavioural beliefs expressed in this theme were considered to be indicative of underlying health motivation. As a theme, statements related to risk perception were expressed with the greatest frequency within all three focus groups. Although the theme was associated with both use and non-use of NPS, the majority of statements making up this theme were presented as discouraging use of NPS.

##### Safety perceptions encouraging use:

Participants mostly linked perceptions of safety with young people’s lack of awareness of the health risks associated with NPS. Lack of education around NPS in schools was discussed frequently, with several participants noting that while the risks of using traditional drugs was strongly reinforced in school, NPS were not mentioned. The neglect of NPS education appeared to confuse participants but was generally put down to the sudden emergence of the problem, and also a concern the issues were being overlooked or swept under the carpet. Perceptions of safety were quite frequently linked with legal status, both directly through the belief that legal status means they must be tested and therefore safe to use, or indirectly, due to people not associating them with drugs or seeing them as an issue. The apparent safety of legal highs was also, on occasion, expressed as relative safety in comparison to traditional illicit drugs. Lack of risk perception was not only considered to be the result of beliefs about the safety of NPS but also the consequence of risk denial, with participants noting that young people often dismiss the potential dangers associated with NPS use by assuming bad things won’t happen to them or simply not caring enough about their health.

##### Risk perceptions discouraging use

Participants frequently characterised NPS as harmful and often deadly. Most references to harm related to physical health risks and general perceptions of danger but several participants also voiced concern about the damage to mental health. Much conversation around harms was a fairly abstract discussion of potential dangers although there were frequent references to observations of users in town who were in a bad state, injured or passed out. Participants own awareness of NPS-related harms was generally linked with media sources such as documentaries and the news. Several participants provided vivid descriptions of both their own and friends negative experiences.

The dangers posed by legal highs were commonly linked to the ingredients of NPS, with participants expressing particular concern over the strength and inconsistency of NPS products and the lack of knowledge about what’s in them. The fear of the unknown nature and consequences of NPS was off-putting to several participants, including those who used traditional illicit drugs who preferred to stick with what they know. Concern about the contents of NPS focused heavily on bad ingredients and harmful cutting agents, with participants typically associating NPS with dangerous chemicals which were at times contrasted with the perceived safety of naturally grown cannabis. Participants associated inconsistent and dangerous NPS ingredients with unscrupulous sellers as well as lack of regulation and the cat and mouse game between producers and the authorities. The young people in the groups commonly positioned the health risks of using NPS as relative to use of traditional illicit drugs, describing legal highs as stronger than illicit drugs and more dangerous due to the comparative lack of medical knowledge about how to treat NPS users who need help. Participants highlighted the importance of education for discouraging the use of NPS in particular noting the importance of providing education in a way that offers young people the opportunity to make an informed choice.

#### **Accessibility, financial motivation and effort**

The accessibility theme related to statements associated with availability and cost. The behavioural beliefs expressed in this theme related to how easy NPS are to get hold of, and how affordable they are. These beliefs were taken as evidence of underlying motivations to conserve both effort and money. As a theme, accessibility was highly salient within participants discussions (11% of the total content coded), and almost entirely seen as encouraging use of NPS, with their easy accessibility accounting for the majority of this theme.

##### Accessibility factors encouraging use

Accessibility was related to availability and cost, with legal highs commonly and consistently described as easily available and cheap to buy. Many participants described seeing NPS in town, in shops, lying on the ground and being offered to them by friends and strangers. The easy availability of NPS was attributed to their sales online and in shops, with participants noting that shops deliberately targeted younger users with NPS being sold like sweets in newsagents and shops close to schools. The wide variety of available products were frequently noted, and a few young people connected the diversity of NPS with the impact of legislative action banning specific substances. The accessibility of NPS was occasionally expressed as relative to illicit drugs, with the ease of access offered by shops compared favourably against the hassle of finding a dealer. Legal highs were presented as easily affordable, both due to their low cost and relative cheapness in comparison to traditional drugs. Prices were noted as being as low as 50p for a bag of Spice, and £10 - £15 per gram for synthetic cathinones/stimulants.

##### Accessibility factors discouraging use

A small number of participants thought that young people might not want to waste their money on NPS when they do not have much available to spend.

#### **Authority, parent’s approval and autonomy**

The authority theme centred on comments relating to authority, authority figures and reactions against authority and restriction. The behavioural beliefs associated with this theme centred on avoiding getting in trouble and the disapproval of parents/carers, and on exercising the freedom to choose and rebelling against expectations and restrictions. These outcome expectancies were taken as evidence of underlying motivation to preserve or express autonomy and motivation to protect parents’ approval. Overall, authority was a prominent theme in participants’ discussions, ranking third for emphasis and comprising 10% of the total reasons coded. Authority related factors influenced both reasons why young people were thought to use NPS and reasons why they might not, with the greater emphasis on the way in which NPS use is encouraged by factors relating to authority.

##### Authority factors encouraging use

The most commonly expressed authority related reason encouraging use of NPS was the belief that users would be able to avoid getting in trouble with their parents or the police. The desire to avoid getting in trouble was commonly linked with the legal status of NPS and the belief that people ‘can’t get done’ for possession or sale of legal highs. The autonomy aspect comprised statements which were connected with people’s freedom to choose their own course of action and their desire to express their will despite conflicting expectations or resistance from authority. Another motive presented as encouraging use of NPS was rebellion, which was particularly linked with young people from good backgrounds and the pressures they face to achieve and meet expectations. Participants also emphasised the importance of not adopting an overly authoritative approach to NPS intervention as they believed that ‘just telling people not to use them’ would increase the likelihood of young people using legal highs.

##### Authority factors discouraging use

Several participants commented on the disapproval of parents as a reason why young people might not use NPS, providing examples of worried parents talking to their children following news reports on NPS. Some parents were presented as against drug use in general while other more liberal parents were described as being concerned about NPS use despite not minding use of cannabis. Disapproval from other authority figures included teachers, social workers, doctors, youth workers and government.

#### **Drug effects and pleasure motives**

This theme centred on the pleasant and unpleasant effects associated with NPS use. Behavioural beliefs associated with the effects of NPS use centred on the pleasantness and enjoyment associated with NPS encouraging use and beliefs about the unpleasant effects and unenjoyable experiences discouraging use. These beliefs were seen as indicative of motivation for pleasurable experiences. Overall, this theme was frequently expressed within the focus groups, emerging as the third most commonly referenced theme for both reasons why young people might use NPS and why they might not use NPS.

##### Pleasurable effects encouraging use

The pleasant and enjoyable nature of NPS use was typically associated with feeling high, as well as a stimulating buzz and feelings of excitement. Enjoyment was not just associated with the effects of NPS consumption but also the context of use, such as having fun and having a laugh with friends. The desirability of getting high was occasionally presented as relative to the effects of other drugs. Young people linked the desire to get high with a disregard for legal status, curiosity, addiction and personality characteristics as well as noting that some of the appeal of NPS was the opportunity they provide to get high without the risk of getting in trouble with authority.

##### Unpleasant effects discouraging use

The unpleasantness of NPS use was associated with undesirable side effects, after-effects and unpleasant smells as well as the negative experience of a bad trip, both from personal experience and the experiences of peers.

#### **Legal status**

The legal status theme brought together statements related to the legal and illegal status of drugs, including attitudes toward legality and the implications of the legal status of NPS. The behavioural beliefs related to legal status involved not getting in trouble, not being harmed, gaining peer approval and being able to get high. The legal status of NPS, therefore, appeared to interact with several different motivations; autonomy motives, health motives, the desire for peer approval and a desire for pleasurable experiences. Comments related to legal status were prominent within the focus groups, making up 11% of coded statements.

##### Legal factors encouraging use

This theme was only associated with the use of NPS as legal status was presented by young people as purely a facilitator of use. The belief that young people take legal highs because of their legal status was the single most commonly expressed belief within the sample of participants, accounting for 7% of all coded statements. The legal status of NPS was thought to be appealing for those wanting to avoid getting in trouble with authorities and for people who are put off by the illegal status of traditional drugs. However, it was also noted that legal status is of little importance to some users. Participants also observed that for some, legal status prevented NPS being perceived as drugs, thereby encouraging use by young people who might not consider taking illicit drugs.

Although participants occasionally cited legal status as a reason for NPS use with no further elaboration, analysis reveals that legality was most strongly related to avoidance of trouble with authorities and perceptions of safety. Legal status was also linked to a lack of awareness of the risks associated with NPS use, as well as social acceptability. Social acceptability was both direct, through approval of peers, and indirect, through lack of association between legal highs and socially unacceptable drugs.

#### **Social influences**

The social influences theme included comments related to the approval and disapproval of friends and peers as well as the social acceptability of using NPS. The behavioural beliefs associated with social influences related gaining or losing friends approval which was taken as an indication of an underlying motivation for peer approval. Although as a global theme social influences were not especially prominent, this theme was associated with both use and non-use of NPS. Social influences were predominantly linked with explanations for why young people use NPS, with little attention given to the role of social influences in discouraging use.

##### Social influences encouraging use

Young people were presented as either actively seeking approval by showing off, just joining in with friends or actively avoiding disapproval for fear of being left out or teased. Several participants suggested that legal highs offer a way for young people who would not normally take drugs to join in with drug using friends or prove themselves as being more daring. Social acceptability was related to the legal status of NPS and use of legal highs as a social norm, while lack of acceptability was said to stem from the perception that legal highs are no different to traditional illicit drugs.

##### Social influences discouraging use

A few participants described the disapproval of their friends should they be seen to take NPS, and a few noted that NPS shared the same stigma as the use of traditional illicit drugs.

#### **User types**

The user type theme brought together young people’s descriptions of user and non-user prototypes with references to the type of people who do or do not use NPS. Positive perceptions of users and negative perceptions of non-users were assessed as encouraging use, while negative perceptions of users and positive perceptions of non-users were assessed as discouraging use. Although not inherently negative, prototypes of users described as underage children were considered to discourage use as participants did not identify with this group and implied that legal highs’ reputation as children’s drugs was off-putting.

##### Prototypes encouraging use

Although participants did describe user and non-user prototypes, they strongly emphasised the lack of stereotypes associated with use of legal highs and the possibility that anyone could be a user. The lack of proto-typical NPS user types was spontaneously and explicitly contrasted with users of traditional drugs, who participants described with ease. Nevertheless, descriptions of NPS user types did emerge, with the most commonly described user characterised as young people from good backgrounds who were affluent and academic achievers who were thought to use legal highs as a way to rebel and to cope with the stress of studying. Another fairly positive or neutral user type was described as the sort of people who have a curious personality. Although all prototypes of typical non-users centred on sensible young people, descriptions were either presented in a positive light casting non-users as wise and clued up, or in a more negative light presenting non-users as scared, straight or boffins.

##### Prototypes discouraging use

Aside from underage children, negative descriptions of user types typically depicted users of legal highs as homeless people and street drinkers, who were generally described as older than the focus group participants, looking like addicts and out of control.

#### **Substitution**

The substitution theme brought together each of the statements which presented NPS use as relative to the use of traditional illicit drugs. As relative comparisons spanned several themes including accessibility, legal status, safety/risk perceptions and pleasant/unpleasant effects, this theme was the one for which cross-coding was permitted. The behavioural beliefs expressed in this theme related to harm, pleasantness, finances and effort. Substitution processes were therefore considered to interact with health motives, pleasure motives, financial motives and effort-based motives. As a theme, substitution was expressed in both support of NPS use and support of non-use, but in this case, non-use equated to use of traditional illicit drugs instead of abstinence. Substitution was mentioned with similar frequency for both use and non-use of NPS.

##### Substitution related factors encouraging use

The relative accessibility of legal highs was seen as the main advantage of NPS over illicit drugs, but participants also thought that the perceived safety of NPS in comparison to traditional illicit drugs and their lower cost had encouraged users to switch to NPS, while their legal status might be appealing to people who are unwilling to engage in illicit activities.

##### Substitution related factors discouraging use

The relative dangers of legal highs were expressed as the main reason to use traditional illicit drugs instead of legal highs. It is worth noting that expression of the relative harmfulness of NPS compared to illicit drugs was one of the most frequently mentioned beliefs, with the belief that legal highs are more dangerous than traditional drugs the most commonly mentioned unique belief directly linked with risk perceptions around NPS.

#### **Curiosity**

The curiosity theme was made up of statements referencing curiosity directly, in addition to those closely related to curiosity, such as appealing marketing. The behavioural beliefs associated with curiosity related to gaining experience. Although as an overall theme, curiosity was mentioned with moderate frequency, it was one of the most emphasised themes in relation to encouraging use of NPS, but did not feature concerning non-use.

##### Curiosity related factors encouraging use

Participants described the packaging of NPS as enticing, with the use of bright colours, shiny wrappers and appealing names. They likened the colourful packaging to sweet wrappers and condom packets, with several participants admitting that they find the eye-catching branding and interesting names alluring.Participants also acknowledged the danger of increased awareness of NPS encouraging use by triggering young people’s curiosity, especially if educational approaches fail to be sufficiently engaging.

#### **Coping**

This theme encompassed beliefs related to the use of NPS as a coping mechanism and a way of relieving negative states such as pain, stress and boredom. The behavioural belief associated with coping was the anticipation of avoiding negative affective states such as stress, boredom, loneliness and drug cravings. Consequently, the beliefs and reasons expressed in this theme were considered to relate to underlying coping motivations.

##### *Coping related factors encouraging use*

Overall, coping was mentioned relatively infrequently and was only presented as a reason for use of NPS, with no corresponding coping related statements relating to non-use. The use of NPS as a coping mechanism was strongly associated with people who are vulnerable, addicts, or seen as having a tough life. Participants mostly highlighted the use of NPS for escapism and stress relief. While participants particularly associated escapism with more vulnerable users, stress relief was more generally linked with students.

## Discussion

This study presented an exploratory investigation of young people’s motivations for using and not using NPS. The explicit aims of the research were to identify young people’s motivations, the reasons and beliefs that support those motivations, and to connect them with a theoretical framework suitable for use in intervention development. In addition, recognising that the reasons that support avoidance of NPS use may not merely be the opposite of those which support NPS use, the study aimed to compare the types of reasons why young people might or might not choose to use NPS.

### Principal findings

Analysis of young people’s discussions about NPS in the focus groups organised for this study identified multiple motivational domains that appear to influence young people’s evaluations of NPS use. Seven motivational domains were found to be relevant to both use and avoidance of NPS use; health motives; pleasure motives; the desire for friends’ approval; the desire for parent/carers approval; the desire for autonomy; financial motives; and identity-related motives. In addition, the use of NPS also appeared to be supported by coping-based motives, curiosity and a desire to conserve effort.

Most of the global themes mapped directly onto the motivational domains, with six of the themes identified within the full set of statements elicited matching with six of the underlying motivations; risk perceptions (health motives); social influences (peer approval); pleasure (pleasure motives), curiosity (curiosity), coping (coping motives) and identity (identity motives). The four remaining global themes; accessibility; legal status, authority and substitution demonstrated a more complex relationship with the motivational domains identified, with each of these themes relating to more than one type of motive. While the accessibility of NPS appeared to interact with motives to conserve money and effort, authority related statements showed a relationship with both a desire for parent/carer approval and motivations to protect and enhance autonomy. Young people’s reasons for using NPS as a substitute for traditional illicit drugs, and vice versa, appeared to involve multiple motivations, with participants relating substance choice to financial motives, health motives and pleasure motives as well as consideration of the effort involved in getting hold of different substances. Legal status also interacted with several motivations, encouraging the use of NPS via autonomy motives, health motivations and peer approval. That is, the legal status of NPS was connected with the beliefs that young people won’t get in trouble, that legal highs are safe to use, and that they offer an acceptable way to have fun with friends without breaking the law.

The relative prominence of each global theme differed for performance and non-performance of the target behaviour (i.e. taking NPS). Regarding the use of NPS, young people’s discussions placed greater emphasis accessibility, legal status and authority, specifically: ease of access, the extent to which legal status implies NPS are fine to use, and the permissiveness of parents and authorities. In contrast, young people’s expressed reasons for why they might not use NPS highlighted the importance of risk perceptions and health motives, with NPS characterised as harmful and deadly due to the inconsistency, strength and adulteration of ingredients owing to the lack of regulation of NPS products. Discussions about the avoidance of NPS use also drew attention to the likelihood of non-use being associated with displacement onto traditional illicit drugs, with references to substitution very prominent within participants’ conversations.

Turning to the goodness of fit of these findings with theoretical models commonly used for explaining behaviour, the ten motivational domains identified mapped well onto several constructs drawn from the five models considered in study development, namely; cognitive and affective behavioural beliefs; social/normative beliefs; control beliefs; and behavioural willingness. The implications of this are examined in more detail in the discussion that follows.

### Reconciling NPS use and non-use with social cognition models

Of the 5 social cognitive models used in the development of this study two models focus specifically on health behaviour and health-specific motivations (the HBM and PMT), while the others are more general models of behaviour that also consider social influences and factors relating to behavioural control (the TPB, PWT and BRT). The findings of this study show that although non-use of NPS might be best explained by health motivation, overall NPS use and non-use is influenced by a wide range of motivations and therefore any model used to address NPS behaviour will need to consider more than just health-based cognitions and health motivations. That is not to say the HBM and PMT do not have value for understanding the health-based aspects of young people’s NPS related cognitions, but that any conceptualisation of health motivations related to NPS use/non-use are best viewed within the context of a wider set of influences including social motives, pleasure-based motives and factors related to behavioural control. From this perspective, the theoretical frameworks offered by TPB, PWT and BRT are better suited for describing NPS related behaviour.

As the PWT and BRT were developed as elaborations of the TPB these three models have much in common. This family of models generally equate motivation with a person’s behavioural intention (and behavioural willingness in the PWT). Behavioural intention is conceptualised as the proximal determinant of behaviour, which is in turn influenced by attitudes and social norms, and in the TPB/BRT; perceived behavioural control, in the PWT; prototypical images of users/non-users, and in the BRT; reasons for and against. Motivation is therefore viewed as a generalised tendency resulting from the outcome of interactions between the determinants of behavioural intention. In contrast to a generalised concept of motivation, this study has identified several specific motivational domains that appear to relate to NPS behaviour. To some extent this is largely a matter of definition, as the various behavioural determinants within the TPB family models could be described as different motivations, and the motivational domains identified here could be described as factors or influences. However, we argue here that the concept of separable motivations has distinct advantages for how NPS behaviour is understood and depicted. Firstly, the motivational domains identified in young people’s discussions of NPS behaviour have clear parallels within previous research, and secondly, the conceptualisation of several distinct motivations draws attention to the dynamic nature of behaviour, that is to the conflicts and synergies that may exist between the different, potentially competing, motives underlying young people’s NPS-related behaviour.

#### Cognitive attitude: Health motivation

The concept of motivation driven by a concern with physical health is not novel (e.g. Baumeister & Leary, 1995; Grouzet et. al., 2005). As previously noted, the existence of health motivations and their influence on behaviour has been clearly depicted within the HBM and PMT, and these models have received ample validation over several decades of research (Beck, 1981; Becker, 1974; Penderson et al., 1982; Gianetti, et al., 1985; Gottleib & Baker, 1986; HBM, Rosenstock, 1966; MacDonald et.al., 2013; Mullen, et al., 1987; Murgraff et. al., 1999; PMT; Rogers, 1975; Portnoy, 1980; Stacy & Lloyd, 1990; Thrul et. al., 2013; Wu et. al., 2014; Yan et. al., 2014). In both the HBM and the PMT, people are portrayed as being motivated to act in response to some perceived threat to their health. Risk perceptions are therefore central within both models, with the behavioural response to such threats being determined by evaluative processes involving the level of threat and perceived value and likelihood of acting or not acting. For young people contemplating reasons for NPS use and non-use, we saw that risk perceptions were considered a key influence on behaviour, with the level of perceived threat posed by NPS seemingly moderated by education, risk awareness, risk denial and the belief that legal status implied safety. The young people saw no inherent health-enhancing benefits of NPS use, and health motivation was presented as being entirely protective, not a driver of NPS behaviour. Presumably, then, the value of performing the health favouring outcome (i.e. not taking NPS) is balanced against the benefits of NPS use according to other non-health related motivations. Within the TPB there is no specific health motivation depicted, but as cognitive attitude is typically assessed in relation to perceptions of the relative harms and benefits of performing the target behaviour, for the purpose of this study, health motivation has been functionally equated with the cognitive attitude construct of these models.

#### Affective attitude: Pleasure motives and coping

In the context of NPS use, pleasure-based motives might be best equated with the motive for stimulation and hedonism previously proposed by Schwartz (1996). In regard to the social cognitive models, pleasure motives fit well with the affective attitude construct of the TPBy, which is typically assessed by evaluations of how pleasant and enjoyable, or unpleasant and unenjoyable, people believe the target behaviour to be. However, within the context of NPS behaviour, young people’s affective attitudes also appeared to hinge upon coping motives, which, although also focused on a desire to feel good, were characterised as being driven predominantly by the desire to avoid negative emotions such as stress, boredom, loneliness and cravings. That people are motivated by emotion-regulation and coping processes has also been previously recognised (Parker & Endler, 1996), as well as being alluded to within PMT, in which a coping appraisal is proposed in a response to health threats. Coping motives were therefore also mapped onto the affective attitude construct of the TPB type models.

It is worth noting at this point that within the TPB, cognitive and affective attitudes are typically combined within a single attitude construct. The findings of this study suggest that in the context of NPS behaviour, combining affective and cognitive attitudes (i.e. conflating the influence of health motives with pleasure and coping motives) could be problematic due to potential conflict between health and affective motives.

While the young people in the focus groups depicted the motivation to protect health as supporting non-use of NPS, they also acknowledged that young people may well be aware of health risks associated with NPS use, but decide to use NPS anyway, due to their desire for pleasure and enjoyment. In other words, young people’s beliefs about the harmfulness of NPS (cognitive attitude) might not correlate with how they feel about NPS use (affective attitude). Combining opposing sub-constructs within a single attitude construct would very likely reduce the predictive power of any NPS behaviour model based on the TPB. Specifying a model in which affective attitude and cognitive attitude were independent constructs would likely improve the discriminant validity of the attitude constructs within the resultant model. In support of this proposition, research by Lawton, Conner and McEachan (2009) has demonstrated that affective attitudes have an independent influence on both intentions and behaviour for a variety of health risk behaviours and that this influence is stronger than that of cognitive attitudes for several risk behaviours (including illicit drug use). Moreover, the influence of affective attitudes increased with a greater divergence between cognitive attitudes and affective attitudes. In other words, the more ambivalent people’s attitudes are regarding health risk behaviours such as illicit drug use, the more strongly their behaviour aligned with their affective attitude rather than their cognitive attitude. For NPS behaviour, where there appears to be a high potential for divergence between cognitive and affective attitudes (i.e. young people know they can be harmful but enjoy the effects), emphasising NPS-related health risks in interventions could increase the ambivalence of their attitudes and potentially increase the influence of pleasure-based motives. Therefore, it is important not only to recognise the independent influences of pleasure/coping motivations and health motivations but to pay attention to the level of discrepancy between them.

#### Social norms: Peer approval and parental approval

As with the attitude construct, within the TPB-type models, social influences are typically treated as a single construct combining the influences of social norms and the approval/disapproval of important referents. However, within young people’s discussion of NPS use and avoidance there emerged a clear difference between the influence of peer-based approval motives and the influence of the approval or disapproval of parents and caregivers. While peer approval was clearly linked with use of NPS, and peer disapproval with non-use, the orientation of parent’s approval and disapproval was largely inverted, that is, young people were depicted as being motivated to avoid NPS use as a result of the disapproval of parents and authority figures. Within the set of reasons elicited from the focus groups, peer approval and parent/carer approval were not captured within the same theme, as they were not considered to be related to a shared underlying motivation. While peer approval/disapproval was equated with social influences, parent/caregiver approval/disapproval was captured within the theme which centred on concerns with, or reactions to, authority.

In the current context, it appears that the influence of authority-related factors may be sufficiently captured within the construct of social norms as applied to parent/carers, and the HBM construct of self-efficacy. However, as with the attitude construct, inter-construct conflict within the social norms construct may need to be resolved by allowing the influence of peers and caregivers independence from one another. In other words, to better understand young people’s NPS related choices, we might need to pay attention to the attitudes of both their peers and their parents/carers, and indeed, the extent of any divergence between them.

#### Control beliefs: Autonomy, finances and effort

The authority theme also involved what have been described here as autonomy motives, that is, young people’s desire to do what they want, and avoid or overcome restrictions. In the context of NPS use, restrictions on young people’s freedoms were equated with the influence of the law and that of parents. For young people aged 15 to 25, their sense of autonomy, and threats to that autonomy, appeared to be strongly related to authority figures and their approval or disapproval, which included parents and caregivers. Autonomy motives are well recognised as a driver of behaviour (deCharms, 1968; Deci, 1975), with some theorists viewing autonomy as a fundamental human motivation (Ryan & Deci, 2000). Although autonomy motives are more commonly discussed in relation to self-motived action and intrinsic motivation, when a person’s self-determined action (or desire for action) becomes thwarted by external factors, autonomy concerns shift from questions of intrinsic motivation to questions of freedom and control. For young people discussing NPS use, their freedom to act autonomously and take NPS should they wish was set within the parameters of what was seen as permissible (authority demands and social norms), and what was seen as possible (ease of access and cost).

Autonomy motives, along with financial motives and effort, were equated with the control beliefs captured within constructs of the TPB, BRT and HBM. Within the TPB and BRT control beliefs are represented by perceived behavioural control, which typically centres on how easy or difficult the target behaviour is to perform, which therefore inevitably captures interactions between the individual and their environment. In the context of NPS use, the young people’s environment was depicted as largely facilitating use, via economic factors and factors that determine availability. The low cost and easy availability of NPS were strongly emphasised as reasons for use, and very few environmental barriers to use were noted. The strong focus on the easy accessibility of NPS in young people’s dialogue is in line with the majority of the studies reviewed within the existing literature where accessibility emerged as a particularly significant theme in explanations of NPS use.

The autonomy motives identified within young people’s conversations, however, demonstrate a better fit with the self-efficacy construct of the HBM. While perceived behavioural control is perhaps more orientated toward external barriers and facilitators of behaviour, self-efficacy has a somewhat more internal orientation. Self-efficacy refers to people's self-appraisal of their capability to exercise control over the events that affect their lives (Bandura, 1989), which is a good description of the autonomy motives captured within young people’s conversations. Crucially, for the participants talking about NPS-related behaviour, young people’s capacity to exercise control was not presented as merely an attribute to be assessed, but a capacity that could be enhanced by the act of taking (or refusing) NPS. In participants’ descriptions of NPS use as a form of rebellion and reaction against authoritarian approaches to drug prevention, we see that self-efficacy is not merely synonymous with external constraints on NPS use, but that self-efficacy motives may also be triggered in response to the imposition of external control. In other words, a young person with high self-efficacy may have a different relationship with perceived barriers (i.e. threats to self-efficacy) than a young person with low self-efficacy. For this reason, it is argued here that an NPS behaviour model may be best served by measures of both perceived behavioural control and self-efficacy.

For young people still living with their parents or only recently moved out, the restrictions set by authority figures and their disapproval appear to loom large as a concern, and these are important influences that interventionists need to consider. However, these context-specific influences are not well captured within general behaviour models that have been largely applied to adult populations, and health-promoting, rather than health risk, behaviours. It might serve our understanding of NPS behaviour better to consider the value of investigating the feasibility and value of extending a TPB base model to include an authority construct. However, this would need to be balanced against the pragmatic value of retaining a parsimonious model that can be applied across a range of behaviours.

#### Behavioural willingness: Identity and curiosity

Thus far, the model constructs considered are largely the core constructs of the TPB (i.e. attitudes, social norms and perceived behavioural control), however, within participants’ discussion of NPS, further motivations were identified that do not map neatly onto the TPB model constructs. Namely, identity motives and curiosity. Identity motives are also well-recognised within psychological literature (e.g., Sparks & Guthrie, 1998; Thoits & Virshup, 1997), and, in addition, the TPB has been successfully extended to incorporate a self-identity construct (Biddle, Bank, & Slavings, 1987; Charng, Piliavin, & Callero, 1988; Rise et al., 2010). In the current context, however, identity motives were equated with the social reaction pathway in the PWM. The reason for this was that within young people’s discussions of NPS use/non-use identity motives were generally not described explicitly, and identity motives were in the most part implied from the way in which participants talked about users and non-users, and their descriptions of user and non-user prototypes. In this respect, it was clear that participants did not identify with younger users (i.e. 12-year-olds), nor older users who were characterised as street drinkers and homeless people. According to the PWM, the prototypical images people hold of the types of people who do or do not perform the target behaviour influence people’s willingness to engage in the behaviour. While participants’ descriptions of friends and peers who use NPS (recreational users) were generally positive or neutral, their descriptions of street-users were more negative. It is therefore presumed that these prototypes might influence young people’s behavioural willingness according to the assumptions of PWT. Interestingly, participants explicitly referred to a lack of user stereotypes on several occasions, and how a lack of NPS user stereotypes made it more possible for anyone to use them, which was contrasted with clear negative stereotypes for heroin and crack cocaine which were presented as off-putting.

Within participants’ discussions, curiosity was described as an important reason for use and was presented as a trait, attitude or orientation rather than a means to a specific end. Curiosity has long been recognised as a fundamental human trait or motivation (e.g. Loewenstein, 1994), and openness to experience has been linked with the use of illicit drugs (Eisenman, Grossman, & Goldstein, 1980). Consequently, curiosity was also equated with behavioural willingness, which is conceived as a willingness to engage with the target behaviour, and so shares some common concept of openness toward the experience of NPS use. Although curiosity may not offer a good target for intervention, nevertheless, the influence of curiosity may need to be taken into consideration in explanations of NPS-related behaviour, in particular, experimentation with novel substances.

#### Reasons for and reasons against use: Legal status and other wider factors

In addition to the motivations identified within young people’s conversations, there were several influences including reasons for use and non-use which, although not motivations within themselves, appeared to have important, context-specific, direct or indirect, influences on young people’s relationship with NPS. These factors include legal status, risk awareness and education, marketing, vulnerability and adversity, key attributes of the products such as purity and potency, as well as the availability of both NPS and traditional illicit drugs. The importance of these context-specific factors indicates the need for a model of NPS behaviour that is able to account for them in addition to underlying motivations.

As an example, legal status, in particular, is a context-specific reason that appears to strongly influence young people’s beliefs yet is not captured within the core constructs of the TPB and PWT. The legal status of NPS differentiated them from traditional illicit drugs and was presented by young people as an important justification for their use. This is in contrast to the majority of existing studies on NPS use where legal reasons generally appeared to have little influence on people’s decisions about NPS use. This suggests that for young people in the UK, the legal status of recreational drugs has important implications for the way in which they are perceived and young people’s decision-making processes in relation to their use. For example, through association with perceptions of safety, legal status appeared to reduce risk perceptions; the most prominent reason presented as discouraging NPS use. In other words, even if participants believe drug use is dangerous, legal status offers a justification mechanism which facilitates behaviour that might conflict with general attitudes towards drug use. The importance of legal status, as an influence on NPS use, suggests that any model of NPS-related behaviour would need to account for this influence.

This set of factors, which are not in themselves motivations, do however act to condition or constrain the decisions leading to NPS behaviour by directly or indirectly affecting young people’s cognitions. For example, education and media act to increase risk awareness which then plays a part in the decision-making process; marketing raises awareness but also triggers curiosity and influences the attractiveness of specific NPS products; conditions of adversity and vulnerability increase stress which encourages use of NPS for stress relief and coping; the variable potency and purity of products influences substance choice based on outcome expectancies of risk versus satisfaction and the relative accessibility of NPS and traditional illicit drugs influences substance choice based on ease of access and cost.

BRT offers a framework for including context-specific reasons with the additional constructs: reasons for, and reasons against. According to Westaby (2005) the addition of the reason constructs captures context-specific reasons not accounted for by other social cognition models. This is particularly useful for capturing context-specific reasons people use to justify and defend their behaviour, especially when they are used to justify behaviour that conflicts with global evaluations or motives (Norman, Conner & Stride, 2012; Westaby; 2005). These wider factors may directly influence decision-making leading to NPS behaviour or they may be used as post hoc justifications of a behaviour even though they did not directly reflect on them at the time the original decision was made.

In summary, in regard to the goodness of fit of the social cognition models, young people’s NPS behaviour appears to be best explained by the TPB, and an optimal model would potentially be provided by an extension of the TPB in line with the BRT reason constructs, the PWM prototype and behavioural willingness constructs as well as a measure of self-efficacy. In addition, cognitive attitude and affective attitude constructs would be best separated into independent constructs, and social norms would be best separated out to allow for the influence of parent/carers and the influence of peers to act independently.

### Implications for intervention development

The study findings have numerous implications for the development of NPS-focused interventions. From an ethical perspective, there are indications that NPS use intersects with inequalities, and therefore interventions will need to be sensitive to social and health inequalities. Young people in the focus groups indicated that there was a clear link between use of NPS and the low cost of NPS products. As a result, NPS use was commonly described among groups with low income. This includes, in addition to those living in deprivation, children and young people yet to start earning and on low incomes. NPS use was not described as limited to those with low incomes however, as the most common group of users depicted were, in fact, young people from what were described as ‘good’ and ‘wealthy’ backgrounds. This presents a need for interventionists to pay close attention to the potential for differential effects across user populations, as their differing needs and motives for use may result in dissimilar responses to the same intervention. In addition, the clear interactions between young people's cognitions and wider factors such as the easy accessibility and marketing of NPS, the lack of product regulation, lack of education, and conditions of social adversity highlight the potential value of interventions targeting relevant wider factors. From the perspective of the practitioner and interventionist working at the individual level, this highlights the importance of interventions that also engage with strategies that address the wider social and structural factors which both facilitate NPS use and increase the harm potential of these substances.

In terms of safety considerations, the young people consulted in the focus groups identified several populations of users that are currently neglected within the NPS evidence base. While previous research centres predominantly on experienced drug users, such as clubbers and Men who have Sex with Men (MSM), young people also described users as underage children, homeless people and ‘good kids’ who would not normally use illicit drugs.

Another important safety concern for interventionists is the potential for unintended negative consequences, and within the young people’s responses, there were clear indications of areas of concern. The strong emphasis young people placed on substitution and processes of displacement between NPS and traditional illicit drugs highlights the strong potential for NPS-focused interventions to inadvertently result in users shifting from one psychoactive substance to another rather than abstaining from use. Of particular concern is the high potential for interventions focusing on health risks to result in displacement, a possibility implied by the frequency with which the health risks of NPS were presented relative to those of other drugs such as cannabis, cocaine and ecstasy. The extent to which interventions might inadvertently present favourable evaluations of other psychoactive substances should be carefully considered within the light of the relative harm potentials of the substances likely to be involved in displacement processes.

Curiosity was also presented as a potential factor contributing to negative unintended consequences, with participants not only admitting to their own use of NPS as a result of curiosity but also claiming that nothing short of their own personal experience of NPS use would satisfy their impulse to try them. However, any concerns about curiosity being triggered by an intervention should be balanced against the probability that the target population will encounter NPS in their everyday lives. Young people who are likely to encounter NPS in the near future may nevertheless benefit from information provision and signposting. The crucial issue regarding curiosity is careful targeting of interventions to ensure that the knowledge and experience levels of the intended audience (on a spectrum from naïve non-user to experienced regular user) are accounted for, and the intervention remains carefully directed to avoid exposure to unintended recipients.

With regard to the acceptability of NPS interventions, there were indications that young people’s understanding of NPS and NPS-related issues differ from an academic perspective in critical ways. Firstly, even despite the strong focus on the dangers associated with NPS use and participants’ concern about people’s use of NPS, the young people in the focus groups generally did not present drug use as deviant and consistently advocated for a non-judgemental approach to young people’s experimentation with drugs. For many of the participants, drug use within their peer groups was presented as a normal fact of life, raising the possibility that interventions which unduly overemphasise the abnormality of drug-taking behaviour run the risk of undermining their own credibility and alienating young people. Within the focus groups, NPS use was not generally framed as a person-based problem, but largely a problem with the strength and ingredients of NPS products, a lack of regulation and inadequate education. In other words, participants tended to frame the ‘problem’ of NPS use as a problem of the harm potential of NPS arising as a consequence of wider structural factors, rather than a moral problem and an issue of individual responsibility, or lack of responsibility. Another area, worthy of note, was the extent to which participants’ framing of risk appeared broader than a more traditional academic conception of risk. While the academic models of behaviour and health behaviour tend to equate risk with health risk, within participants’ conversations, risk did not necessarily refer to a physical health risk. For the young people consulted, risk was commonly associated with, and implied, a risk of getting in trouble or the risk of negative social consequences. It is important therefore that interventionists consider just what risk means to their target population and do not simply assume an academic understanding of risk and negative consequences.

In terms of ensuring the relevance of interventions, the findings of the study imply that the easy accessibility of NPS has extended the reach of NPS markets beyond the realm of existing drug users into groups less commonly associated with drug use. Although the potentially wide diffusion of NPS and apparent lack of clear user prototypes present challenges for interventions, given the problematic nature of applying universal interventions to substance use, participants’ conversations provided some insights into potential at-risk groups. Young people who appeared to be most at-risk were university and college students, particularly those experiencing stress; vulnerable young people experiencing deprivation, mental health issues and financial pressures; young people whose parents use drugs; young people whose peers use drugs; and young people who engage in the night-time economy and party lifestyles.

In addition, young people’s descriptions of user types indicated a range in the levels of drug experience of potential NPS users, from young people with no experience of drug use who were described as not wanting to use illicit drugs, to frequent drug users who cared little about legal status and were adding NPS to their usual repertoire alongside traditional illicit drugs. Interventions may need to engage differently with populations based on their level of drug experience, whilst also paying attention to the potential for curiosity to encourage NPS initiation. It is worth noting, however, that within the sample, each of the participants who had tried NPS had also used traditional illicit drugs, in addition to their friends having using both NPS and traditional illicit drugs. To some extent this contradicts the claim that many young people that use NPS have not, and would not, use traditional illicit drugs. However, the study did not collect information about which substances were used first, and it remains a possibility that young users may have used NPS prior to initiating illicit drug use. Before initiating an intervention targeted at drug naïve young people, these ambiguities would need to be addressed with further research.

As noted in previous research, being associated with an ethnic minority did not present as a risk factor in this study, and the indications were that being of Asian origin or a member of the Muslim faith was possibly a protective factor.

Considering potential intervention targets, at the micro-level, risk perceptions, social norms, relationships with caregivers, self-efficacy and coping skills present as viable targets, assuming due attention is given to the potential for negative unintended consequences as previously discussed.

### Strengths and limitations

The study purposefully set out to collect a wide range of views from a diverse sample of young people and although the diversity of participants was greater than would be expected in a typical sample of undergraduates, the sample was nevertheless biased in favour of participants who were white, female and in tertiary education. This bias reflects the composition of the community groups from which the focus groups were drawn. As a result, the study sample may not be fully representative of the wider NPS-using population. For example, the majority of NPS users are male, and therefore findings may not generalise as well as they might have, had more males been included. Male participants were present in all three groups however, and due to their relative confidence and outspokenness, their perspectives were strongly represented within the data.

In general, participants were conscientious, articulate and several had received training in advocacy and awareness of social issues. Although the relatively high social awareness and education of participants also brings into question the representativeness of the sample compared with the general population, the training and conscientiousness of participants was not necessarily disadvantageous to the study. For example, the peer mentors with greater experience and training were not only particularly sensitive to the perspectives of local young people from more disadvantaged backgrounds, but also demonstrated good sensitivity to group dynamics and actively aided the engagement of group members in a more naturalistic way than was possible for the researcher who was less well-known to participants.

Qualitative analysis inevitably involves a greater degree of interpretation and subjectivity than quantitative methods. Although efforts were made to improve the validity of the research with the use of a second coder and by providing as much transparency to the analysis as practicable, the nature of the methodology means the results will, to some extent, be based on interpretation and subject to a certain degree of bias. The inclusion of the frequency analysis helped to counteract bias by providing a systematic approach to data interpretation.

A further limitation of the study is the inability to link specific beliefs with demographic information or previous history of drug use. As the study placed a premium on diversity and included both users and non-users it could not be verified which beliefs are most commonly associated with actual use of NPS. The predictive power of the beliefs would, therefore, need to be verified with statistical analysis prior to intervention development.

## Conclusion

For young people contemplating NPS use in the UK, the legal status of these substances appears to be of greater relevance to decision-making processes than other groups such as older and more experienced drug users. While the legal status of NPS seems to imply a lack of risk (both risk of punitive consequences and risk to health), it may also interact with young people’s relationship to authority, which appeared to be a prominent feature within young people’s discussions of NPS use and non-use. With young people’s autonomy to use NPS seemingly conforming to, or reacting against, the expectations and demands of authorities and authority figures, the social context in which young people make NPS-related decisions was brought to the fore as an important feature underrepresented in previous NPS related research.

Young people also showed a strong concern for the health risks associated with NPS use, in particular the dangers of using unregulated products with unknown and inconsistent ingredients. However, despite the strong focus on the harmfulness of NPS as a reason to avoid use, the need for caution when emphasising the dangers of using NPS was highlighted by the clear potential for displacement onto other substances, particularly in relation to the evaluation of the relative health risks of NPS and traditional illicit drugs. The high potential for negative unintended consequences of an intervention draws attention to the need for careful targeting of interventions both regarding the target population and the intended mechanism of change.

With regard to theory that can help specify the mechanisms of change for intervention development, the TPB offers a good fit with the motives for NPS use and non-use identified in this study. However, it is recommended to use an extended TPB model that includes the following additional constructs: reasons for, reasons against, prototype images, behavioural willingness and self-efficacy. The inclusion of the BRT reason constructs is especially recommended due to the need to move beyond understanding only motives, to also accounting for context-specific and wider factors such as legal status, accessibility and the marketing of NPS, conditions of social and economic adversity as well as the lack of product regulation, information and education.

# Study 2: Pre- and post-ban comparison of young people’s beliefs, reasons and motivations for NPS use and non-use following implementation of the Psychoactive Substances Act 2016

## Introduction

Responding to concerns about rising harms associated with NPS use, on 26 May 2016, the UK Government brought into force the Psychoactive Substances Act (PS Act) for the purpose of protecting the public, particularly young people, from the health threat posed by NPS. The PS Act placed a blanket ban on all psychoactive substances in the UK making it an offence to produce, supply, import or export any substance intended for human consumption that is capable of producing a psychoactive effect unless specifically exempted (see Chapter 2 Section 2.3.3 for more details on the scope of the Act). Except within custodial settings, the Act does not make it unlawful to use or possess an NPS. In prohibiting the sale of NPS, the aim of the Act is to remove the availability and visibility of NPS, both online and offline, and to prevent legislation continuing to drive market innovation and the development of more potent products.

Although the primary purpose of the Act was to end the open sales of NPS, it was also intended that it would send a clear health message to potential users’ to challenge the misconception that NPS are safe to use (HM Government, 2016; 2017). According to Government drug policy, the illegal status of a substance informs people about the health risks and punitive consequences of use which in turn deters use (HM Government, 2013). The intention behind the Act, therefore, was to reduce NPS-related harms by reducing people’s consumption of NPS via two parallel pathways: a supply reduction approach and a demand reduction approach. (HM Government, 2016). The two pathways are represented in the diagram in Figure 7.1.

Figure 7-1 proposed mechanisms of change underlying the Psychoactive Substances Act

Availability

Restriction

Psycho-social factors

NPS use

Risk messages

Psychoactive Substances Act

Drug harms

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While the supply pathway impacts potential users’ indirectly via availability, the demand reduction pathway targets potential users directly, aiming to influence their self-directed behaviour by altering their beliefs about NPS. The model of behaviour assumed within the PS Act represents the intended mechanism of change for the demand reduction pathway. Although the development of the PS Act did not draw on any theoretical accounts of behaviour, Government drug policy explicitly presents people’s drug avoidance behaviour as the outcome of rational decision-making processes that are said to be influenced by risk perceptions and knowledge of the legal status of substances (HM Government, 2010, 2013, 2017).

Although justification for the implementation of the PS Act was partially based on the assumption that young people use NPS due to perceptions of safety conferred by their legal status, evaluations of the Act have not included any measures of psychosocial variables within the primary target population (HM Government, 2018). In addition, no research to date has investigated the impact of the Act on young people’s beliefs, reasons or motives for NPS use or avoidance of use. Consequently, this study aimed to elicit the NPS-related cognitions of a sample of young people in the UK following implementation of the PS Act, in order to compare them with those of a similar sample collected in Study 1 prior to implementation of the Act.

## Research aims and objectives:

With a target population of young people aged 15 to 25,the specific aims of this study were to compare pre- and post-ban beliefs, reasons and motives for NPS use and non-use and to assess the extent to which they may have been affected by the introduction of the 2016 Psychoactive Substances Act (also referred to here as the ban). In line with the overarching project aim of informing NPS interventions, the findings were also considered in the light of their implications for the selection and development of theory suitable for use in intervention development. Consequently, the objectives of the study were to:

1. Elicit and analyse young people’s beliefs, reasons and motivations for NPS use and non-use more than a year after implementation of the PS Act
2. To compare the findings with those of Study 1 and assess the extent to which implementation of the PS Act had affected:
   1. Young people’s beliefs about NPS
   2. Young people’s motivations and reasons for using or not using NPS
3. Consider the suitability and fit of the social cognition models used in the development of the studies.

## Method

As the aim of this study was to provide a post-ban comparison with the data collected in Study 1 prior to implementation of the PS Act, as far as possible, Study 2 followed the same procedures as the earlier study, undertaking three focus groups with young people from local community groups 14 to 16 months after the introduction of the PS Act (17 to 29 months after the original focus groups).

Ethical approval was granted by the Department of Psychology Research Ethics Committee at the University of Sheffield.

### Participants and procedure

The three focus groups were conducted during the period from July to September 2017. Twenty-seven participants were recruited from three community groups based in Sheffield. Although the intention was to work with the same community groups as in the earlier study, one group was no longer able to take part. Consequently, one focus group was conducted with an alternative community group that was similar in terms of location, remit and target population. The new group was a young people’s empowerment project advocating for young people’s health and mental health concerns based in Sheffield city centre. The community groups taking part in this study were therefore: Sheffield Young Advisors (SYA), Young Healthwatch Sheffield (YHS) and Chilypep Sheffield (CPS). See Chapter 4 Section 4.6.1 for further information about the community groups involved in the research.

Similar to Study 1, participants were a diverse group of young people from the general population who were aged 15 to 26 and from a range of postcode areas of Sheffield. Recruitment was undertaken working together with community group facilitators to ensure appropriate health and safety procedures were followed and young people were not inadvertently coerced into taking part (see Chapter 4 Section 4.6 for further details of the recruitment process). Eight of the participants who took part in Study 1 also took part in Study 2, 5 via one community group and 3 from another.

The study procedure replicated that of Study 1 using materials adapted to include additional questions to explore participants perceptions of the impact of the PS Act and their use of NPS following implementation of the ban (see Chapter 4 Section 4.6 and Chapter 5 Section 5.3.1 for further information on the study procedure, and see Appendices B, C and D for copies of the materials used in the focus groups, for Studies 1, 2 and 3 respectively).

### Definitions

Prior to running the focus groups, the researcher met with an advisory group of young people organised together with the Young People's Involvement Team from the local charity Sheffield Futures. The purpose of the session was a feasibility check following the implementation of the PS Act owing to concern that, following the change in legal status of NPS, young people may no longer associate the term ‘legal highs’ with the substances under investigation. The outcome of the session was that ‘legal highs’ was considered to be appropriate language to use as no alternative term for referring to NPS had emerged, and young people remained familiar with the terminology and the kind of substances it referred to. The definition of NPS was adapted from the description adopted in Study 1 in consultation with the advisory group of young people. Throughout the focus group sessions NPS were referred to by their colloquial term 'legal highs' which was defined as:

'the common name for Novel Psychoactive Substances. These are chemical substances that until recently could be sold legally. They produce the same, or similar effects, to traditional illegal drugs such as cannabis, cocaine, ecstasy and heroin. They are psychoactive which means they have mood-altering properties and can act as stimulants, sedatives, hallucinogens and psychedelics. Since May 2016 they have been banned, which means it is now illegal to sell them, but apart from a few exceptions it is not illegal to possess them for personal use.'

Performance of the target behaviour was defined as 'taking legal highs' while non-performance was defined as 'not taking legal highs'.

Regarding the PS Act, consultation with the advisory group of young people established that the appropriate descriptive language for referring to the Act was ‘the ban’ as this was how group members referred to the Act and several young people were unfamiliar with its formal name. Consequently, the PS Act was defined as:

‘the ban that came into force on 26 of May 2016. The ban is a change in the law that makes it illegal for anyone to sell or distribute what used to be known as legal highs.’

### Legal status

The situation surrounding the legal status of NPS, which varies from substance to substance, and changes over time is complex. Although the legal status changed with the introduction of the PS Act, personal possession of most NPS remained legal. However, referring to NPS as legal following implementation of the ban inevitably creates confusion, while referring to them as illegal is not accurate and may or may not match with user’s perceptions. For this reason, aside from the definition given above, when talking with participants during the focus group sessions, NPS were neither described as legal nor illegal by the researcher and participants’ own perceptions of the legal status of NPS could emerge. For the purposes of reporting the findings of the study, however, following the ban the legal status of NPS is described as ‘illicit’ as a way of distinguishing their post-ban status from their pre-ban status.

### Measures

The background questionnaire collected the following socio-demographic information: age; gender; ethnicity; postcode and occupation. Participants were also asked whether they had been aware of the PS Act prior to the session. As in Study 1, the background questionnaire asked about participants’ use of NPS and illicit drugs as well as perceptions their friends use of NPS and illicit drugs. However, for the post-ban study, the questions about the use of NPS were adapted to take account of the PS Act. Participants were therefore asked whether they had knowingly used NPS before or after the ban and whether they believed their friends had used NPS before or after the ban.

### Focus group questions

The focus group questions replicated the content and format of the semi-structured, open-ended questions used in Study 1 (see Chapter 5 Section 5.1.3.3 for the focus group questions) with the addition of questions asked at the outset of the session that aimed to elicit responses about the impact of the PS Act (see Table 7-1). In addition to some general questions designed to encourage inclusion of young people's own perspectives, the focus group questions were developed around the following constructs of selected social cognition models: (i) reasons, (ii) risk perceptions (iii) behavioural beliefs (iv) normative beliefs (v) identity and (vi) control beliefs. For further details of the focus group questions and the development of the model construct categories used in their development see Chapter 4 Sections 4.5.7 and 4.7.1. To capture beliefs, reason and motivations underlying both performance and non-performance of the target behaviour, the questions were framed in relation to both using NPS and not using NPS. The order in which the theory-based questions were presented to participants was varied for each focus group.

**Table7-1 Additional focus group questions assessing the Impact of the PS Act**

|  |  |
| --- | --- |
| **Question topic**  Questions and prompts | |
| **Impact of the PS Act** | |
| 1. Do you think the ban has affected the way young people think about former ‘Legal highs’? | |
|  | How have perceptions changed? Has it changed their attitudes or behaviour? |
| 1. Do you think the ban has changed which drugs young people take? | |
|  | Which drugs are most popular? Which drugs cause the most concern? |
| 1. Since the ban do you think more, or less, young people are taking Legal Highs? | |

## Results

Firstly, data from the background questionnaires are presented, including sample characteristics, data relating to the use of psychoactive substances by participants and their friends, and participants awareness of the PS Act. This is followed by the results of the thematic analysis which starts with the findings of the novel questions used to elicit participants beliefs about the impacts of the PS Act, before presenting the findings of the questions repeated from Study 1.

The sections presenting the outcome of the comparable set of questions start with an overview of the themes expressed within the transcripts, together with information about their frequency of expression and a set of indices illustrating differences in the expression of each theme within the pre-ban and post-ban focus groups. This is followed by tables which provide a breakdown of the individual beliefs coded under each theme, one table presenting findings related to reasons for using NPS, and the other related to reasons for not using NPS. The results section then concludes with a more detailed narrative description of each of the themes as they are expressed within participants’ discourse, drawing on the information provided in the preceding tables.

### Sample characteristics

Overall, 27 young people participated in the three focus groups. The demographic information for the sample is shown in Table 7-2 along with comparative information for Study 1. The participants were mostly female (78%) with a higher proportion of female to male participants compared with the Study 1 groups. Participants’ ages were comparable with the ages of the participants in Study 1 with an age range of 15 to 26, and a median age of 18.5. As with Study 1, the majority of participants were in tertiary education, although the proportion in employment was greater, and the proportion who were unemployed was noticeably smaller. The sample included participants from diverse ethnic backgrounds and the distribution of ethnic groups was similar to Study 1.

**Table 7-2 Study 1 sample characteristics**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Focus group** | |  |  |  |  |  |
| **Characteristic** | 1 | 2 | 3 | All | % | Study 1 |  |
| **Participants** |  |  |  |  |  |  |  |
| Number | 9 | 11 | 7 | 27 | - | 30 participants |  |
| **Gender identification** |  |  |  |  |  |  |  |
| Male | 3 | 2 | 1 | 6 | 22 % | 30 % |  |
| Female | 6 | 9 | 6 | 21 | 78 % | 70 % |  |
| **Age (years)** |  |  |  |  |  |  |  |
| Youngest | 17 | 15 | 15 | 15 | - | 15 years |  |
| Oldest | 23 | 23 | 26 | 26 | - | 25 years |  |
| Median | 20 | 18 | 17 | 18.5 | - | 18.5 years |  |
| **Occupation** |  |  |  |  |  |  |  |
| Student | 6 | 7 | 5 | 18 | 67 % | 67 % |  |
| Employed | 3 | 4 | 2 | 9 | 33 % | 23 % |  |
| Unemployed | 0 | 0 | 1 | 1 | 4 % | 30 % |  |
| Other / training | 1 | 4 | 1 | 6 | 19 % | - |  |
| **Ethnicity** |  |  |  |  |  |  |  |
| White British | 7 | 5 | 5 | 17 | 63 % | 60 % |  |
| Black /Black British | 2 | 2 | 0 | 4 | 15 % | 20 % |  |
| Asian /Asian British | 0 | 4 | 2 | 6 | 22 % | 17 % |  |
| Other | 0 | 0 | 0 | 0 | 0 % | 3 % |  |
|  |  |  |  |  |  |  |  |

Participants’ responses to questions about their own and their friends use of legal highs and traditional illicit drugs are shown in Table 6.3.

### Previous use of NPS

Seven participants reporting personal experience of NPS use in the present study compare to six in Study 1 (See table 7-3). At 26%, the proportion of participants in the sample who had used NPS was higher than might be expected based on general population estimates for young people in the UK which vary between about 2 – 10% (see Chapter 2). For those participants who had taken NPS, most had used them before implementation of the PS Act, as the number of participants reporting use of legal highs after the ban (11%) was less than half that reporting pre-ban use (26%). All participants citing use of NPS after May 2016 also reported use of NPS prior to implementation of the ban. In addition, all participants reporting use of NPS also reported use of traditional illicit drugs as well as both friends’ use of NPS and friends’ use of traditional illicit drugs.

The reduction in the use of NPS following the introduction of the PS Act was also apparent within participants’ perceptions of their friends' use of NPS, with friends’ pre-ban use of NPS reported by 63% of participants, while friends’ post-ban use was reported as 19%. As with those reporting personal use of NPS, all participants who reported that their friends had used NPS after the ban came onto force also reported that their friends had used NPS prior to the ban.

**Table 7-3 Use of NPS and illicit drugs by participants and their friends**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Focus group** | |  |  |  |  |  |
| **Question** | 1 | 2 | 3 | All | % | Study 1 |  |
|  |  |  |  |  |  |  |  |
| **Pre-ban NPS use** |  |  |  |  |  |  |  |
| Yes | 1 | 4 | 2 | 7 | 26 % | 20 % |  |
| No | 7 | 7 | 5 | 19 | 70 % | 80 % |  |
| Prefer not to say | 1 | 0 | 0 | 1 | 4 % | - |  |
| **Post-ban NPS use** |  |  |  |  |  |  |  |
| Yes | 2 | 0 | 1 | 3 | 11 % | - |  |
| No | 6 | 11 | 6 | 23 | 85 % | - |  |
| Prefer not to say | 1 | 0 | 0 | 1 | 4 % | - |  |
| **Illicit drug use** |  |  |  |  |  |  |  |
| Yes | 4 | 5 | 3 | 12 | 44 % | 50 % |  |
| No | 4 | 6 | 4 | 14 | 52 % | 50 % |  |
| Prefer not to say | 1 | 0 | 0 | 1 | 4 % | 0 % |  |
| **Friends’ pre-ban NPS use** |  |  |  |  |  |  |  |
| Yes | 4 | 8 | 6 | 17 | 63 % | 57 % |  |
| No | 4 | 2 | 1 | 7 | 26 % | 43 % |  |
| Not Sure | 0 | 1 | 0 | 2 | 7 % | - |  |
| Prefer not to say | 1 | 0 | 0 | 1 | 4 % | - |  |
| **Friends’ post-ban NPS use** |  |  |  |  |  |  |  |
| Yes | 2 | 2 | 1 | 5 | 19 % | - |  |
| No | 6 | 8 | 5 | 19 | 70 % | - |  |
| Not Sure | 0 | 1 | 1 | 2 | 7 % | - |  |
| Prefer not to say | 1 | 0 | 0 | 1 | 4 % | - |  |
|  |  |  |  |  |  |  |  |

**Table 7-3 Continued**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Focus group** | |  |  |  |  |  |
| **Question** | 1 | 2 | 3 | All | % | Study 1 |  |
| **Friends’ illicit drug use** |  |  |  |  |  |  |  |
| Yes | 7 | 9 | 6 | 22 | 81 % | 83 % |  |
| No | 1 | 1 | 1 | 3 | 11 % | 17 % |  |
| Not Sure | 0 | 1 | 0 | 1 | 4 % | - |  |
| Prefer not to say | 1 | 0 | 0 | 1 | 4 % | - |  |
|  |  |  |  |  |  |  |  |

### Previous use of illicit drugs

The number of participants reporting use of traditional illicit drugs (44%) was fewer than Study 1 (50%), but still greater than general population estimates for young people in the UK which according to the Crime Survey for England and Wales is about 35% (CSEW, 2017). Participants’ perceptions of their friends’ use of traditional illicit drugs were more comparable, with 83% of Participants in Study 1 reporting that their friends had used illicit drugs, and 81% in Study 2.

### **Substances**

During their discussions participants generally referred to NPS as ‘legal highs’ in line with the wording used in the questions. However, as in Study 1, there were several spontaneous references to specific named substances (see Table 7-4). The range of substances referred to in Study 2 was narrower than Study 1, and fewer references were made to specific substances with the exception of nitrous oxide (NOS) which was commented on with somewhat greater frequency.

**Table 7-4 Specific named substances spontaneously referred to in Studies 1 and 2**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Substance / product** | **Study 1** | | | **Study 2** | | **Diff.** | |
| Spice | 23 |  | 20 | |  | 3 |  |
| Bath Salts | 6 |  | 0 | |  | - 6 |  |
| Michael Jordan | 4 |  | 0 | |  | - 4 |  |
| Black mamba | 3 |  | 1 | |  | - 2 |  |
| Clockwork orange | 2 |  | 1 | |  | - 1 |  |
| Mephedrone | 2 |  | 0 | |  | - 2 |  |
| Nitrous oxide | 2 |  | 9 | |  | + 7 |  |

### Participants perceptions of the PS Act

While all participants taking part in the study had heard of legal highs, not all of them were aware of the PS Act, although the majority reported that they had heard about the ban prior to attending the focus group session (see Table7-5).

**Table 7-5 Participants awareness of the PS Act**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Focus group** | |  |  |  |
| **Question** | 1 | 2 | 3 | All | % |
|  |  |  |  |  |  |
| **Heard of legal highs** |  |  |  |  |  |
| Yes | 9 | 11 | 7 | 27 | 100 % |
| **Heard of ban** |  |  |  |  |  |
| Yes | 9 | 6 | 6 | 21 | 78 % |
| No | 0 | 4 | 1 | 5 | 18 % |
| Not sure | 0 | 1 | 0 | 1 | 4 % |
|  |  |  |  |  |  |

### Data analysis

A thematic analysis procedure adapted from the four-step process adopted in Study 1 was used to organise and interpret the data as described in more detail in Chapter 4 Sections 4.7 and 4.8.

During analysis 690 meaningful statements were identified within the focus group transcripts which were analysed and coded into 55 organising themes. For the sorting tasks used to arrange the organising themes into global themes, the open and closed sorting methods produced comparable results, with all ten themes from Study 1 providing a good fit with the data, but with the addition of a new global theme accounting for the ban in the open sorting task. Accordingly, the Study 1 analysis framework was used to describe the data together with one additional theme incorporating participants’ beliefs about the impacts of the PS Act. Once the analysis framework was established a second coder read samples from each of the focus group transcripts and assessed the content of the coding categories. Initial agreement was 89% and the discrepancies in coding were then discussed until a consensus was reached.

To aid comparison between the pre-ban and post-ban data, participants’ responses to the additional ban-focused questions were presented separately to their responses to the questions repeated from Study 1.

### Impact of the PS Act

Participants’ responses to the questions about the impact of the PS Act were summarised in four positions as shown in Table 7-6.

**Table 7-6 Belief categories for statements assessing the impact of the PS Act**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Global theme** | | **Organising theme** | **FGs** | **Freq** |
| **N** | | |  |  |
| **Impact of the PS Act** | **32** | Ban has had no effect | 3 | 19 |
|  | | Ban had reduced visibility of use | 1 | 7 |
|  | | Ban has made things worse | 1 | 4 |
|  | | Ban has reduced use of LHs | 2 | 2 |
| **N** | | |  |  |

The most common belief, expressed in all three groups, was that the ban appeared to be having little or no effect. Participants noted that NPS remained easily available, continued to be used and that many people seemed unaware of the ban, while those who were aware, were unlikely to be influenced by the change in legal status. In contrast, a smaller number of participants felt the ban had affected NPS use. While two participants attributed a reduction in use to increased awareness of the risks of using legal highs, others felt the ban had impacted the visibility of NPS use, with use of legal highs being driven underground and consumed less publicly. Other participants believed that the situation had got worse following the implementation of the PS Act, reporting increased rates of use by young people and street users, as well as expressing concern about the reduced attention being given to NPS related issues as a result of their illegal status.

### Global themes and organising themes

Concerning participants’ responses to the questions replicated from the pre-ban study, 658 meaningful utterances were identified and coded into 51 organising themes. Although the data was initially coded using the organising themes devised in Study 1, the coding was not restricted to the pre-existing categories and new codes were created to capture the novel statements that emerged. Of the original set of organising themes identified in Study 1, 83% were also present in participants’ discussions in the Study 2 focus groups. While 8 of the pre-existing organising themes were absent, 9 novel categories of theme emerged. Analysis of the post-ban groups produced 30 organising themes assessed as encouraging use of NPS, which accounted for 55% of coded comments (an 8% reduction compared to Study 1) and 21 belief categories discouraging use of NPS which accounted for 45% of coded comments (an 8% increase compared to Study 1).

Each global theme is described in more detail in Sections 6.4.9.1 to 6.4.9.10 following the presentation of the comparative data and data relating to the organising themes that constitute each global theme.

#### Global themes and comparative indices

An overall summary of the themes expressed within participants’ discourse are reported in Table 7-7. Table 7-8 presents a summary of each theme expressed in relation to statements assessed as encouraging use of NPS, while Table 7-9 presents the same set of data for statements assessed as discouraging use of NPS. To provide a measure of the extent to which each theme was emphasised within participants discussions, in all three tables, each theme is shown together with the number of statements associated with that theme and its corresponding coverage within the transcripts, presented as a percentage of the total number of statements coded (*n* = 658). Themes are reported in rank order with the most frequently referenced theme ranked first.

The tables also present information for a set of difference indices created to aid comparison between the pre- and post-ban data. Three difference indices and an overall difference score was calculated for each global theme. The difference indices relate to: the difference in the number of statements referencing each theme; the difference in rank for each theme; and the difference in the number of organising themes within each global theme.

In the tables that display the data for statements encouraging use (Table 7-8) and discouraging use (Table 7-9) raw data for each difference indices is shown, along with a rank based on difference score calculated for each theme. The difference score represents a general measure of difference which was calculated as a sum of the rankings for each global theme for each of the difference indices. The sum of the rankings was then ranked with the global theme showing the greatest difference first and the least difference last.

As Table 7-7 displays data for the themes overall, the difference indices for each global theme combine data for each behavioural outcome (i.e. taking NPS and not taking NPS) and therefore raw difference data for each theme are not suitable as differences may appear suppressed where the theme has increased in relation to one outcome and decreased in relation not the other. For this reason, in Table 7-7 each global theme has instead been assigned its rank relating to a combined measure for each difference index, with higher rankings reflecting greater differences between the pre- and post-ban discussions for each global theme. Further information on the difference indices used see Chapter 4 Section 4.8.

**Table 7-7 All coded statements: Themes identified in the post-ban focus groups ranked by frequency of expression**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | |  | |  | | **Difference references** | | **Difference Rank** | | **Difference No beliefs** | | **Difference score** | |
| **Rank** | **Theme** | | **Number of references** | | **Percentage coverage** | | **Rank** | | **Rank** | | **Rank** | | **Rank** | |
| **1.** | **Risk perception** | 217 | | 33 % | | 8 | | 10 | | 8 | | 9 | |  |
| **2.** | **Coping** | 78 | | 12 % | | 2 | | 1 | | 8 | | 3 | |  |
| **3.** | **Social influences** | 73 | | 11 % | | 6 | | 4 | | 4 | | 5 | |  |
| **4.** | **Legal status** | 53 | | 8 % | | 5 | | 7 | | 2 | | 5 | |  |
| **5.** | **Accessibility** | 52 | | 8 % | | 1 | | 4 | | 6 | | 2 | |  |
| **6.** | **Substitution** | 51 | | 8 % | | 10 | | 6 | | 1 | | 7 | |  |
| **7.** | **Authority** | 45 | | 7 % | | 7 | | 7 | | 4 | | 8 | |  |
| **8.** | **Identity** | 40 | | 6 % | | 3 | | 4 | | 3 | | 1 | |  |
| **9.** | **Pleasure** | 28 | | 4 % | | 3 | | 1 | | 8 | | 4 | |  |
| **10.** | **Curiosity** | 21 | | 3 % | | 9 | | 9 | | 8 | | 9 | |  |
|  | **Total** | **658** | | **100 %** | |  | |  | |  | |  | |  |

Percentage coverage = the number of references expressed as a proportion of the total number statements coded (n=658)

**Table 7-8 Statements encouraging use of NPS: Themes identified in the post-ban focus groups ranked by frequency of expression.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | |  | |  | | **Difference references** | | **Difference rank** | | **Difference No beliefs** | | **Difference score** | | | | |
| **Rank** | **Theme / description** | | **Number of references** | | **Percentage coverage** | |  | |  | |  | | **Rank** | | |
| **1.** | **Coping** |  | | 78 | | 12 % | | + 56 | | + 8 | | 0 | | 1 |  | |
| **2.** | **Social influences** | Peer approval | | 66 | | 10 % | | + 33 | | + 4 | | 0 | | 4 |  | |
| **3.** | **Risk perception** | Safety | | 57 | | 9 % | | + 3 | | 0 | | 0 | | 10 |  | |
| **4.** | **Legal status** | Legal | | 38 | | 6 % | | - 22 | | - 2 | | 3 | | 7 |  | |
| **5.** | **Accessibility** | Easy | | 32 | | 5 % | | - 43 | | - 4 | | 1 | | 3 |  | |
| **6.** | **Substitution** | Use of NPS | | 22 | | 3 % | | + 3 | | + 4 | | 2 | | 6 |  | |
| **7.** | **Curiosity** |  | | 21 | | 3 % | | - 11 | | + 1 | | 0 | | 9 |  | |
| **7.** | **Authority** | Approval | | 21 | | 3 % | | - 27 | | - 4 | | 1 | | 2 |  | |
| **9.** | **Pleasure** | Pleasant effects | | 20 | | 3 % | | - 23 | | - 4 | | 0 | | 8 |  | |
| **10** | **Identity** | Positive user | | 9 | | 1 % | | - 27 | | - 3 | | 1 | | 5 |  | |
|  | **Total** | | | **364** | | **55 %** | |  | |  | |  | |  |  | |

Percentage coverage = the number of references expressed as a proportion of the total number statements coded (n=658)

**Table7-9 Statements discouraging use of NPS: Themes identified in the post-ban focus groups ranked by frequency of expression.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | |  | | |  | | **Difference references** | | **Difference rank** | | **Difference No beliefs** | | **Difference score** | |
| **Rank** | **Theme / description** | | **Number of references** | | | **Percentage coverage** | |  | |  | |  | | **Rank** | |
| **1.** | **Risk perception** | Harm | | 160 | 24 % | | + 22 | | 0 | | 0 | | 7 | |  |
| **2.** | **Identity** | Negative user | | 31 | 5 % | | + 14 | | + 3 | | 2 | | 1 | |  |
| **3.** | **Substitution** | Use of traditional drugs | | 29 | 4 % | | - 3 | | - 1 | | 3 | | 6 | |  |
| **4.** | **Authority** | Disapproval | | 24 | 4 % | | + 4 | | 0 | | 1 | | 8 | |  |
| **5.** | **Accessibility** | Difficult | | 20 | 3 % | | + 20 | | + 2 | | 1 | | 2 | |  |
| **6.** | **Legal status** | Illegal | | 15 | 2 % | | + 17 | | + 2 | | 1 | | 4 | |  |
| **7.** | **Pleasure** | Unpleasant effects | | 8 | 1 % | | - 18 | | - 4 | | 0 | | 3 | |  |
| **8.** | **Social influences** | Unacceptable | | 7 | 1 % | | 0 | | - 2 | | 2 | | 4 | |  |
|  | **Total** | | | **294** | **45 %** | |  | |  | |  | |  | |  |

Percentage coverage = the number of references expressed as a proportion of the total number statements coded (n=658)

#### Comparison of the frequency of expression for global themes

The number of statements referencing each global theme in both the pre-ban and post-ban groups are illustrated by a bar chart for statements encouraging use of NPS in Figure 7-2, and for statements discouraging use of NPS in Figure 7-3. For the purposes of comparison, the frequency data from Study 2 has been adjusted to account for the smaller number of statements coded in Study 2 compared to Study 1 (Study 1 *n* = 750, Study 2 *n* = 658). This was done by multiplying each Study 2 by a factor of Study 1 overall total (750) divided by the Study 2 overall total (658).

Figure 7-2. Encouraging use of NPS: Number of statements referencing each theme

Comparison of frequency data for global theme expression within the set of statements encouraging use of NPS shows that with the exception of risk perceptions and substitution, most themes differ in the extent to which they were emphasised in participant discussions. While the coping theme and social influence themes show notable increases while the number of references made to accessibility, legal status, authority, pleasure identity and curiosity are noticeably fewer.

Figure 7-3. Discouraging use of NPS: Number of statements referencing each theme

Comparison of frequency data for global theme expression within the set of statements discouraging use of NPS shows that the greatest differences relate to increases in the number of references made toward risk perception, accessibly, legal status, and to a lesser extent identity. In contrast, participants’ emphasis on the unpleasant effects associated with NPS use is notably less.

#### Organising themes

A breakdown of the organising themes associated with use of NPS is shown in Table 7-10, and a breakdown of the organising themes associated with non-use in Table 7-11. The organising themes are arranged by global theme and shown together with a count of the frequency with which they were expressed within participants’ conversations and the number of focus groups in which they occurred. In addition, a third column shows the adjusted total for each organising theme to normalise the data as described in Section 7.4.8.2 to allow comparison. Accordingly, the final column shows the difference in the expression between Study 1 and the adjusted figure for Study 2. It should be noted that the difference figure is solely intended as a guide to interpretation to indicate the relative scale and direction of any differences.

A summed frequency for each global theme is also included in the table, with the global themes ranked according to the amount of emphasis they received within the focus group discussions.

**Table 7-10. Beliefs, reasons and motives encouraging use of NPS**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Global theme** |  | | **Organising theme** | **FGs** | | **Freq.** | | | **Adj.** | | **Diff.** |
| **Coping** | **78** | Coping / escapism | | | 3 | | 41 | 47 | | + 33 | | |
|  |  | Tough life / vulnerable | | | 3 | | 19 | 22 | | +12 | | |
|  |  | Addiction | | | 3 | | 18 | 21 | | + 12 | | |
| **Social influences** | **66** | Friends approval / peer pressure | | | 3 | | 40 | 46 | | + 18 | | |
|  |  | Normal / acceptable to use | | | 3 | | 26 | 30 | | + 16 | | |
| **Risk perception** | **57** | Lack of awareness / education | | | 3 | | 30 | 34 | | - 2 | | |
|  |  | Risk denial / try another | | | 3 | | 14 | 16 | | + 3 | | |
|  |  | Safe to use | | | 3 | | 13 | 15 | | 2 | | |
| **Legal status** | **38** | Because they are legal | | | 3 | | 21 | 24 | | + 5 | | |
|  |  | Legal status doesn’t matter | | | 3 | | 9 | 10 | | - 1 | | |
|  |  | Legal means safe to use | | | 2 | | 4 | 5 | | - 3 | | |
|  |  | Illicit status is enticing\* | | | 2 | | 4 | 5 | | + 5 | | |
|  |  | Fit in without doing something illegal✝ | | | 0 | | 0 | 0 | | - 6 | | |
|  |  | No trouble because it’s legal✝ | | | 0 | | 0 | 0 | | - 14 | | |
| **Accessibility** | **32** | Easy to get | | | 3 | | 14 | 16 | | - 14 | | |
|  |  | Cheap | | | 3 | | 13 | 15 | | - 2 | | |
|  |  | Sold by dealers | | | 3 | | 4 | 5 | | - 3 | | |
|  |  | Sold in shops | | | 1 | | 1 | 1 | | - 31 | | |
| **Substitution** | **22** | Cheaper than traditional drugs | | | 3 | | 10 | 11 | | + 9 | | |
|  |  | Safer than traditional drugs | | | 3 | | 7 | 8 | | + 4 | | |
|  |  | Traditional drugs hard to get | | | 2 | | 3 | 3 | | - 6 | | |
|  |  | Better than traditional drugs\* | | | 1 | | 2 | 2 | | + 2 | | |
|  |  | Don’t want to do illicit drugs✝ | | | 0 | | 0 | 0 | | - 7 | | |
| **Authority** | **21** | Rebellion / do what you want | | | 3 | | 14 | 16 | | - 4 | | |
|  |  | Parents approve of use | | | 3 | | 5 | 6 | | 0 | | |
|  |  | Government approves of use | | | 1 | | 2 | 2 | | - 3 | | |
|  |  | Won’t get into trouble✝ | | | 0 | | 0 | 0 | | - 20 | | |

**Table 7-10. Beliefs, reasons and motives encouraging use of NPS - continued**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Global theme** |  | | **Organising theme** | **FGs** | **Freq.** | | **Adj.** | | **Diff.** |
| **Curiosity** | **21** | Curiosity | | 3 | 10 | 11 | | - 10 | | |
|  |  | Appealing marketing | | 2 | 6 | 7 | | - 2 | | |
|  |  | Awareness encourages use | | 1 | 5 | 6 | | 1 | | |
| **Pleasure** | **20** | For the high | | 3 | 10 | 11 | | - 23 | | |
|  |  | Enjoyable / fun | | 3 | 10 | 11 | | - 1 | | |
| **Identity** | **9** | Anyone could be a user | | 3 | 6 | 7 | | - 6 | | |
|  | | Non-users are straight | | 2 | 3 | 3 | | - 2 | | |
|  | | Users are from good backgrounds✝ | | 0 | 0 | 0 | | - 19 | | |

\* Novel coding category ✝ Coding category absent

**Table 7-11. Beliefs, reasons and motives discouraging use of NPS**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Global theme** |  | **Organising theme** | **FGs** | **Freq.** | | **Adj.** | **Diff.** |
| **Risk perception** | **160** | Harmful / deadly | 3 | 65 | 74 | | + 33 |
|  |  | Not regulated / bad ingredients | 3 | 27 | 31 | | + 1 |
|  |  | Risk aware / educated | 3 | 26 | 30 | | 0 |
|  |  | Risk aware / media | 3 | 22 | 25 | | + 13 |
|  |  | Risks unknown / unknown effects | 3 | 14 | 16 | | - 9 |
|  |  | Too strong / lose control | 2 | 6 | 7 | | - 15 |
| **Identity** | **31** | Users are homeless people | 3 | 20 | 23 | | + 17 |
|  |  | Rich kids use better drugs\* | 2 | 9 | 10 | | + 10 |
|  |  | Non-users are clued up | 2 | 2 | 2 | | - 5 |
|  |  | Users are underage kids✝ | 0 | 0 | 0 | | - 8 |
| **Substitution** | **29** | More dangerous than traditional | 3 | 17 | 19 | | - 13 |
|  |  | People can afford better drugs\* | 2 | 6 | 7 | | + 7 |
|  |  | Traditional drugs easier to get\* | 2 | 6 | 7 | | + 7 |
|  |  | Traditional drugs better✝ | 0 | 0 | 0 | | - 4 |
| **Authority** | **24** | Authority figures disapprove | 3 | 10 | 11 | | 1 |
|  |  | Don’t want to get into trouble\* | 1 | 8 | 9 | | + 9 |
|  |  | Parents disapprove of use | 2 | 6 | 7 | | - 6 |
| **Accessibility** | **20** | Hard to get\* | 3 | 17 | 19 | | + 19 |
|  |  | Waste of money | 1 | 3 | 3 | | 0 |
| **Legal status** | **15** | Because they are illicit\* | 2 | 15 | 17 | | + 17 |
| **Pleasure** | **8** | Bad trip | 1 | 6 | 7 | | - 2 |
|  |  | Unpleasant effects | 1 | 2 | 2 | | - 16 |
| **Social influences** | **7** | Socially unacceptable | 3 | 7 | 8 | | + 5 |
|  |  | Friends disapprove of use✝ | 0 | 0 | 0 | | - 3 |
|  |  | Resist social pressure✝ | 0 | 0 | 0 | | - 2 |

\* Novel coding category ✝ Coding category absent

### Differences in global themes

The following sections describe each theme, presented in rank order according to the extent of the differences observed between the pre- and post-ban data (see Table 7-7).

#### Identity

The identity theme centred on descriptions of users and non-users of NPS. Although this theme was not especially prominent in either the pre-ban or the post-ban focus groups, referred to in 5% and 6% of the total coded statements respectively, young people’s conversations about user and non-user types nevertheless demonstrated the greatest differences pre- and post-ban. The types of users and non-users described in the two sets of focus groups were strikingly different, and to illustrate these differences a stacked column chart has been used to show relative proportions of each prototype described pre-ban and post-ban in Studies 1 and 2 (see Figure 7-4).

While a few participants still commented on a lack of recognisable user types, there was as a notable absence of two user prototypes described in the pre-ban groups. In particular, what had previously been the most commonly described user type, namely young people from affluent backgrounds, was not referred to in the post-ban conversations. According to young people in the focus groups, young people from more affluent and middle-class backgrounds were more likely to use what were described as better quality drugs such as ecstasy and cocaine. These young recreational drug users from affluent areas were reasoned to be using traditional drugs instead of NPS since they can afford what were viewed by several participants as ‘safer’ drugs.

**Figure 7-4. Stacked bar chart showing the number of references to various NPS user and non-user prototypes in the pre-ban and post-ban focus groups**.

The use of traditional illicit drugs by those who are more well-off was contrasted with poorer users in less affluent areas of the city who were presented as having fewer options available to them, and less able to control the quality of what they buy. Within this context, participants described NPS as ‘cheap crap’, low quality and ‘a poor man’s drug’ for people who can’t afford anything better. Accordingly, the number of references to users who were homeless, vulnerable or living in poverty were three times greater in the post-ban focus groups than the pre-ban groups, making this the most prominent user prototype expressed in this study. Within participants’ conversations, the homeless user prototype was associated with the use of NPS as a coping mechanism for dealing with the challenges and vulnerabilities faced in their lives. While several participants described seeing homeless street users first-hand in town, the homeless user prototype was also linked to media sources, with several participants describing documentaries and Facebook videos depicting users of NPS as homeless people. In a similar vein, social media videos appeared to be associated with the reputation of spice as ‘the zombie drug’ due to the zombie-like state of street users seen and videoed in town centres.

Also absent from participants’ discussions were references to the underage users described by several participants in the pre-ban groups. Previously these young users, aged as young as 12 according to participants in Study 1, were linked with shop sales; however, in the post-ban groups, young people noted that shops no longer sell NPS and they did not express the same concern about children seen purchasing NPS as the pre-ban participants had expressed.

#### **Accessibility**

The accessibility theme brought together statements about availability and cost, and it was within this theme that some of the greatest differences between the pre- and post-ban focus groups were observed. While overall, the emphasis on accessibility in young people’s discussions was less than half that of the pre-ban groups, the extent to which accessibility was presented as a barrier to use of NPS more than doubled. Consequently, what had been the highest-ranked theme linked with NPS use in the pre-ban group was ranked 5th for emphasis in post-ban discussions, while what had been the lowest-ranked theme in relation to non-use was ranked three places higher in the post-ban groups.

As a reason for use, easy accessibility was still associated with the low cost of NPS, but the number of observations about their availability was noticeably lower. Although NPS were still commonly described as easy to access via friends and dealers, the extent to which participants highlighted the easy availability of NPS was considerably less, particularly in relation to access via shops. The reduced availability of NPS as a result of the ban was clearly apparent within participants’ discussions, with many young people observing that shops no longer sold NPS. This was in marked contrast to pre-ban discussions in which the sale of NPS in shops, typically synthetic cannabinoids, was given much attention.

The reduced availability of NPS led to the emergence of the new coding category ‘hard to get’, a sentiment which had not been expressed in the pre-ban groups but was referenced in the post-ban groups several times. Participants noted that, particularly for young people without connections to drug dealers, NPS had become much harder to access, with a few participants admitting they no longer knew how to get hold of legal highs despite having easy access to traditional illicit drugs.

#### **Coping**

The coping theme, which focused on the use of NPS as a coping mechanism and tough lives and vulnerability of users, demonstrated the greatest relative increase in emphasis of all topics discussed by participants in the post-ban focus groups.

In the pre-ban group discussions, coping related comments were mentioned fairly infrequently, making up only 4% of statements and ranked last for overall emphasis. In the post-ban groups, however, comments related to coping and the need to cope were far more prominent, associated with 12% of all coded statements which made coping theme the second most frequently expressed topic overall, and the single most frequently expressed topic associated with the use of NPS. Although coping motives received more attention in the post-ban groups, the content of participants’ comments remained largely similar to the pre-ban groups, with participants describing NPS use as a way of coping with stress, loneliness, boredom and difficult circumstances. While in the pre-ban groups, participants particularly highlighted the use of NPS for stress relief and escapism, participants in the post-ban groups also highlighted the challenging lives of vulnerable people to a greater extent. In-line with the greater emphasis placed on street users, participants highlighted the relationship between NPS use and the need to forget problems caused by poverty, mental health issues, homelessness and addiction. As in the pre-ban focus groups, addiction was presented as both a cause and a consequence of NPS use but was referred to at almost twice the frequency as seen in the pre-ban discussions.

Although the coping theme was strongly influenced by what appeared to be a greater awareness of homeless users, coping motives were not limited to discussion of street users, and NPS continued to be linked with stress relief due to the pressures faced by young people such as academic expectations and social isolation.

#### **Pleasure**

While discussions of the pleasant and unpleasant effects of NPS were quite prominent in the pre-ban focus groups, in the post-ban groups the experiential effects associated NPS use received less than a third of the attention they had in the pre-ban groups making it one of the lowest-ranked themes for emphasis. The pleasure theme was the only theme which was reduced in emphasis relation to both use and non-use, in other words, a reduced emphasis on the pleasurable effects of NPS was not counteracted by increased attention on the unpleasant effects, but rather, participants talked about the effects of NPS less in general.

Much of this difference was accounted for by a reduced emphasis on the use of NPS to get high, meaning this was no longer one of the most frequently mentioned beliefs as it has been within the pre-ban groups. Other notable differences were the lower prominence of references to the unpleasant effects and bad trips associated with use of legal highs, which had been one of the most emphasised themes associated with non-use in the pre-ban discussions but was rarely mentioned in the post-ban groups.

#### **Legal status**

Prior to the ban, comments linked with legal status were one of the most prominent themes within participants’ discussions of factors that encouraged the use of NPS, and this theme had previously been ranked second in relation to NPS use. However, within the post-ban groups, the number of comments related to legal status were considerably fewer, with a frequency of expression half that of the pre-ban groups. In addition, where legal status had previously been presented as only encouraging use, the change in the status of NPS was, in the post-ban groups, also presented as a barrier to use.

The legal status theme not only differed in emphasis, but also content, with two organising themes no longer present, and two novel themes arising. While the sentiments that NPS offered a way to take drugs without getting in trouble, and a way to have fun with friends without engaging in an illicit activity were not expressed in the post-ban groups, the perceived illicit status of NPS emerged as both a perceived barrier to use and an enticement. While perceptions of illicit status associated with NPS was quite frequently presented as off-putting for young people, a few participants felt that for some people, the perceived illicit status of NPS may be enticing as NPS seem cooler, with their perceived illicit status providing an added rush of excitement.

With regard to what made perceived illicit status unappealing, participants associated illicit status with a greater perception of health risks, with several participants commenting that they had revised their own opinion, and whereas they had not considered the risks before, the change in legal status made them take the dangers of NPS use more seriously. Participants did not, however, refer to the risks of getting in trouble, despite NPS no longer being viewed as a way to avoid getting in trouble.

Interestingly, despite the change in legal status of NPS, participants nevertheless believed that for young people unaware of the ban, the belief that NPS are legal continues to encourage their use. In this respect, participants commented on the confusion caused by use of the term ‘legal highs’ expressing concern that people may wrongly assume that substances described as legal highs are still legal. As found in the pre-ban focus groups the belief that legal status encourages use was related to beliefs of safety and the perception that being legal means they must be safe to use.

#### **Social influences**

The social influences theme centred on peer approval and the social acceptability of NPS use. Compared to the pre-ban focus groups, social influences received notably more attention within the post-ban groups, with a frequency of expression greater by about a third. As a result, this theme was ranked 5 places higher for emphasis and was the second most frequently expressed theme in relation to NPS use.

As in the earlier groups, social influences were more commonly associated with reasons for using NPS than reasons for not using NPS, with NPS use frequently linked to the approval of friends and peers, social norms and perceived social acceptability. In the post-ban focus groups, the increased emphasis on social influences as a reason for use appeared to be related to the framing of NPS as part of the normal culture of drug-taking which participants typically described as something ‘everyone does’. Compared to the pre-ban groups where NPS use was presented as a discrete activity that was contrasted with ‘normal’ drug use, in the post-ban groups there seemed to be less of a distinction being made between NPS and illicit drugs and consequently, participants tended to refer more frequently to general social pressure to engage in drug use.

#### **Substitution**

The substitution theme brought together comments which presented NPS within the context of choosing between use of legal highs or traditional drugs. In total, the number of comments associated with this theme in the post-ban groups was equivalent to the number pre-ban. However, within the theme, the types and emphasis of the constituent beliefs differed noticeably, with the absence of two previous organising themes and the emergence of three novel themes.

In terms of statements encouraging use, in the post-ban discussions, the relative ease of obtaining NPS compared to traditional drugs was emphasised somewhat less, while their lower price and relative safety were highlighted more. In addition, a couple of participants also expressed the novel belief that people will use NPS if they think the effects are better than those of traditional drugs. However, following the ban, participants no longer considered NPS as a viable alternative to illicit drugs based on their perceptions of their legal status.

For statements assessed as discouraging the use of NPS, while participants in both the pre- and post-ban groups frequently presented NPS as more dangerous than traditional drugs, the relative harmfulness of NPS was less strongly emphasised in the post-ban groups. Despite this de-emphasis on the relative dangers of NPS use, several participants expressed the belief that NPS had become more dangerous than traditional drugs following the implementation of the ban, owing to increased potency and adulteration with other substances. Participants also expressed two novel beliefs supporting the use of traditional drugs over the use of NPS; that people who are able to afford better drugs are less likely to use them; and that traditional drugs are easier to get hold of than NPS.

#### **Authority**

The authority theme, which centred on comments related to authority and autonomy, was associated with fewer comments in the post-ban groups, with nearly half the number of references compared to the pre-ban groups.

The change in emphasis was largely driven by a notable de-emphasis on authority related factors in explanations for the use of NPS. In particular, while the belief that people use NPS to avoid getting in trouble was frequently noted in the pre-ban focus groups it was not mentioned in the post-ban groups. Participants still referred to the desire to avoid getting in trouble and the fear of getting caught, but in the post-ban groups this motive was associated with non-use of NPS, and consequently was assessed as discouraging use of NPS.

#### **Curiosity**

As with the pre-ban groups, curiosity motives were only presented as encouraging the use of NPS. While participants in the post-ban groups described and emphasised the appealing branding of NPS, in much the same way as the pre-ban groups, they only made about half the number of references to curiosity as a motive for use. Curiosity was nevertheless mentioned a moderate number of times and its ranking relative to other themes remained the same in relation to the reasons for use both pre- and post-ban.

#### **Risk perception**

In both the pre- and post-ban focus groups, comments about the harmfulness and safety of NPS received the greatest emphasis during participants’ discussions, with this theme making up about a third of the total number of coded statements for both sets of focus groups. Despite being the most prominent theme, in general, young people’s discussions of risk and safety appeared not to be strongly affected by the ban. As found in the pre-ban groups, beliefs about the harm potential of legal highs appeared to both support and undermine NPS use, depending on whether NPS were presented as safe to use or harmful to health. Once again, references to the harmfulness of NPS were noticeably more prevalent than references to safety, with health risks mentioned at about 5 times the frequency of perceptions of safety or denial of risk. Both pre- and post-ban, this placed risk perception as the highest-ranked theme associated with non-use of NPS, with the negative harm potential of NPS referred to about three times as often as the next most commonly expressed theme.

While no novel beliefs relating to risk perception emerged in the post-ban focus group discussions, the emphasis placed on each sub-theme differed. In both the pre- and post-ban groups the belief that NPS are harmful or potentially deadly was the most prominent health risk belief; however, references to the harmfulness of NPS were noticeably more pronounced in the post-ban group with a stronger emphasis on the risk of death relative to the risk of harm in comparison to pre-ban discussions. While participants placed a similar level of emphasis on dangerous, inconsistent ingredients and the possibility of adulteration, there was somewhat less emphasis on the unknown risks associated with NPS use.

As with the pre-ban focus groups, participants believed that increased awareness of health risks would discourage use of NPS. Although participants highlighted the importance of education and noted the current lack of education around legal highs, young people in the post-ban groups focused less on the need for informed choice and more on the importance of harm-reduction approaches and teaching users how to take drugs more safely. In line with pre-ban participants, the young people in the post-ban groups revealed that their own awareness of the health risks of NPS use were largely gained through media sources. Media awareness was more strongly emphasised in the post-ban discussions, with a larger number of references made about media representations of NPS users and an increased number of references to online videos and social media sources.

Regarding perceptions of safety thought to encourage NPS use, there was little difference in either the emphasis or content of comments made by young people in the pre- and post-ban focus groups. Several participants felt many young people were still likely to see NPS as a safe option, with perceptions of safety thought to be linked to legal status for those young people unaware of the ban.

### Principal findings

In general, the young people who took part in this study felt the ban appeared to be having little effect, with sales and use of NPS being largely driven underground. Although most participants were aware of the ban themselves, they believed that other young people might not be. Consequently, participants indicated that for many young people the misconception that NPS are legally produced and distributed continues to encourage their use, largely due to perceptions of safety associated with their perceived legal status.

Overall, the impact of the PS Act was most apparent in participants’ descriptions of the types of people who do and do not use NPS. The most common group of users described pre-ban, namely young people from affluent backgrounds (i.e. recreational users), were notably absent in post-ban descriptions, while an emphasis on homeless users was conspicuously greater. Affluent recreational drug users were described as shifting to better quality drugs such as ecstasy and cocaine, and in the post-ban discussions, NPS were more obviously associated with poverty, drug dependency and the non-recreational use of drugs as a coping mechanism.

Although NPS continued to be described as easily obtainable, the cessation of open high street sales was very apparent within participants’ conversations. The very young users associated with shop sales in the pre-ban focus groups were not referred to in post-ban discussions of NPS. While young people thought that accessibility had become harder for those without connections to drug networks, the low cost of NPS was still presented as a driver of use, particularly for people whose choices are limited by poverty and financial pressures.

The greater emphasis on the use of NPS as a coping mechanism within participants’ conversations appeared to be accompanied by a de-emphasis of NPS use as a recreational activity. Accordingly, there was a corresponding lack of emphasis on the experiential effects of NPS, particularly pleasurable and hedonic effects.

The salience of legal status within young people’s discussions pre-and post-ban was lower, particularly in relation to factors encouraging use. While in the pre-ban focus groups, legal status was largely presented as facilitating use of NPS due to a perceived lack of risk of getting in trouble, this belief was no longer expressed in the post-ban groups. Although to some extent, the perceived illicit status of NPS was presented as a constraining factor due to fear of punitive consequences, perceptions of illicit status appeared to be more commonly linked to health risk implications.

In the focus groups conducted prior to the ban, the legal status of NPS appeared to serve as an important differentiator between NPS and traditional illicit drugs. However, in the post-ban groups, young people tended to frame NPS within a more general context of drug use, which on the one hand appeared to be linked with greater risk perceptions, but on the other hand, also appeared to normalise use. Within this broader context of drug use, NPS appeared to be most commonly distinguished from other drugs by user-profiles and price.

Although, in general, risk perceptions around NPS appeared fairly unaffected by the ban, NPS were more strongly associated with danger and harm, which appeared to be related to a greater emphasis on the role of the media as a source of information. In particular, media sources and social media videos appeared to highlight an association between NPS use and homelessness, as well as propagating the reputation of NPS as cheap, low-quality drugs that turn users into ‘zombies’.

## Discussion

According to the UK Government, the PS Act was intended to eliminate the open sales of NPS and send a clear health message that NPS are not safe to use. A 2018 Government review of the PS Act (HM Government, 2018) concluded that the primary purpose of the Act (i.e. the prevention of open sales) had been achieved. Furthermore, with early indications from the Crime Survey for England and Wales (CSEW, 2018) that NPS use by young people in the UK may have halved in the year following implementation of the Act, the Government review attributed this decrease in use to the reduction in availability of NPS on the high street and the deterrent effect of the change in legal status of NPS.

Although the young people taking part in the study generally thought the ban had little effect, the picture presented by their discussions is one broadly in line with the claims of the Government review. Across the sample, participants’ own use of NPS and perceptions of their peers’ NPS use more than halved, and the changes in availability of NPS were clearly reflected in participants’ discussions. Participants not only commented on the end of sales via shops, but they generally placed far less emphasis on the easy accessibility of NPS than was apparent in the pre-ban focus groups.

It should be noted, however, that the apparent reduction in use of NPS captured by the data collected in this study is not a robust measure of actual or intended NPS use as it effectively compares lifetime prevalence (any use of NPS pre-ban) with last year use (use of NPS in the 14-16 months between the ban and data collection) and participants’ intentions were not reported. Nevertheless, the overall impression is one in which young recreational users have moved away from using NPS, either through displacement or abstinence, since introduction of the Act. Also, they now generally seem to view NPS and NPS users more negatively than before the ban.

### The impact of the PS Act on health risk perceptions

With regard to the proposed ‘health message’ mechanism of change targeted by the Government via the PS Act, the findings of this study confirmed a tendency for young people to associate perceived legal status with safety and perceived illicit status with health risk. This suggests that, to some extent, the mechanism of change proposed by the Government is plausible, that is, changing the legal status of NPS may act as a health warning.

However, it is unclear to what extent NPS were already associated with health risks in the target population, as risk awareness appeared to be relatively high in all groups, both pre- and post-ban, and the risk perceptions expressed within the pre-ban groups and the post-ban groups remained reasonably comparable. Whether the health warning implied by the change in legal status influenced the decision making processes of potential users or simply reinforced the pre-existing beliefs of non-users remains unclear. It is also unclear to what extent perceptions of health risk actually influenced drug-taking behaviour. While most of the young people taking part in the study appeared to perceive drug use as risky, a significant proportion of participants admitted to using drugs anyway, and several participants commented on the tendency of their peers to deny or ignore the risks associated with drug use.

Nevertheless, health risks and safety perceptions were central concerns within participants’ discussions, and they expressed concern that other young people might continue to believe NPS were safe to use if they were unaware of the ban. Although the majority of the participants taking part in the study were aware of the ban, they generally thought that many young people were not, as publicity around the ban was low, and continued use of the name ‘legal highs’ was said to cause confusion. As any impact of the change in legal status of NPS is moderated by young people’s awareness of the ban, this suggests that the proposed health message pathway may not be a sufficient explanation for the apparent changes in NPS use.

What the findings of the study did highlight, however, are the potential risks associated with a heath warning approach, as there were indications that heightened perceptions of risk associated with NPS use have the potential to trigger displacement onto other substances. Young people frequently referred to factors influencing the substitution between substances, and of these, the relative harms of NPS compared to other substances was the most salient both pre-ban and post-ban. Furthermore, numerous participants noted that affluent recreational users were no longer using NPS, favouring instead traditional illicit drugs which they perceived as less dangerous than NPS.

### The shift from recreational use of NPS to problematic use

Of three distinct NPS user types described in the pre-ban focus groups, the most salient was affluent users. However, the picture presented by young people more than a year after the Act was a much stronger association between NPS and homeless users. Although prior to the ban young people did associate NPS use with homeless drug users, the street user identity was not the only, nor the most salient, perceived identity for NPS users whereas after the ban this was the only user type described by participants.

While the differences in user type could reflect differences in participants’ level of contact with NPS users and their insight into drug-taking cultures, the groups were reasonably well matched for NPS and drug experience and the general level of illicit drug use appeared to be higher than general estimates for their age group. From analysis of participants’ discussions, it appears that the increased association between NPS and homeless drug users was related to first-hand observation in the town centre and media sources such as documentaries, social media and the news.

Participants’ description of a shift away from NPS use by young affluent and middle-class drug users and their increased references to homeless and vulnerable users is in line with the findings of other studies. The DrugScope Street Drugs Survey (2014) highlighted a rapid shift in NPS use with a decrease in use by niche recreational populations (e.g. ???) and a rise in use by vulnerable stigmatised groups including the homeless, socially excluded teenagers and prison populations. Evidence from other studies also confirms a concentration of NPS use in marginalised and less affluent populations (Bonar, Ashrafioun, & Ilgen, 2014; Ralphs Gray & Norton, 2017; Scottish Prisoner Survey, 2017; User Voice, 2016).

The shift in user types was also apparent in an exploration of NPS use in Kent by Blackman and Bradley (2017) who found evidence of a move away from NPS use by middle-class recreational users, typically students, and increasingly problematic use associated with vulnerable stigmatised groups including homeless users. In exploring this shift, Blackman and Bradley drew attention to the role of the media in highlighting and perpetuating the changing perception of users via news stories and influential documentaries. Their analysis of documentaries noted depictions of two contrasting groups of users; recreational users searching for new pleasures and vulnerable young adults experiencing poverty and stigma. In this study, the influence of documentaries was evident within participants’ discussions whose descriptions of programs and user depictions closely match the descriptions of Blackman and Bradley.

The role of the UK media in the framing of NPS issues was also examined by Alexandrescu (2018) in a qualitative analysis of hundreds of NPS related news items spanning a period from 2009 to 2017. Like Blackman and Bradley, Alexandrescu identified two contrasting depictions of users: middle-class fun-loving youth and homeless users dubbed ‘spice zombies’. Within his analysis, the move from depictions of naïve recreational users to threatening, socially disadvantaged, users is made clear. Alexandrescu identifies two distinct peaks of media attention, the first corresponding with interest in the emergence and banning of mephedrone around 2009 to 2011, also noted by other authors (Carhart Harris & Nutt 2011; Measham et al., 2010; Winstock et al., 2010), and the second around 2016 and 2017, focusing on the prevalence of synthetic cannabinoids particularly in disadvantaged populations. The timing of this comparative study straddles this second peak, with Study 1 conducted in its ascendance and Study 2 around its height. Accordingly, we see participants referencing some of the same media stories highlighted by Alexandrescu, such as those in the Manchester Evening News as well as use of language perpetuated by media sources such as the references to spice ‘zombies’ (e.g. ‘chaos wreaked by the 'zombie' drug Spice’ M.E.N. 9/4/17). Alexandrescu (2010) and other authors also draw a connection between media stories and national policy, explaining the lack of consideration of scientific evidence by the Government in the development of drug legislation as a result of ‘knee jerk’ reactions to media pressure (Measham et al., 2011).

### From unpleasant to harmful

The shift in media attention from recreational users to problem-drug users may have interacted with and influenced drug-market dynamics, but the original driver of the shift appears to be changes in the quality of NPS products themselves. As the legislative changes known as the cat-and-mouse game (see Chapter 2 Section 2.2.4) catalysed the production of successive generations of chemically altered NPS the quality of NPS products became variable, often more potent and increasingly associated with unpleasant effects (Bilgre, 2016; DrugWise, 2017; EMCDDA, 2018; Ralphs Gray & Norton, 2017). For recreational users seeking pleasurable experiences, interest in NPS products was observed to wane (Blackman and Bradley, 2017).

Conversely, the increasing potency of NPS products, along with their low cost and the suspected targeting of vulnerable users by black market traders, was connected with increasing use by marginalised and disadvantaged groups (Ralphs Gray & Norton, 2017). As critics of the PS Act warned prior to its introduction, sales of NPS appear to have been driven underground, where products have become more dangerous owing to the unscrupulous practices of black market traders (DrugsWatch, 2018; EMCDDA, 2018; Measham & Newcombe, 2017; Stevens et al., 2015). This black market trade was noted by participants, who claimed that NPS remain easily accessible for those with connections to dealers and drug-using friend networks.

As the dangers and visibility of problematic NPS use increased, news sources increasingly depicted NPS as harmful and deadly and this seems to have influenced the risk perceptions of middle-class users in particular (Blackman & Bradley, 2017). Correspondingly, participants in this study largely connected their own risk awareness with media stories, documentaries and social media videos of vulnerable stigmatised users. We see also how discussions by participants in the post-ban focus groups focus less on descriptions of drug effects, both positive and negative, as well as showing fewer references to hedonistic motives and more references to coping motives and NPS harms. The overall picture is one in which NPS appear to be associated less frequently with recreational use by peers and increasingly as something associated with marginalised ‘others’.

### An alternative social pathway levered by legislation

For young people in the study, their perceptions of the type of people who use NPS appeared to convey important information that may influence their attitudes toward NPS use. The apparent absence of recreational NPS user types and the increased salience of homeless, vulnerable and dependent NPS users appeared to offer important social cues about the safety and desirability of NPS use. For participants, the association between NPS use and homeless users went hand-in-hand with the reputation of NPS as ‘cheap crap’ for addicts and those living in poverty.

The implication of this relationship between increased salience of homeless users and the off-putting reputation of NPS as a cheap drug for poor people is the potential existence of an alternative ‘stigmatisation’ pathway to behaviour change levered by drug legislation and the PS Act. In this pathway, the visibility of the effects of NPS on vulnerable drug users increases as a result of the increased harm potential associated with black market sales of NPS. The increased media attention generated by legislation and the proliferation of social media videos and documentaries focusing on users raised young people’s awareness of the association between homelessness and NPS use. Young people then used these social cues to assess the potential harms and suitability of NPS, whereby a negative assessment encouraged abstinence from NPS use or displacement onto other substances. This possible mechanism is illustrated in Figure 7-5.

The link between media depictions of NPS and changes in NPS use has been noted previously when in 2009 media coverage of deaths thought to be related to mephedrone caused its popularity to rise sharply as it gained a reputation as a cheap, legal alternative to ecstasy (Carhart Harris & Nutt 2011; Measham et al., 2010; Winstock et. al., 2010). However, at that time NPS such as mephedrone were of comparatively greater purity and consistency than their traditional illicit counterparts (i.e. cocaine and ecstasy), the quality of which had dropped significantly as a result of notable drug seizures (Ceyhan, 2008). In the current climate, the situation has now reversed, with the quality of NPS declining (DrugWise, 2017; EMCDDA,

Figure 7-5. A potential alternative stigmatisation pathway levered by legislative action

Visibility of vulnerable users

Increased harm potential of NPS

Psycho-social factors

Stigmatisation of NPS users

NPS use

Risk messages

Use of other drugs

Legislative actions

Drug harms

**\_**

**+**

**+**

**+**

**+**

**+**

**+**

**+**

**+**

Media coverage

Socio-structural adversity

**+**

**+**

**+**

**+**

2018; Ralphs Gray & Norton, 2017) while the quality of cocaine and ecstasy has improved (EMCDDA, 2018). While this emphasises the potential significance of social cues and user images as a source of information about the quality of drugs, it also highlights the importance of considering psychoactive substances within the context of the wider drug market. To understand users’ decision making around substance use it is important to be aware of the relative quality, purity and availability of substances and the processes that interact to determine these attributes.

## Implications

The findings of this comparative study have numerous implications for NPS interventions. While young people in the general population seem to be moving away from NPS use, it appears that this comes at the cost of disadvantaged users who are disproportionally affected by the increased harms associated with black market sales of NPS. NPS interventions must pay close attention to social inequalities and consider the potential impact of any intervention on marginalised and low SES users even if they are not the primary target population. In particular, interventions need to consider how they interact with processes of stigmatisation.

From a safety perspective, the potential for unintended negative consequences appears to be high. The negative unintended consequences of the PS Act are the increased harm potential of NPS (due to strength/purity) which now pose a greater threat to user’s health, and the displacement of NPS use onto other potentially harmful substances. The suspected migration by more affluent NPS users onto traditional illicit drugs, potentially in response to increased perceptions of health risks, suggests that interventions targeting recreational users may be particularly at risk of displacement effects in response to heightened risk perceptions associated with specific substances.

Regarding the relevance of NPS interventions, the convergence of the NPS market with the market for traditional illicit drugs brought about by the PS Act raises questions about the most appropriate populations to target in interventions. While the greatest need appears to be that of low SES users and marginalised populations this project set out with the explicit intention of addressing recreational use in the general population.

The indications are that with the end of open sales of NPS, use of these substances may be generally limited to people involved with existing drug networks. Although it is unclear to what extent users of traditional drugs use NPS following the ban, the proliferation of NPS within drug markets nevertheless means that recreational drug users are likely to encounter NPS, and there is a potential risk that other substances will be adulterated with cheap and readily available NPS. Consequently, recreational drug users would appear to be an appropriate population to target.

With regard to appropriate theory for use in NPS interventions, the stigmatisation pathway proposed here is very much in line with the propositions of the prototype willingness model (PWM; Gibbons, Gerrard & Lane, 2003; Gibbons & Gerrard, 1995; see Chapter 4 Section 4.5.5). The social reaction pathway described by the PWM is based on the assumption that young people’s perceptions of prototypical people associated with the risk behaviour (i.e. typical NPS users) influence their willingness to engage with the behaviour should the opportunity arise. The PWM presents a validated theoretical account of the processes highlighted within participants’ discussions in this study and therefore presents a suitable theory for use in NPS intervention. Prior to the introduction of the act, the suitability of the PWM was not as apparent, as participants had emphasised the lack of NPS user prototypes. However, in this study the potential significance of user and non-user prototypes has come to the fore, and what initially appeared to be a fairly inconsequential theme (i.e. identity) appears to have greater importance than previously appreciated. This also indicates that the prominence of a topic in young people’s conversations might not necessarily be an indicator of its significance for understanding young people’s behaviour.

## Strengths and limitations

In addition to the strengths and limitations discussed in relation to Study 1 (see Chapter 5 Section 5.5.4) this study has several limitations. The design on which this study is based (i.e. Study 1) was developed prior to the introduction of the PS Act and was not originally intended as a comparative study. Consequently, data was not collected using methods that would have provided a more robust measure of changes in attitude and behaviour. For example, the focus group format prevents the connection of individuals’ specific beliefs with their behavioural outcomes and/ intentions. Although some participants attended the focus groups of both studies, most of the participants were different. Therefore, some of the differences between the groups may be attributable to sampling differences. In addition, the sample included both users and users and non-users of NPS and participants’ intentions were not measured. Therefore, the extent to which inferences can be made about the likely outcome of any apparent changes in young people’s perceptions remains limited and may not be generalisable to specific populations of young people.

## Conclusion

Although the impact of the changing legal status of NPS is clearly apparent in young people’s beliefs and opinions about NPS, it is not clear if knowledge of the Act has directly influenced their cognitions or whether any apparent shifts in their beliefs reflect indirect influences such as perceptions of changing user populations. Certainly, there is a good case to support the proposition that young people’s beliefs about NPS are heavily shaped by their perceptions of users, as observed both first-hand and via the media. In the absence of the formal regulation of NPS, young people appear to rely on these social cues and perceptions of user and non-user identities to provide important information about drug quality, risk perceptions and the acceptability of NPS use. This ‘social pathway’ for influences on behaviour is well described by the prototype willingness model which may therefore provide a useful resource for intervention design.

In so far as young people’s perceptions of NPS users appear to have been strongly influenced by increased problematic use of NPS by disadvantaged groups, and this increase is linked with the changes in legislation, there are significant inequalities issues around NPS that interventions will need to pay careful attention to. In particular, interventionists will need to consider how they engage with processes of stigmatisation, as well as the potential for differential effects in populations with differing socio-economic circumstances

1. **Study 3: Identifying intervention targets and intervention components to reduce NPS use by young people**
   1. **Introduction**

This chapter reports the method and findings of Study3. The purpose of this study was to build on the findings of the two earlier studies by further clarifying the relationships between the motivations identified in the earlier studies, as well as situating the research within the context of interventions that are acceptable to the target population.

Study 1 and Study 2 reported on young people’s motives for NPS use and non-use. However, the assumed importance of each motive was based on the extent to which participants emphasised each motivational domain within their discussions. As interventionists, the value of understanding young people’s motives is the opportunities they offer as targets for intervention. However, motivations are not static variables, but interactive elements of motivational systems which balance various needs and goals (Grouzet, Kasser, Ahuvia, et al., 2005; Schwartz, 1996). Therefore, to better understand the influence of the various motivations we need to know how they relate to each other, that is, which motives are congruent, which are in opposition, and which are orthogonal to each other. (Grouzet et al., 2005; Maio, Pakizeh, Cheung, et al., 2009; Schwartz, 1992). In developing an understanding of the synergies and conflicts between motivations, and the priority placed on different motives, interventions can aim to shift the balance of the motivational system in favour of positive health outcomes (e.g. a reduction in NPS use). In addition, by identifying conflicts within motivational systems, important barriers to change can be highlighted which can then be addressed.

However, a successful intervention requires more than finding the best target, it also needs to be acceptable to the target population. Acceptability is a key factor in the uptake of interventions (Bak, van Dam, & Janssens, 2018; Diepeveen, Ling, Suhrcke, Roland, & Marteau, 2013) and effective interventions will be compromised by poor implementation and adoption if acceptability is low (Proctor, Silmere, Raghavan, et al., 2011; Stok, de Ridder, de Vet, et al., 2016). It is important that interventions are seen as appropriate, fair and consistent with people’s beliefs about how they should be treated (Milosevic, Levy, Alcolado, & Radomsky, 2015; Sekhon, Cartwright & Francis, 2017). While key guidelines for drug prevention and behaviour change interventions emphasise the importance of considering the acceptability of interventions, the lack of attention given to acceptability has been highlighted in recent reviews of drug interventions (Bautista, James, & Amaro, 2019; NICE 2017). This study, therefore, sets out to identify suitable motivational targets for NPS interventions, as well as suitable and acceptable approaches for targeting them.

* + 1. **Research aims and objectives:**

With a target population of young people aged 15 to 25,the specific aims of this study were to explore the conflicts between motives underlying the use and non-use of NPS and identify which motivations are most important for influencing NPS use and non-use. In addition, the study aimed to establish which approaches would be considered acceptable to young people, and what they felt would not work. The findings were considered in the light of their implications for intervention development. Consequently, the objectives of the study were to:

1. Explore the conflicts between different motivations
   1. Identify internal barriers to behaviour change
   2. Identify internal facilitators of behaviour change
2. Explore priorities of different motivations
   1. Identify which motivations are most important for use of NPS
   2. Identify which motivations are most important for non-use of NPS
3. Explore the acceptability of intervention approaches
   1. Identify what is acceptable to young people
   2. Identify what is unacceptable to young people
   3. **Method**

The study used a focus group methodology, collecting data from a diverse sample of young people in collaboration with community groups in Sheffield, Leeds and Doncaster. The focus groups were undertaken around two and a half years (29 to 32 months) after the introduction of the PS Act. The qualitative data collected was analysed using framework analysis techniques as described in more detail in Chapter 4, Section 4.9. Ethical approval was granted by the Department of Psychology Research Ethics Committee at the University of Sheffield.

* + 1. **Participants and procedure**

The focus groups were conducted between October 2018 and January 2019. Thirty-one participants were recruited from three community groups based in Yorkshire: Sheffield Young Advisors (SYA), Young Healthwatch Leeds (YHL) and Doncaster Housing for Young People (DHY). A more in-depth description of the community groups, their role in the research and the focus group methodology is provided in Chapter 4 Section 4.6.1. Participants were recruited working closely with community group facilitators, to ensure appropriate health and safety procedures were followed and young people were not inadvertently coerced into taking part. Participants aged 15 to 24 were recruited in collaboration with community group facilitators and asked if they (and the community group manager if they were under 16) would consent to take part. After deciding to take part, participants filled in the consent form and a background information questionnaire and were provided with a participant information sheet (see Appendices B, C and D for Studies 1, 2 and 3 respectively). Participants were then asked a series of semi-structured questions with prompts. Group discussions took about 40 to 60 minutes and were recorded using a digital voice recorder.

* + - 1. **Definitions**

Throughout the focus group sessions NPS were referred to by their colloquial term 'legal highs' which was defined as:

'the common name for Novel Psychoactive Substances. These are chemical substances that until recently were sold legally. They produce the same, or similar effects, to traditional illegal drugs such as cannabis, cocaine, ecstasy and heroin. They are psychoactive which means they have mood-altering properties and can act as stimulants, sedatives, hallucinogens and psychedelics. Since May 2016 they have been banned, which means it is now illegal to sell them, but apart from a few exceptions it is not illegal to possess them for personal use.'

Performance of the target behaviour was defined as 'taking legal highs' while non-performance was defined as 'not taking legal highs'.

* + 1. **Measures**

The background questionnaire collected socio-demographic information and information about participants use of NPS both before and after the introduction of the PS Act in addition to their use of traditional illicit drugs. The questionnaire also asked about their friends’ use of NPS and illicit drugs, including whether or not they believed their friends had used NPS before and after the ban.

* + - 1. **Focus group questions**

The focus group session involved a series of open-ended questions with prompts to elicit participants’ beliefs about young people’s motivational conflicts and priorities in relation to NPS use and non-use. Additional questions were used to probe participants’ opinions about what they think would make a good intervention addressing young people’s use of NPS (See Table 8-1).

**Table 8-1. Focus group questions for motivational targets and intervention acceptability**

|  |  |
| --- | --- |
| **Theme**  Questions and prompt | |
| **Conflict** | |
| 1. What motivates young people to take Legal Highs? | |
|  | What are the reasons they do it? |
| 1. What motivates young people not to take Legal Highs? | |
|  | What are the reasons they don’t do it? |
| 1. Do you think there might be conflict between any of these motivations? | |
|  | Do they feel conflicted in what they want? |
| **Priority** | |
| 1. What do you think is most important to young people taking Legal Highs? | |
|  | What motivations are most important to them? |
| 1. What do you think is most important to young people who don’t take Legal Highs? | |
|  | What motivations are most important to them? |
| **Acceptability** | |
| 1. What do you think is the best way to help support young people to not take legal highs? | |
|  | What do you think is a good idea? Why?  What would be the best way to do that?  Are there any other ways you can think of? |
| 1. What do you think would not work? | |
|  | What is a bad idea? Why? |

* 1. **Results** 
     1. **Sample characteristics**

The demographic information for the 31 young people who participated in the focus groups is shown in Table 8-2. The participants were mostly female, with the greatest proportion employed or studying. Although the majority of participants were of white British ethnicity, the sample included participants from diverse ethnic backgrounds.

**Table 8-2. Study 3 sample characteristics**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Focus group** | | |  | |  | |  | |
| **Characteristic** | 1 | | 2 | | 3 | | All | | % |
| **Participants** |  | |  | |  | |  | |  |
| Number | 8 | | 8 | | 15 | | 31 | | - |
| **Gender identification** |  | |  | |  | |  | |  |
| Male | 4 | | 3 | | 6 | | 13 | | 42 % |
| Female | 4 | | 5 | | 9 | | 18 | | 58 % |
| **Age (years)** |  | |  | |  | |  | |  |
| Youngest | 17 | | 17 | | 15 | | 15 | | - |
| Oldest | 23 | | 24 | | 24 | | 24 | | - |
| Median | 21 | | 20.5 | | 17 | | 18.5 | | - |
| **Occupation** |  | |  | |  | |  | |  |
| Student | 0 | | 2 | | 10 | | 12 | | 39 % |
| Employed | 4 | | 6 | | 3 | | 13 | | 42 % |
| Unemployed | 4 | | 0 | | 2 | | 6 | | 13 % |
| Other / training | 0 | | 0 | | 1 | | 1 | | 3 % |
| **Ethnicity** |  | |  | |  | |  | |  |
| White British | 8 | | 5 | | 9 | | 17 | | 55 % |
| Black /Black British | 0 | | 2 | | 1 | | 4 | | 13 % |
| Asian /Asian British | 0 | | 1 | | 5 | | 6 | | 19 % |
| Other | 0 | | 0 | | 0 | | 0 | | 0 % |
|  |  |  | |  | |  | |  | |

* + 1. **Previous use of NPS**

In total three participants reported use of NPS (10%), two used them before the ban, and one after (see Table 8-3). This proportion is in line with estimates for young people in the UK which vary between about 2 – 10% (see Chapter 2). While the two participants who took NPS prior to the ban had also used illicit drugs, the participant who used NPS after the ban had not. Most participants had friends who had used NPS prior to the ban (39%), and they did not perceive a change in their friends’ use as a result of the ban (see Table 8-4). However, there seemed to be some uncertainty about the legal status of psychoactive substances for both their own and their friends' use.

* + 1. **Previous use of illicit drugs**

Of the sample, 29% of participants reported use of illicit drugs (see Table 8-3), this is a lower rate than general population estimates for young people in the UK which is estimated to about 35% (CSEW, 2017). However, 17% of participants were not sure if they had or declined to say. Regarding perceptions of their friends’ use of traditional illicit drugs (see Table 8-4), 65% of participants thought their friends had experience of drug use, with a further 16% not sure or not wanting to say.

**Table 8-3. Participants’ use of NPS and illicit drugs**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Focus group** | | |  | |  | |  | |  |
| **Question** | 1 | | 2 | | 3 | | All | | % |  |
|  |  | |  | |  | |  | |  |  |
| **Pre-ban NPS use** |  | |  | |  | |  | |  |  |
| Yes | 1 | | 0 | | 1 | | 2 | | 7 % |  |
| No | 5 | | 8 | | 11 | | 24 | | 77 % |  |
| Not sure | 2 | | 1 | | 2 | | 5 | | 16 % |  |
| Prefer not to say | 0 | | 0 | | 1 | | 1 | | 3 % |  |
| **Post-ban NPS use** |  | |  | |  | |  | |  |  |
| Yes | 0 | | 1 | | 0 | | 1 | | 3 % |  |
| No | 6 | | 7 | | 11 | | 23 | | 74 % |  |
| Not sure | 2 | | 0 | | 2 | | 4 | | 13 % |  |
| Prefer not to say | 1 | | 0 | | 2 | | 3 | | 10 % |  |
| **Illicit drug use** |  | |  | |  | |  | |  |  |
| Yes | 5 | | 3 | | 1 | | 9 | | 29 % |  |
| No | 1 | | 5 | | 11 | | 17 | | 55 % |  |
| Not sure | 2 | | 0 | | 1 | | 3 | | 10 % |  |
| Prefer not to say | 0 | | 0 | | 2 | | 2 | | 7 % |  |
|  |  |  | |  | |  | |  | |  |

**Table 8-4. Use of NPS and illicit drugs by participants’ friends**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Focus group** | |  | |  | |  | |
| **Question** | 1 | 2 | | 3 | | All | | % |
| **Friends’ pre-ban NPS use** |  |  | |  | |  | |  |
| Yes | 2 | 4 | | 6 | | 12 | | 39 % |
| No | 4 | 3 | | 6 | | 13 | | 42 % |
| Not Sure | 2 | 0 | | 3 | | 5 | | 16 % |
| Prefer not to say | 0 | 1 | | 0 | | 1 | | 2 % |
| **Friends’ post-ban NPS use** |  |  | |  | |  | |  |
| Yes | 2 | 3 | | 7 | | 12 | | 39 % |
| No | 4 | 3 | | 5 | | 12 | | 39 % |
| Not Sure | 2 | 1 | | 3 | | 6 | | 19 % |
| Prefer not to say | 0 | 1 | | 0 | | 1 | | 7 % |
| **Friends’ illicit drug use** |  |  | |  | |  | |  |
| Yes | 4 | 6 | | 10 | | 20 | | 65 % |
| No | 2 | 1 | | 3 | | 6 | | 19 % |
| Not Sure | 2 | 0 | | 2 | | 4 | | 13 % |
| Prefer not to say | 0 | 1 | | 0 | | 1 | | 3 % |

* + 1. **Substances**

During their discussions, participants generally referred to NPS as ‘legal highs’ in line with the wording used in the questions. However, as in the previous studies, there were several spontaneous references to specific named substances. These included spice, which was referred to 40 times, nitrous oxide (NOS) which was referred to 11 times, and bath salts (synthetic cathinones) which were mentioned once.

* + 1. **Participants’ knowledge of NPS and the PS Act**

Most of the young people taking part in the study had heard of legal highs. However, not all participants were aware of the PS Act, although the majority reported that they had heard about the ban prior to attending the focus group session (see Table 8-5).

**Table 8-5. Participants’ awareness of the PS Act**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Focus group** | |  |  |  |
| **Question** | 1 | 2 | 3 | All | % |
|  |  |  |  |  |  |
| **Heard of legal highs** |  |  |  |  |  |
| Yes | 7 | 8 | 12 | 27 | 87 % |
| No | 0 | 0 | 2 | 2 | 7 % |
| Not sure | 1 | 0 | 1 | 2 | 7 % |
| **Heard of ban** |  |  |  |  |  |
| Yes | 6 | 7 | 6 | 19 | 61 % |
| No | 2 | 0 | 5 | 7 | 23 % |
| Not sure | 0 | 1 | 4 | 5 | 16 % |
|  |  |  |  |  |  |

* + 1. **Data analysis**

The transcripts were coded using framework analysis as described in section 4.8 in Chapter 4. To aid familiarisation with the data it was initially compared against the coding categories used in Studies 1 and 2 (see Appendix D). The coding scheme created during the framework analysis comprised the following motivation themes: most important for use of NPS; most important for non-use of NPS; and conflicts between motives. In addition, the intervention acceptability themes were as follows; content; method; setting; and advised against. Once the framework analysis chart was established a second coder read samples of each of the focus (group transcripts and assessed the content of the coding categories. Initial correspondence was 86% and the discrepancies in coding were then discussed until agreement was reached.

* 1. **Motivation Results**

The findings of the framework analysis are presented in the following sections. Firstly, the findings in relation to motivation priority and conflict are presented in Tables 8-6, 8-7 and 8-8, then the data for each relevant motivational domain is described. Data for the motives considered most important to young people who use NPS are presented in Table 8-6. Data for the motives that participants considered to be most important to young people who do not use NPS are presented in Table 8-7. The findings for important motivational conflicts are shown in Table 8-8.

**Table 8-6. Motives considered most important to young people who use NPS**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Rank** | **Theme** | | **FG** | | **Number of**  **references** | |
|  |  |  | |  | | |
| **1.** | Social influences | 3 | | 9 | |  | |
| **1.** | Coping | 3 | | 9 | |  | |
| **3.** | Pleasant drug effects | 3 | | 8 | |  | |
| **3.** | Ease of access | 2 | | 8 | |  | |
| **5.** | Curiosity | 1 | | 5 | |  | |
| **6.** | Identity | 1 | | 2 | |  | |
| **7.** | Safety | 1 | | 2 | |  | |
|  |  |  | |  | | |

**Table 8-7. Motives considered most important to young people who do not to use NPS**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Rank** | **Theme** | **FG** | | | **Number of**  **references** | |
|  |  | |  |  | | | |
| **1.** | Health / harms | | 2 | 6 | |  | |
| **2.** | Identity / negative user | | 2 | 4 | |  | |
| **3.** | Pleasure / unpleasant | | 3 | 4 | |  | |
| **4.** | Accessibility / cost | | 1 | 1 | |  | |
|  |  | |  |  | | | |

**Table 8-8. Conflicts between motives**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Motivation / reason** | **Conflict**  **with** | | **Motivation / reason** | **Number of**  **references** | | |
|  | |  |  | |  |  |
| Risk perception | | ⭤ | Social influences | | 6 |  |
| Risk perception | | ⭤ | Curiosity | | 4 |  |
| Risk perception | | ⭤ | Pleasurable drug effects | | 3 |  |
| Risk perception | | ⭤ | Coping | | 3 |  |
| Negative identity | | ⭤ | Positive identity | | 1 |  |
| Accessibility | | ⭤ | Drug effects | | 1 |  |
|  | |  |  | |  |  |

* + 1. **Motivational priority and conflict**
       1. **Social motives**

Social motives were seen by participants as the most important motives supporting use of NPS. Participants noted the importance of the pressure to conform and felt it was most influential during important transitions such as leaving school or starting University.  Social influences were thought to be especially strong due to the amount of time young people spend with their peers.  Social motives were thought to present the strongest conflict with health motives. The prioritisation of social influences was presented as either the result of young people not thinking about risk when in social contexts or active conflicting with health motives through peer pressure. Social influences were presented as difficult to overcome, requiring the support of others to provide young people the confidence to behave differently to their peers.

* + 1. **Health**

Health motives were seen as related to fear of the unknown and danger of death or injury. They were largely associated with the discouragement of the use of NPS and young people felt they would only be prioritised when health threats were perceived as severe.

* + 1. **Coping**

Coping motives were presented very important young people. Young people were identified as being at risk of mental health issues and participants described the pressures of academic success and exams as a reason for use. NPS were seen as a way for people to forget their troubles. The need for escapism was presented as a strong influence that would be difficult to overcome. Participants also noted the influence of addiction and the use of NPS to cope with difficult lives on the street, to forget worries and discomfort.

* + 1. **Curiosity**

Curiosity was linked to identity exploration and legal status. Curiosity was viewed as a fairly important motivation which was presented as largely opportunistic, with people using NPS when they encountered them rather than deliberately seeking them out. There was a clear link with pleasure as participants felt that if an NPS was perceived as unpleasant there would be no reason to be curious. Although curiosity was seen as conflicting with health motives, the conflict was not presented as a difficult conflict since substances that were believed to be harmful would also lose their appeal.

* + 1. **Pleasure**

Pleasure motives were also seen as very important to young people and of high priority.  Pleasure was largely seen as conflicting with health motives through a lack of risk awareness and a tendency for young people not to think about health when they are distracted and having fun. Therefore, pleasure motives were not presented as especially problematic since perceptions of risk were thought to be linked with perceptions of unpleasant experiences.

* + 1. **Accessibility**

Accessibility was referred to quite frequently within participants’ discussions with NPS described as both easy to get and cheap. However, young people in the focus groups did not present effort or financial motives as important drivers for use of NPS, but for either facilitating or constraining use. Accessibility was not commonly presented as being in conflict with other motives.

* + 1. **Identity**

Identity motives were not seen as especially important or high priority, but participants did note that identity might be very relevant to young people as youth is a time of exploration.  User identities were linked with different drug types with a distinction made between the type of people who use spice and the type of people who use bath salts. Spice was associated with homeless users described as zombies, while bath salts were seen as party drugs more relevant to young people. The spice user type was related to both the reputation of spice users presented in the media and through first-hand observation.

## Intervention acceptability results

The results for intervention acceptability (and non-acceptability) are presented in Table 8-9 below, then discussed in relation to intervention content, intervention setting and intervention method in the following sub-sections. A final sub-section discusses the findings for unacceptable intervention types.

**Table 8-9. Acceptable intervention content, setting and method**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Theme** |  | **Statements/beliefs** | **FGs** | **Refs** |
| **N** | | |  |  |
| **Content** | **67** | Bad chemicals | 3 | 27 |
|  |  | Risk information | 3 | 15 |
|  |  | Harm-reduction information | 2 | 9 |
|  |  | Legal status | 3 | 8 |
|  |  | Drug effects | 1 | 4 |
|  |  | Identity | 1 | 3 |
|  | | |  |  |
|  | | |  |  |
| **Setting** | **33** | Social media / documentaries | 3 | 20 |
|  |  | School | 2 | 6 |
|  |  | Nightlife venues | 2 | 5 |
|  | | |  |  |
|  | | |  |  |
| **Method** | **30** | Drug testing and safe spaces | 3 | 8 |
|  |  | Peer-based | 2 | 5 |
|  |  | Interactive methods | 2 | 5 |
|  |  | Informed choice | 2 | 5 |
|  | | |  |  |

* + 1. **Intervention Content**
       1. **Bad and unknown ingredients**

NPS were frequently associated with bad and unknown ingredients. participants referred to inconsistent potency, use of mixtures and unknown ingredients of unknown effects. However, the young people in the focus group predominantly focused on the use of harmful chemicals in the production of NPS and the unscrupulous practices of black-market producers and sellers.  Participants expressed a cynical attitude towards producers with negative perceptions of the types of chemicals use to adulterate NPS. Producers were described as ‘bashing’ and ‘corrupting’. Several participants talked about the use of bleach, battery acid, poison and nasty chemicals. In contrast with the negative perceptions of ‘chemicals’, natural substances were talked about positively, but sellers were described as bashing and corrupting natural substances with dirty impurities. Although participants were concerned about potency, they seemed more concerned about the use of adulterants. Potency was also related to purity which appeared to have more positive associations.

* + - 1. **Risk information**

Risk information focused on deaths and harm, harms caused by drugs or injury. Information about harms suitable for intervention was linked to individual substances and participants talked about the importance of informed choice.  Injury was associated with street uses of NPS and participants thought that imagery of injured people lying on the streets would be off-putting. Young people taking part in focus groups felt that risk information would need to emphasise the severity of the risks to have impact.

* + - 1. **Harm reduction**

Participants emphasised the importance of harm reduction information for informed decision-making and responsible drug use. They stressed the importance of non-judgemental environments and safe spaces where people could be supported and get help. Although the groups were generally supportive of harm reduction approaches, they expressed concern that the stigma associated with drug use might prevent people from being honest about what they and all their friends have taken if it is illegal.

* + - 1. **Legal status**

Participants thought that it would be beneficial to improve people's awareness around the legal status of NPS as the situation was thought to be confusing. They felt that many people think it's a grey area and young people might be unaware of the strength of spice because of its reputation as a once legal drug. The use of the term ‘legal highs’ was thought to be especially confusing.

* + - 1. **Drug effects**

Some participants felt that realistic information about the effects of different drugs would be beneficial to users.  It was thought that information about drug effects should focus on personal tolerances and individual variability in reactions to drugs.

* + 1. **Intervention Setting**
       1. **Online and social media**

Online settings such as social media platforms were strongly endorsed by young people.  Participants felt that online settings were appropriate for use with interventions as they are private, safe, non-stigmatizing and allow people see things in their own time. Young people in the focus group also commented on the high use of social media platforms such as Snapchat and Instagram for drug dealing and felt that it would be beneficial to counteract influencers in the same setting.

* + - 1. **Schools**

Participants emphasised the need for education in schools but also expressed concerns about its effectiveness.  They felt that young people have become numb to lectures in schools and are very likely to disengage or react against authority by doing what they are told not to do.

* + 1. **Intervention method**
       1. **Documentaries and videos**

Participants strongly emphasised the suitability of videos and documentaries as a form of intervention with young people.  Documentaries were seen as an appropriate way to talk about ingredients and unscrupulous production methods.  It was thought that powerful imagery focusing on dangerous chemicals such as bleach and acid would be of high impact and informative.

* + - 1. **Peer-led**

Participants felt that interventions presented by peers and role models would be the most effective. The use of peers was contrasted with interventions presented by older adults which were not thought to be acceptable, as older people are perceived as being too judgemental.

* + - 1. **Interactive**

Participants thought about the use of interactive methods would be very beneficial for interventions.  For participants in the focus groups, interactivity was framed as the opportunity to have conversations and ask questions.

* + - 1. **Informed choice**

Giving young people an informed choice was seen as important and respectful. Informed choice was linked with drug effects and risks of use.

* + - 1. **Drug testing and safe spaces**

Several participants talked about drug testing services at festivals. They felt this approach was acceptable and believed it to be high impact. It was thought to encourage responsible drug use and participants emphasised the importance of trust and normalising the use of services. Safe spaces were viewed as an important part of harm reduction approaches. Participants stressed the need for trust and support having a non-judgmental atmosphere.

* + 1. **Advised against** 
       1. **Standalone health risk information**

Participants advised against the use the stand-alone health risk information as they felt that young people would be unlikely to engage with an intervention that was not interactive.

* + - 1. **Authoritative approaches**

Interventions that use an authoritarian approach were advised against, due to the risk of young people taking NPS as a reaction against authority

* + 1. **Principal findings**

Participants in this study believed that social influences were the most important motives for young people contemplating use of NPS, due to the highly social context of young people's lives and the importance of conforming with peers. Social motives were characterised as encouraging NPS use and were seen as the most problematic when in conflict with health motives. This was largely linked with lack of attention given to health concerns in social contexts but also with deliberate prioritisation of social motivations at important transition times. Young people were thought to be most vulnerable to social pressures to use NPS at times when membership of new peer groups was an important goal (e.g. leaving school or starting university).

Health motives were seen as the most important for discouraging use of NPS and associated with perceptions of risk and fear of death and injury. Health motives were only considered to be a priority for young people if the threat was believed to be sufficiently severe.

Coping was also seen as an important motive encouraging NPS use, which was particularly associated with achievement pressures at school, and although coping motives were expected to override health motives, this conflict was not strongly emphasised by participants. Pleasure motives were considered to be important reasons for use that might conflict with health motives, and while this conflict was salient in young people's conversations it was perceived as less problematic. This was reasoned to be because an NPS perceived as harmful was also expected to be perceived as unpleasant. Curiosity was also thought to be an important motive for use that might conflict with health motives, but this conflict was only described as relevant if the health threat was perceived to be low.  While ease of access was thought to be important it was not presented as a cause of problematic conflict. Identity motives were salient in young people's conversations as a reason for not using NPS, but young people placed little priority on identity motives.

With regard to the content of interventions, young people mainly highlighted the unknown and bad ingredients of NPS and felt they would be the most suitable focus for intervention. Participants were mostly concerned with the unscrupulous production methods and adulteration of substances with dangerous chemicals. Health risk information, harm reduction information and information on drug effects were also thought to be appropriate for the focus of intervention and were largely presented as relevant for supporting people to make informed choices. Participants also emphasised the suitability of interventions focusing on the legal status of substances as they thought the situation around the legal status of NPS was confusing largely due to use of the term ‘legal highs’.

The young people who took part in this study strongly endorsed the use of informative videos and documentaries focusing on the unscrupulous methods of production and harmful adulterants in NPS. They also emphasised the importance of peer-led interventions, interactive methods and a non-judgemental approach that respected young people's right to make an informed choice.  Participants also recommended the use of safe spaces and drug-testing services in entertainment settings.

The young people taking part strongly endorsed the use of online settings, particularly social media platforms as they were perceived as safe, interactive and non-stigmatising. School settings were also endorsed, although as a group, the young people were ambivalent about school-based interventions and they were also seen as problematic due to a lack of engagement and the risk of iatrogenic effects. Participants also advised against the use of standalone information and authoritative approaches for similar reasons, i.e. the probability of disengagement and reactions against authority.

* 1. **Discussion**

The findings of this study were broadly consistent with the findings of Study 2, in that both studies highlighted the particular importance of social influences and coping motives for encouraging the use of NPS, and the importance of risk perceptions and negative perceptions of user identities for discouraging use. This provides evidence that the findings across the studies are reliable, that is, the salience of themes within young people’s discussions reflect their importance to young people.

In addition, this study builds on the findings of Studies 1 and 2, by focusing on the relationships between the motivational domains. In particular while young people conceived of several motives as potentially conflicting with the health motives that might discourage use, the type of conflict varied as some conflicts were perceived to be more problematic than others. Specifically, the conflicts between health motives and social motives, and health motives and coping motives were presented as problematic. In contrast, the conflicts between health motives and pleasure motives were not considered to be as challenging. The reason for this appears to be related to the type of goal conflict involved as social motives and coping motives in this context were described as avoidance goals, while pleasure motives and curiosity motives were presented as approach goals. Avoidance goals and approach goals are different types of goals and are thought to involve different psychological processes (Carver & Scheier, 1998). Approach goals are desired outcomes that people want to achieve, whereas avoidance goals are undesired outcomes that people want to prevent (Elliot & Thrash 2002). The type of goal being pursued affects prioritisation but when they differ people tend to prioritise loss-focused goals compared to gain-focused goals (Schmidt & DeShon, 2007). Therefore, health motives (avoidance goals) may have a greater inhibitory effect on pleasure motives (approach goals) than social or coping motives (also avoidance goals).

These two forms of motivational conflict described by participants can be differentiated by the type of risk they represent as, for the motives stimulated by avoidance goals (social rejection and stress), the risks are tangible risks that may deplete a person’s social and affective resources. However, for the approach goals (pleasure and experience) the risks are opportunity costs which do not threaten to deplete a person’s self-resources in the same way.

Participants described social motives as overriding health motives when young people were concerned about failing to conform and losing out on membership of a valued group. For coping motives, young people were described as wanting to avoid negative states of stress, which was thought to motivate people to prioritise the need to forget about their worries, over and above, their health concerns. When conflicting goals are the same type (approach – approach or avoid – avoid) people tend to prioritise the goal with the greatest need (Schmidt & DeShon, 2007). They also tend to prioritise goals where the outcome seems more certain (Ballard et al., 2016a) and more immediate (Northcraft et al., 2011). If social rejection or feeling stress seems more certain and immediate than health risks associated with NPS, (which are often characterised by uncertainty) then the social and coping motives are likely to dominate.

When health motives and pleasure motives are in conflict, however, the desire to avoid harm may be prioritised more easily over pleasurable approach goals than it would be with other avoidance goals. In other words, although there is conflict, it is more easily resolved. In addition, health concerns were seen as less incongruent with hedonistic desires, as young people thought that NPS perceived to be dangerous would also be expected to be unpleasant. However, the implication is that at a low level of perceived risk, the influence of health might not be enough to override pleasure motives. Health motives and pleasure motives might only be congruent in relation to acute risks, as chronic harms that are cumulative and not seen as immediate and may not be associated with short term unpleasant experiences. When harms are not seen as immediate, the closer temporal proximity of the pleasurable approach goal may take priority. Curiosity motives were also perceived as being congruent with health motives, via the influence of pleasure, as young people’s curiosity was thought to be driven by a desire for pleasure. Consequently, when an NPS was thought to be associated with health risks, it was expected that young people would no longer believe taking it would lead to a pleasurable experience and therefore curiosity would fade.

In terms of overcoming the barriers caused by the more problematic conflicts, for social risks participants emphasised the need for support and trust, so that they felt more confident that failing to conform would not lead to rejection by their peers. In relation to coping motives, participants did not highlight any particular strategies but noted that the root causes underpinning the need to cope might be hard to tackle.

Turning to the acceptability of potential interventions to reduce NPS use, young people taking part had clear ideas about what would and would not be acceptable as an NPS intervention with young people. Considering intervention content, there was a clear consensus that a focus on unscrupulous production methods and harmful ingredients would be most appropriate. This content was clearly linked with the use of videos and documentaries and an online setting. One of the advantages of a focus on production and ingredients was that it appeared to sidestep young people’s concerns about approaches that were overly authoritative as this sort of information was not associated with judgement or being told what to do.

A closer examination of participants’ perceptions around ingredients shows that their concerns were predominately oriented towards the adulteration of NPS rather than the variable potency of substances. For young people potency was discussed in terms of purity, and the concept of purity appeared to have both positive and negative connotations, whereas adulteration was presented as uniformly negative. Adulteration appeared to be associated with maliciousness and a lack of care that framed producers and sellers as greedy and exploitative. Participants seemed to view the ‘chemical’ nature of adulterants negatively, which were contrasted with natural products which seemed to be associated with positive connotations. One participant even described natural substances being ‘corrupted’ with chemicals while in contrast other participants associated cannabis with nature, trees and saving people from cancer.

In addition to a focus on health risks and harmful ingredients, participants also suggested that interventions could focus on clarifying the legal status of NPS which was thought to be confusing. The use of the term ‘legal highs’ was presented as particularly misleading.

Participants felt that interventions needed to be interactive, which they perceived as the ability to talk, have conversations and ask questions. Consequently, interaction was closely linked to safety, and the need for a non-judgemental environment. Evidence from several reviews on the efficacy of drug prevention interventions shows positive outcomes for interactive approaches (Ainsworth et al., 2016; Brotherhood, Atkinson, Bates & Sumnall, 2013; EMCDDA, 2011; James, 2011; Novakovic, UNODC, 2018). Evidence also supports the use of non-judgemental approaches which have been shown to have beneficial effects (Ainsworth et al., 2016; James, 2011; Novakovic, UNODC, 2018). Furthermore, both interactive and non-judgemental approaches are endorsed by key drug intervention prevention guidelines (EMCDDA, 2011; Mentor-ADEPIS, 2014; NICE, 2017).

For young people in the focus groups, these attributes (i.e. interaction, safety and lack of judgement) appeared to be associated with social media and online platforms which were seen as private, engaging and non-stigmatising. Although web-based approaches show evidence of inconsistent effects (Novakovic, Rutter, Ainsworth, et al., 2016), web-based inventions are gaining popularity and are endorsed in key drug prevention guidelines (EMCDDA, 2011; NICE, 2017).

Young people’s comfort with online settings was largely contrasted with school settings, which were seen as important places where interventions should take place, but also problematic due to the lack of engagement and more judgmental environment. Lack of engagement was linked with the use of standalone health information which participants thought young people would filter out and dismiss due to the volume of instructions they receive from adults and teachers. Participants’ lack of endorsement of standalone informational approaches is in line with both the evidence and recommendations of drug prevention guidelines that do not support the use of these approaches (ACMD, 2011; EMCDDA, 2011; Mentor-ADEPIS, 2014; NICE, 2017).

In place of approaches led by teachers, participants endorsed the use of peer-led approaches in which the most important attribute was thought to be a good match in age between provider and recipient. While participants noted that it was important for people to be able to identify with the provider, the greater issue was thought to a lack of trust toward older adults who are seen as judgemental. Peer-led intentions are also supported by good evidence for their effectiveness and are recommended in key guidelines approaches (ACMD, 2011; EMCDDA, 2011; Mentor-ADEPIS, 2014; NICE, 2017).

In addition to information-based approaches, there was also a cluster of approaches endorsed by young people that centred on safe spaces in entertainment settings, drug-testing services and harm-reduction information. These interventions were seen as supportive and respectful by caring for young people by providing help and information. However, there were concerns about whether young people would feel safe talking about their own or their friends’ consumption of illegal substances. Evidence for the effectiveness of interventions in night-life settings is mixed but some programs are associated with positive outcomes while drug-testing services show evidence of positive harm-reduction outcomes and are specifically recommended for use with NPS interventions (Pirona et al., 2016).

* + 1. **Implications**

The intervention approaches recommended by young people in the focus groups showed strong alignment with both the evidence base and the recommendations of key drug intervention prevention guidelines. This indicates that there are a variety of acceptable approaches that have the potential to be effective where young people and researchers can find common ground.

* + 1. **Strengths and limitations**

The study has some strengths to report. Working in a community setting was a good way to reach a variety of young people from a range of backgrounds. Therefore, the approaches they endorsed may have wide appeal for a range of young people. By talking to young people at the outset of intervention design and using an open-ended approach, young people’s responses were not constrained. The ideas they generated, therefore, represent a good indication of what is acceptable or unacceptable to this population.

The study has a number of limitations to take into consideration. First, as a group the participants had low rates of NPS use (in total 10% had used an NPS either before or after the ban) and therefore the findings may not be applicable to typical users of NPS. However, the prevalence of illicit drug use was greater than their use of NPS (29%) and 65 % of the sample had friends that have taken drugs so they are likely to be able to empathise with young people contemplating use of NPS.

Second, the study used a semi-structured approach for the focus group sessions, but the questions used were broad in scope with the intention that this would stimulate young people's creativity. It is possible a more structured approach to the session might have better suited the research questions to maintain more focus and encourage greater depth in relation to the key areas of interest.

Third, unlike Studies 1 and 2, the focus group questions were not developed in consultation with the young people's advisory group and as a result, participants had some difficulty understanding some of the questions. However, based on feedback from the first focus group the questions were adjusted to make them more straightforward for the second and third groups. As the study was not designed to compare responses between the groups the difference in questions unlikely to compromise the findings.

Fourth, the study used self-report measures to collect information about participants’ use of psychoactive substances and therefore the findings may be biased by self-presentation concerns. As with Studies 1 and 2, the impact of self-presentation concerns was limited by the use of self-administered anonymous questionnaires.

* 1. **Conclusions**

The findings suggest that young people would find informative documentary or video-based interventions focusing on unscrupulous production methods of NPS, harmful ingredients, health risks and/or harm-reduction information an acceptable form of intervention for addressing young people's use of NPS. Interventions addressing the confusing situation around the legal status of NPS may also well accepted. Online and social media-based interventions are strongly endorsed with online settings being perceived as safe, interactive and non-stigmatising. In addition, interventions such as drug-testing services and safe-spaces in entertainment settings are considered suitable and acceptable. The findings indicate that the best-received interventions would involve peers in delivery as well as being interactive, non-judgemental, and avoiding the use of standalone risk information or overly authoritative approaches.

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# Discussion

## Introduction

The main aim of this thesis was to inform the development of interventions that seek to address young people’s use of NPS. The current research set out to explore: the beliefs, motivations and reasons underlying young people’s NPS use and non- use; how they were impacted by the implementation of the Psychoactive Substances Act 2016; what approaches young people find acceptable; and which theories of health behaviour are most suitable for use in intervention development in relation to NPS use.

This chapter first presents a summary of the principal findings in relation to the research questions then discusses in more detail the issues relevant to intervening with young people’s NPS behaviour. It then looks at the impact of the PS Act, with a focus on the unintended negative consequences and what needs to be addressed in future interventions as a consequence. Next it discusses the need to take account of wider factors and considers the value of a systems approach. This is followed by an example intervention that incorporates suggested approaches before consideration of the strengths and limitations of the research project. Finally, the chapter presents its conclusions and recommendations for future work.

## Principal findings

### Why do young people use or not use NPS?

Qualitive analysis of young people’s semi-structured discussions identified ten motivational domains that appeared to shape their behavioural decisions around NPS use: health protection motives; coping-based motives; the desire for friends’ approval; the desire to conserve money; the desire to conserve effort; the desire to avoid parents’ disapproval; the desire to protect and enhance identity; the desire for autonomy; pleasure motives; and curiosity (see Study 1).

The ten motivational domains showed consistency across all three studies; however, notable differences were found in the emphasis placed on the various motives in relation to behavioural outcomes (i.e. taking or not taking NPS) as well as in relation to changes following introduction of the ban. While the use of NPS appeared to be most frequently associated with motives to cope, gain friends’ approval, protect health and to conserve money and effort, avoidance of NPS use was predominantly linked with health protection motivation and to a lesser extent, the desire to avoid a negative identity (see Study 1 ).

While interactions between these ten motivational domains provide a good framework for understanding the motives that direct and constrain young people’s NPS related behaviour, their motivation also appeared to interact in important ways with wider structural and environmental factors. In particular, these include the legal status and accessibility of NPS and traditional illicit drugs, as well as young people’s relationships with authority.

Analysis identified several NPS-specific beliefs linked with young people’s motives which largely centered on the nature of the health and punitive risks associated with use, and crucially, these risks relative to use of traditional illicit drugs (see Studies 1 and 2). The harmfulness of NPS was connected to beliefs about the unknown nature of their ingredients, potency and consistency resulting from a lack of regulation, while perceptions of safety were, to some extent, linked with their perceived legal status.

### How has implementation of the PS Act affected young people’s beliefs?

The emphasis placed on coping and social motives in explanations of NPS use was considerably greater following the ban, while the emphasis on avoiding parent’s disapproval, pleasure motives, and the appeal of a positive user identity were notably reduced (see Study 2). In relation to avoidance of NPS use, the salience of risk perceptions remained consistently high both before and after the ban, however, the frequency with which young people emphasised negative user identities was noticeably greater after the ban.

Prior to the ban, legal status was more frequently linked with beliefs about the lack of punitive consequences of use associated with NPS than the lack of health risks. Conversely, the ban was linked with perceptions of illegal status, which were associated with increased risks to health, and to a lesser extent, an increased likelihood of getting in trouble.

Despite the association of perceived illicit status with beliefs about risk, young people’s perceptions of the health risks of NPS use were relatively unaffected by the ban, and young people in the studies expressed the belief that many people remain unaware of the change in legal status, owing in part to continued use of the term ‘legal highs’. Following the ban, more significant changes in young people’s perceptions of NPS were observed in relation to perceptions of user types, which appeared to match the shifting media depictions of NPS users. A shift in NPS user populations away from more affluent recreational users toward more disadvantaged problem-drug users was apparent in young people’s perceptions and appeared to explain their greater emphasis on coping as a reason for use and the corresponding decrease in the emphasis they placed on pleasure motives.

### What approach to NPS intervention do young people think is acceptable?

Regarding young people’s perspectives on the suitability of NPS interventions, they recommended a focus on raising awareness of the health and legal implications of NPS use, with a particular focus on the dangerous chemicals used in NPS products and the dangerous, unregulated methods used for production. Young people recommended the use of videos and documentaries focusing on the dubious production methods of NPS traders. Barriers to intervention were identified as the importance of pleasure and social motives to young people and they cautioned against using standalone health information and authoritative approaches.

### Which theoretical frameworks are appropriate for use with NPS interventions?

Considering the suitability of different theories for use in intervention, the theory of planned behaviour offered a good fit with the range of motivations identified in the studies. More specifically, the importance of context-specific reasons for understanding NPS behaviour highlighted the suitability of behavioural reasoning theory, and the significance of perceived user types emphasised the suitability of prototype willingness theory. Also, the importance of young people’s autonomy pointed to the value of including a self-efficacy element such as that outlined in the health belief model.

## Intervening with young people’s NPS behaviour

The current research sought to inform the development of behaviour change interventions to prevent or reduce young people’s NPS use. In the following sub-sections, the findings of the three studies undertaken as part of this research are drawn together and some of the key issues relevant to interventions addressing young people’s use of NPS are highlighted and discussed.

### Issues of relevance to young people

The review of the NPS literature base conducted as part of this research project established that relatively few studies focused exclusively on young people and most studies examined the motives of older, more experienced drug users (See Chapter 3, Part II). As interventions based on older, experienced drug users might not be relevant to young people in the general population, the research within this project focused explicitly on young people, drawing on a diverse sample of NPS users and non-users from the general population. Over the course of the studies several issues emerged as particularly relevant to this population that would be useful for NPS interventionists to consider, namely; legal status, authority, social influences, identity, coping and health.

## Young people’s reasons for using NPS

Existing literature presents various reasons why people use NPS, many of which are noted in the literature review documented in Chapter 4. Following completion of the review, additional relevant papers came to the attention of the author, a number relating to specific substances and therefore missed by the general descriptions used for searches, and several published after the inclusion period for the review (see Appendix E Table E.1). The reasons identified in the additional set of studies confirmed those previously extracted, with the addition of 11 novel reasons. The reasons for NPS use expressed in the evidence base are listed in table 9.1 alongside the reasons found in the present research. To aid interpretation, those noted in the existing literature but absent in the focus group data are highlighted in red, and those expressed in the focus groups but not apparent in previous studies, in green. Table 9.2 presents the same information for reasons relevant to non-use of NPS.

Participants explanations for why young people use NPS closely echo the findings of other studies in relation to social reasons, coping mechanisms, ease of access, perceptions of safety, legal status, pleasure, curiosity and as an alternative to traditional illicit drugs. These factors appeared frequently in other studies, but whereas some sources placed a strong emphasis on external circumstances for use, such as legal status and availability, others put greater emphasis on more internal motivations such as pleasure, curiosity, coping and enhancement of social situations (Corazza, Simonato, Corkery, Trincas, & Shifano, 2014; Measham, Moore, Newcombe, & Welch, 2010; Soussan & Kjellgren, 2016; Werse &

**Table 9.1. Reasons for use of NPS organised by theme**

|  |  |  |  |
| --- | --- | --- | --- |
| **Theme** | **Reason for use** | **Previous**  **research** | **Current**  **research** |
| **Accessibility** | Easy availability (shops/online/dealers) | ✓ | ✓ |
|  | Low cost / value for money | ✓ | ✓ |
| **Substitution** | Illicit drugs unavailable | ✓ | ✓ |
|  | Cheaper than traditional drugs | ✓ | ✓ |
|  | Safer than traditional drugs | ✓ | ✓ |
|  | Better than traditional drugs | ✓ | ✓ |
| **Risk perception** | Perceived safety / risk denial | ✓ | ✓ |
|  | Lack of risk awareness/education | ✓ | ✓ |
| **Social influences** | Fit in with friends / conformity | ✓ | ✓ |
|  | Social acceptability | ✓ | ✓ |
| **Curiosity** | Curiosity / novel experiences | ✓ | ✓ |
|  | Attractive packaging | ✓ | ✓ |
| **Pleasurable effects** | Pleasure / to get high | ✓ | ✓ |
|  | Enjoyment / fun / excitement | ✓ | ✓ |
|  | Expansion\* | ✓ |  |
| **Coping** | Coping / relaxation / escapism | ✓ | ✓ |
|  | Boredom | ✓ | ✓ |
|  | Addiction / vulnerability | ✓ | ✓ |
|  | Habit / compulsion\* | ✓ |  |
|  | Self-medication / anxiety prevention\* | ✓ |  |
|  | Sleep aid / sedation\* | ✓ |  |
| **Managing drug use** | Manage effects of other drugs | ✓ |  |
|  | Manage addiction /withdrawal | ✓ |  |
| \* denotes novel reason extracted from studies excluded from literature review see Appendix X Table X.X for list of additional studies | | | |
| **Table 9.1 Reasons for use of NPS organised by theme - Continued** | | | |
| **Avoiding detection** | Not detected in drug tests | ✓ |  |
| **Quality reasons** | Consistency / reliability of effect | ✓ |  |
|  | High quality / purity | ✓ |  |
|  | Good reputation / recommended | ✓ |  |
| **Enhancement** | Sexual enhancement | ✓ |  |
|  | Cognitive enhancement\* | ✓ |  |
|  | Enhance abilities and performance\* | ✓ |  |
|  | Spiritual attainment\* | ✓ |  |
|  | Improve well-being\* | ✓ |  |
|  | Enhance creativity\* | ✓ |  |
|  | Enhance socialization\* | ✓ |  |
|  | Enhance intimacy\* | ✓ |  |
|  | Self-exploration /personal growth \* | ✓ |  |
|  | Sensory intensification\* | ✓ |  |
| **Legal status** | Because they are legal / not illegal | ✓ | ✓ |
|  | Avoid legal consequences / exclusion | ✓ | ✓ |
| **Authority** | Rebellion | ✓ | ✓ |
|  | Avoid trouble with authority figures |  | ✓ |
| **Identity** | Positive user identity / good background |  | ✓ |
|  | Negative non-user identity / too straight |  | ✓ |
|  | No stereotypes |  | ✓ |

\* denotes novel reason extracted from studies excluded from literature review see Appendix X Table X.X for list of additional studies

**Table 9.2. Reasons against use of NPS organised by theme**

|  |  |  |  |
| --- | --- | --- | --- |
| **Theme** | **Reason for use** | **Previous** | **Current** |
| **Risk Perceptions** | Dangerous / harmful / too strong | ✓ | ✓ |
|  | Unknown ingredients /unregulated | ✓ | ✓ |
|  | Risk aware /educated /media awareness | ✓ | ✓ |
| **Legal status** | Because they are illegal | ✓ | ✓ |
| **Unpleasant effects** | Unpleasant experience / bad trip | ✓ | ✓ |
| **Social influences** | Friends disapprove / uncool | ✓ | ✓ |
|  | Socially unacceptable | ✓ | ✓ |
|  | Family responsiblises | ✓ |  |
|  | Negative social interactions | ✓ |  |
|  | Resist social pressure / self-assertion |  | ✓ |
| **Accessibility** | Unavailable / hard to get | ✓ | ✓ |
|  | Waste of money |  | ✓ |
| **Substitution** | More dangerous than illicit drugs | ✓ | ✓ |
|  | Unpleasant /traditional drugs are better | ✓ | ✓ |
|  | Can afford better drugs |  | ✓ |
|  | Traditional drugs easier to get |  | ✓ |
| **Identity** | Stigmatised user identity / street users\* | ✓ | ✓ |
|  | Negative user identity / underage kids |  | ✓ |
|  | Positive non-user identity / clued up |  | ✓ |
|  | Positive traditional drug user identity |  | ✓ |
| **Authority** | Parents disapprove of use |  | ✓ |
|  | Authority figures disapprove of use |  | ✓ |

\* denotes novel reason extracted from studies excluded from literature review see Appendix X Table X.X for list of additional studies

Morgenstern, 2012; Winstock, Lawn, Deluca, & Borschmann, 2015). These internal influences are very similar to reasons found for why people use traditional illicit drugs (Benschop, Urbán, Kapitány-Fövény et al., 2020; Soussan & Kjellgren, 2016) which typically centre on pleasure and enhancement of positive affect, belonging, self-exploration, coping, habit and addiction (e.g. Boys, Marsden, & Strang, 2001; Nicholson, Duncan, & White, 2002; Novacek, Raskin, & Hogan, 1991).

In contrast, external circumstantial factors such as price, legal status, availability or non-detectability in screening tests are those which typically differentiate NPS use from the use of classic illicit drugs (Deligianni et al., 2019). With the exception of avoiding positive drug tests, these factors were all relevant to young people’s explanations of NPS use. The avoidance of detection in drug tests is most strongly related socially marginalised problem-drug users and the use of synthetic cannabinoids (e.g. Assi, Marshall, Bersani et al., 2020; Felvinczi, Benshop, Urban et al., 2019). As young people in this research were not engaging in problematic drug use, it is not surprising that they were not motivated to avoid drug screening.

Nor is it surprising that the easy accessibility of NPS emerged as a key factor in participants explanations of NPS use. In previous research, the easy accessibly of NPS is emphasised in more studies, across more countries and contexts, than any other reason. In other words, while easy availability and low price are important for understanding NPS use, they are not uniquely important for this population. Despite being heavily emphasised their discussions, participants did not consider accessibility to be the most influential driver for NPS use. Instead, in line with other research, participants regarded other motives to be of greater importance than accessibility (Johnston et al., 2016; Palamar et al., 2020; Sande, 2016; Soussan and Kjellgren, 2016), in particular social influences, coping, and the desire for pleasurable experiences.

The influence of accessibility may not be uniquely important to young people, but their relationship with legality does appear unique compared with other key user groups. Although the legal status of NPS appears to be an important consideration for socially marginalised users (see Chapter 4), for most recreational users, the legal status of NPS seems to be of little importance (McElrath & O’Neill, 2010; Measham, 2010; Soussan & Kjellgren, 2016). In contrast, in the current context the legal status of NPS was considered to be a significant motivation for NPS use for young recreational users.

In support of the assumptions presented in official reports (e.g. ACMD, 2015; HM Government, 2011) young people related the apparent legal status of NPS with both perceptions of safety and a desire to avoid trouble with authority. In contrast to studies of problem drug-users that emphasise undesirable legal repercussions (Barratt et al., 2013; Perrone et al., 2013) participants here framed the negative consequences of illegal drug use as incurring the disapproval or discipline of parents and guardians. Since these negative consequences were said to be easy to avoid, this implies that for the young people central to this research the associations between legality and safety were of greater significance.

The link between legality of a drug and perceptions of its safety is complex. While many recreational users of NPS do not associate legal status with low risk (Deligianni et al., 2017), the perception that legality implies safety has been observed amongst some recreational users (Schifano et al., 2006; Schifano et al., 2009; Corazza et al., 2010; Corazza et al., 2012; Davies et al., 2010; Ramsey et al., 2010). Findings from several studies show that for experienced drug users the link between legal status and perceived safety is often mediated by perceptions of quality (McElrath & O’Neill, 2011; Van Hout & Brennan, 2011). In these studies, legal status was thought to imply the reliable manufacturing of unadulterated substances with high purity and consistent quality, thus enabling more accurate and safer dosing. The quality of NPS has consistently been found to be an important consideration for recreational drug users (see Chapter 4). However, for the relatively drug naïve young people in the present research, the quality of substances did not emerge as an important motivator for use, and there was a notable absence of quality considerations in their discussions.

The general naivety of the participants may also explain why they did not refer to enhancement motives (see Table 9.1) or using NPS to manage drug use. Although participants considered the enhancement of positive affect as key for understanding NPS use, their descriptions of affect-based incentives centered on generalised descriptions of pleasure and enjoyment rather than the more detailed descriptions of experiential effects found in recent studies with more experienced drug users (Benschop, Urbán, Kapitány-Fövény et al., 2020; Soussan, Andersson & Kjellgren, 2018; Soussan & Kjellgren, 2016).

What does appear to be distinctive about young people in comparison to the user-groups identified in the NPS evidence base, however, are the reasons that emerged in this research which were not strongly associated with any of the user-groups. Specifically, reasons related to authority to identity, and the strong emphasis on social conformity (i.e. peer pressure and social acceptability).

### Authority

Young people’s relationship to authority emerged as a prominent feature within the studies conducted as part of this research, with the disapproval of authority figures presented as a frequent concern for young people. This draws attention to the specific context in which young people’s drug-taking behaviour occurs. Young people are significantly more likely to be living with their parents than older adults, with 66% of 15-25-year-olds living in their parental home (ONS, 2017). While young people’s behaviour is more strongly influenced by their peers than older adults, parental opinions continue to be important to them (Commendador, 2010; Galotti & Mark, 1994).

As noted above, young people’s relationship with authority seems to be an important factor for understanding their attitudes toward the legal status of substances. However, another important aspect of young people’s relationship with authority seems to be reactance against authority. This tendency to rebel against restriction was considered here to be related to their sense of autonomy, and perceived threats to their autonomy. Participants in the research emphasised the importance of offering young people an informed choice, and consistently warned of the danger of triggering reactance if young people feel they are being told what to do. The endorsement of individual rights to engage in risky behaviour such as drug use has been shown to increase during adolescence (Flanagan et al., 2008), which suggests that young people’s sense of autonomy may feel threatened by overly authoritative approaches to NPS intervention. This highlights the possibility of interventions inadvertently inciting NPS use with the use of overtly authoritative methods. The risk of reactance emphasises the need to work with young people to find acceptable approaches to intervention. The young people in this research emphasised the importance of a non-judgemental perspective, treating young people’s decisions with respect and offering people an informed choice.

### Social influences

The role of social influences in NPS use was strongly emphasised in this research, and social motives were described as most important to young people. This contrasts with previous studies of NPS use where social reasons were not strongly highlighted. This is likely to be due to age as previous research has tended to focus on broader age ranges with higher average ages. Adolescence and young adulthood are known to be a time when people are more susceptible to social influences (Costanzo & Shaw, 1966; Hoving, Hamm, & Galvin, 1969) and research shows that adolescents are more likely to engage in drug use when they are with their peers than alone (Dishion & Tipsord, 2011; Gardner & Steinberg, 2005; Simons-Morton, Lerner, & Singer, 2005). Young people framed social motives as both a desire to avoid rejection and a desire to gain approval which corresponds with research that shows that adolescents are both sensitive to rejection by their peers (Peake, Dishion, Stormshak, Moore, & Pfeifer, 2013; Sebastian et al., 2011; Somerville, 2013) and strongly value being accepted by their peer group. (Knoll, Magis-weinberg, Speekenbrink et al., 2015). Participants thought social influences were most likely to be in conflict with risk perceptions and therefore presented the greatest challenge to intervention effectiveness (See Chapter 8).

The increased emphasis placed on social influences after the ban appeared to an artefact of the apparent convergence of NPS with illicit drug markets, as prior to the ban NPS use was distinguished from use of illicit drugs as a niche activity, whereas after the ban NPS was framed as part of normal drug culture. The pervasiveness of drug use which was described by young people as something everyone does, suggests that perceived social norms around NPS use may have been strongly affected by the ban. That social norms influence behaviour is well established by research (e.g. Cialdini & Trost, 1998), so the apparent shift in descriptive norms from a niche activity to normal behaviour could encourage the use of drugs containing NPS. Although the framing of NPS as part of normal behaviour amongst young people’s peers appears to conflict with the apparent move away from NPS, it is important to note that NPS consist of a wide range of substances, and while more highly visible products such as spice may be discriminated against, other substances containing NPS may be part of the normal repertoire amongst particular drug sub-cultures (e.g. clubbers).

### Identity

Identity was a key theme within the current research, which contrasts with previous research examining users’ reasons for using NPS. Although the emphasis on identity may have been related to the inclusion of focus group questions based on the PWM which asked about typical users of NPS, nevertheless young people’s perceptions of users and non-users provided important insights into social processes related to NPS.

Identity concerns may be especially relevant to young people as identity formation is a key developmental task in adolescence and young adulthood (e.g., Erikson, 1968) and young people are more heavily influenced by perceptions of peer identities than older adults (e.g., Berndt, 1979; Brown, Clasen & Eicher, 1986). Young people’s perceptions of people who typically engage in a behaviour (i.e. typical NPS users) are thought to influence their own behaviour through the assumption that others may evaluate them as sharing characteristics associated with the target behaviour (Gerrard, Gibbons, Stock, Lune, & Cleveland, 2005). Although identity was not a dominant theme in the initial study conducted prior to the ban, change to young people’s perceptions of NPS users demonstrated the greatest differences pre- and post-ban. Prior to the ban young people associated NPS use with three types of users; underage children, young people from affluent backgrounds, and homeless street users. In addition, young people frequently noted a lack of user stereotypes, which they presented as enabling anyone to use them. Following the ban, however, young people appeared to exclusively associate NPS use with homeless users who were typically described as ‘zombies’. This led to the proposition that for young people, the increased visibility of homeless users offered important social cues about the harmfulness and desirability of NPS. The close association between young people’s perception of users and media depictions of NPS users (Alexandrescu 2010; Blackman & Bradley, 2017) suggests that the media has played an important role in shaping their attitudes towards NPS users, and potentially contributed to changes in patterns of NPS use.

### Legal status

Much of the concern about NPS rested on the assumption that young people used NPS because of their legal status (e.g. ACMD, 2011; HM Government, 2010; 2016). However, previous research on users’ motives indicated that legal status was not of primary importance to recreational users. Within the studies conducted as part of this research project, the perceived legal status of NPS was seen to be a central concern for the young people involved. Although they felt that some young people (i.e. existing illicit drug users) were unconcerned with the legal status of substances, the consensus was that legal status was an important reason why young people used NPS.

Legal status was linked to perceptions about health consequences and punitive consequences. For the use of NPS, before the ban, the perceived lack of punitive consequences was presented by young people as an important reason for use. In previous studies, however, concerns about punitive consequences were mostly salient in studies examining users with problematic drug use (Barratt et. al., 2013; Bonar et. al., 2014; Castellanos et. al., 2011; Every-Palmer, 2011; Perrone et al., 2013; Rees et. al., 2015). For the problem drug users studied, typically drawn from treatment settings, legally available NPS appeared to offer a way to evade institutional regulations and avoid positive drug tests. While these motives may not be relevant to young people in the general population, the commonality may be a higher perceived level of monitoring by those in authority. For young people living at home or in institutional settings (e.g. halls of residence), the legal status of NPS may have provided an important justification for their use.

This research also confirmed that young people do appear to associate legal status with perceptions of safety due to the misperception that legal products are regulated and tested. This is in contrast with findings for older, more experienced drug users who appear less likely to associate legal status with safety (Corazza et al., 2014; Norman et al., 2014). Consequently, young drug naïve users appear to be particularly at risk of underestimating the health risks associated with NPS use due to the association of legal status with low potency and perceptions of safety.

Following the ban, the perceived illicit status of NPS was associated with risk perceptions, and these mostly appeared to relate to perceptions of health risk, and to a lesser extent, a risk of punitive consequences. This suggests that the legal status of NPS may principally operate as a facilitator of use via perceptions of permissiveness, and illicit status as a constraint through perceptions of health risk. This proposition is supported by the observations by young people that drug use is easy to conceal, most people do not get caught, and for recreational drug users, legal status doesn’t matter.

However, the extent to which the apparent decline in NPS use following the ban might be attributable to the direct influence on young people’s cognition is unclear, as risk perceptions did not appear to differ significantly following the ban, and participants believed that many young people were unaware of the change in legal status. Consequently, it seems likely that the primary influence of legal status is indirect, via availability (McElrath & O'Neill, 2010; Measham, 2010). Prior to the ban, accessibility was emphasised by participants as the main reason young people use NPS. The importance of accessibility does not appear to be unique to young people, as accessibility has been cited as the primary reason for use in the majority of previous studies looking at people’s motives for using NPS.

### Coping

Although coping motives were strongly associated with homeless users, participants also felt they were relevant to young people, especially young people experiencing pressures related to academic achievement. Before the ban, NPS use was most frequently associated with young people described as academic achievers. It is thought that young people may turn to risky behaviours to help them cope with feelings of failure in important domains including lack of achievement (Brown et al., 1986). This highlights the importance of considering the wider context of young people’s lives.

### Health

Young people’s perceptions of health risk were very prominent throughout the current research. Perceptions of risk appeared to be specific to NPS, rather than a general assessment of drug harms, as, with the exception of heroin, other psychoactive substances were typically presented as less harmful than NPS.

In all three studies risk perceptions appeared to be the main driver of NPS avoidance, and although health motives were prominently associated with non-use, both users and non-users were presented as being motivated to protect their health. Displacement from NPS to other substances was mostly framed in relation to the relative health risks of NPS use, and some users of illicit drugs described the unknown risks associated with NPS as off-putting. However, despite the emphasis on health risks, the high potential for displacement indicates a need for caution when highlighting the dangers of NPS. This high potential for negative unintended consequences draws attention to the need for careful targeting of interventions.

Nevertheless, risk behaviour is linked to perceptions of risk and improving the accuracy of risk perceptions may reduce the likelihood of risk-taking behaviours (Mills, Reyna, & Estrada, 2008; Spurrier & Blaszczynski, 2014). Throughout the research, participants placed a strong emphasis on the bad and unknown ingredients of NPS products. The harmfulness of NPS was associated with a lack of regulation, the unknown nature of ingredients, the use of mixtures and the variability of ingredients and potency. Several young people (including drug users) displayed a natural cynicism toward sellers and a clear distrust of the ‘chemical’ nature of NPS. Young people consulted about the acceptability of interventions strongly endorsed a focus on the harmful chemicals used in NPS and the suspect practices of producers. A focus on unknown, potentially harmful ingredients would, therefore, highlight the distinguishing feature of markets affected by NPS, as well as offering an acceptable approach where young people and interventionists can find common ground.

### Young people’s diverse motives for NPS use

Another aspect of the current study when seen in comparison to other studies, is the breadth of motives and reasons captured. As previously noted, previous studies tend to focus predominantly on either internal or external reasons for NPS use, whereas in this research the importance of both internal and external influences has been highlighted. One possibility is that for young people without an established drug use trajectory, a wider range of motives may exert an influence on behaviour. Whereas, for users whose drug-behaviour is more embedded, the importance of motives supporting their drug use may have increased, while other influences have become increasingly less relevant. For example, to regular users of traditional illicit drugs, legality and curiosity may initially have had an impact but less so over time, as novelty diminished, and an illicit activity became normal. Understanding the full range of motives impacting young people’s NPS behaviour may offer important insights for interventionists as a wider range of motives may offer a greater range of potential intervention targets.

Although intrinsic motivations of drug use may well increase in importance as drug use becomes more established, external reasons remain important for understanding NPS consumption (Benschop et al., 2020). Accounting for the influence of both internal and external factors is important for intervention development; because too strong a focus on individual-level factors can obscure the impact of wider factors and consequently de-emphasise the importance of regulatory and structural actions that can address drug harms (Hart et al., 2016). Equally, too strong a focus on external factors may deemphasise the importance of intrinsic enhancement motivations such as pleasure, which may lead to reliance on intervention approaches which fail to connect with people’s personal experiences and desires (Deligianni et al., 2019; Pennay, 2015), this could potentially reduce intervention uptake or inadvertently causing reactance. (Barratt et al., 2014; Crossley, 2002; Gulliver et al., 2010; Rickwood et al., 2005; Soussan et al., 2018; Soussan & Kjellgren, 2019).

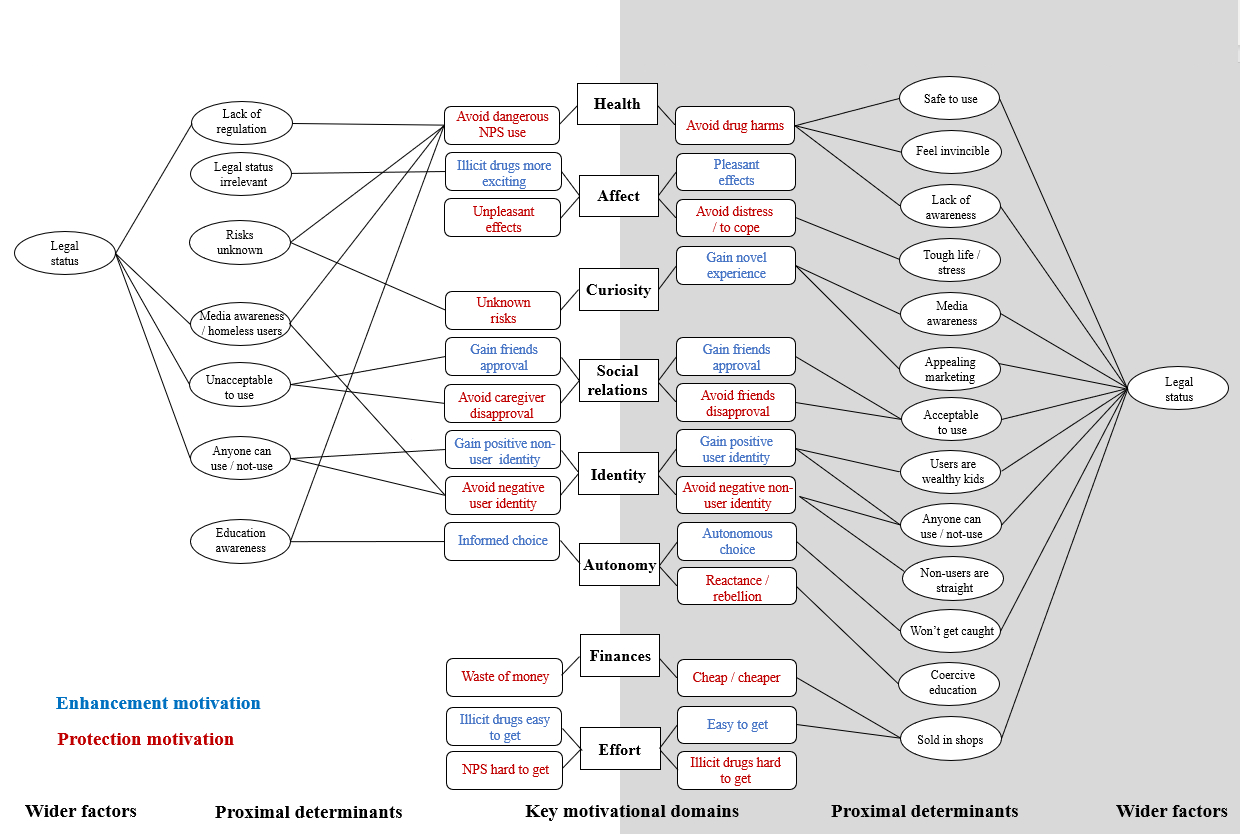
### A model of young people’s motivations for using NPS

Creating a model of young people’s motivations that can represent both internal and external influences would offer a useful tool for intervention development. This section outlines the development of such a model based on the analyses of the comparative studies.

Within the focus group data, references to motivations were distinguished from those expressing reasons through the identification of statements representing goal-directed beliefs (see Chapter 5, section 5.7.6 for a description of the process). Goal-directed beliefs were those which explicitly or implicitly incorporated an expected outcome (Norman, Conner & Stride, 2012; Schunk, Pintrich & Meece, 2008). Outcome expectancies were determined to be either positive (e.g. experience pleasurable effects) or negative (e.g. experience unpleasant effects). Outcome expectancies were grouped into the following motivational domains based on semantic relatedness 1) health, 2) affect, 3) curiosity, 4) social relations, 5) identity, 6), autonomy 7) finances and 8) effort (see Chapter 6, Section 6.4.5 for descriptions of the domains). Reasons were identified as the context-specific cognitions that participants used to explain NPS use (e.g. legal status, education, availability, media representations) (Westaby, 2005; see Chapter 5, Section 5.3.1). Through analysis of the relationships between concepts (e.g. legal status implies NPS are safe to use, therefore no harm will result) a model of the data was created for explaining both use and non-use of NPS (see Appendices E). A simplified version of the resultant model is presented in Figure 9.1.

The model represents each motivational domain (e.g. social motives) as a type of resource (e.g. social status/capital) which can potentially be threatened or enhanced by aspects of a young person’s context (e.g. peer pressure or opportunity to belong). The model proposes that when faced with a potential loss or gain (e.g. friends’ disapproval or approval), the young person then becomes motivated to act (i.e. use, or not use, NPS) to either enhance or protect a valued resource.

The 8 motivational domains are presented as general motivations that interact with wider contextual factors (such as legal status) via norms, attitudes and beliefs (e.g. legality implies safety) to influence outcomes (i.e. take NPS). The domains are presented as general motivations, the same underlying motives were found to explain both NPS use and non-use. In other words, the motivations do not predict NPS use in isolation, rather, interactions between motives and wider factors determine NPS use via proximal psycho-social determinants (i.e. attitudes, beliefs and norms). For example, the motivation to protect their health may drive a young person to use NPS or abstain from use depending on whether they perceive NPS to be high or low risk, or more or less risky than available alternatives (e.g. traditional illicit drugs). The model emphasises the contextual nature of NPS use, as behaviour is presented as an outcome of interactions both within and between domains. For example, a young person might be unlikely to use an NPS at home where caregiver disapproval is salient but intend to use NPS on a night out where their friends’ approval is salient. However, their intention to use NPS could then be placed in conflict with health motives when they are offered an unknown brand of NPS and the unknown risks of an unfamiliar product present a salient threat.

Figure 9.1. Motivational domains model explaining young people’s use and non-use of NPS   
  
 Reasons and motives for not taking NPS Reasons and motives for taking NPS

### Viewing NPS use as the outcome of the self-regulatory motivational system

In this model, NPS use is depicted as the outcome of a dynamic self-regulatory system that is sensitive to both young people’s cognitions and priorities as well as the wider context which both facilitates and constrains NPS use. Depicting young people’s NPS behaviour in this way offers several advantages.

The model frames NPS use as the outcome of normal processes rather than abnormal or deviant behaviour, therefore supporting the perspective that risky adolescent behaviour should be understood as an adaptive evolutionary function rather than maladaptive or dysfunctional (Ellis et al., 2012).

Representing behaviour as the outcome of dynamic regulatory systems emphasises the importance of processes and interactions, both between motives (self-regulation) and across wider systems (e.g. family dynamics, educational systems, media practices, national and international regulatory systems). From an intervention perspective, this draws attention to the possibility of capitalising on the synergies and conflicts within interconnected systems and the potential benefit of multi-dimensional, multi-level approaches. In this way, the model offers support for approaches to substance use that are holistic, multidimensional, non-judgemental and culturally sensitive (Stevens & Forrest, 2018; Van Hout, Crowley, O’Dea et al., 2019). It also offers a framework for appreciating the intertwined relationship between the risks and the benefits of NPS use, thereby offering accounts which could better resonate with drug users and consequently make prevention messages more acceptable and credible (Pennay, 2015).

If young people’s behaviour is a product of the balance between several motivations, then the more motivations synergistically engaged to influence the balance towards a desired outcome the better. Similarly, focusing on the conflicts between motivational systems could reveal beneficial disruptions that also favour the desired outcome, as well as exposing counterproductive disruptions that may produce iatrogenic effects.

For example, overly authoritative approaches to health intervention and those which fail to sufficiently acknowledge peoples’ own perspectives can be vulnerable to “boomerang effects” that inadvertently encourage the behaviour they aim to prevent (Crossley, 2002; Gulliver et al., 2010; Rickwood et al., 2005). Drug prevention interventions are particularly susceptible to iatrogenic effects (Barratt et al., 2014; Soussan et al., 2018) which have been explained as a result of psychological reactance (Crossley, 2002). Reactance is said to occur when interventions are perceived as a threat to an individual’s freedom. The perceived threat results in resistance and internal pressure to re-establish the lost freedom through rebelling or acting in opposition to the intervention efforts (Soussan & Kjellgren, 2019).

Researchers have acknowledged the need to remain alert to conditions that trigger reactance and promote the importance of intervention approaches that are autonomy-supportive and acknowledge the users own perspective (Soussan and Kjellgren, 2016). However, autonomy motives are rarely given equal status in explanations of NPS use, despite autonomy being recognised as a fundamental human motivation essential for supporting people’s well-being and self-determination (Deci & Ryan, 2008; Ryan & Deci, 2000).

While it has been recognised that people’s substance choices can be motivated by a desire to avoid stigmatised identities (McElrath & O’Neill, 2011) discussions around NPS use rarely draw upon identity motives.

Similarly, it is well recognised that accessibly is one of the most commonly endorsed reasons for NPS use and a key factor for explaining choices between substances. As the impacts of legislative efforts demonstrate, accessibility is not a simple independent variable but a dynamic player in complex system interacting with a person’s needs, vulnerabilities, capacities and priorities (e.g. interactions between availability, coping motives and SES). Typically, accessibly is presented as an external factor, but this model explains how accessibility is translated into internal motivations to protect or expend valued financial and energetic resources.

### Potential intervention targets and method

The following section discusses possible intervention targets and the methods highlighted by participants as the most suitable and relevant.

#### A focus on unknown ingredients

In the current conditions, we are faced with a choice. Firstly, drug prevention interventions can be targeted at specific types of NPS distinguished by their common name as perceived by users (e.g. spice, black mamba, clockwork orange). Secondly, drug prevention activities can focus on illicit drugs more generally, such as addressing the developmental risk factors of psychoactive substance use or updating school curricula to include examples of common NPS. Thirdly, interventions can target young people’s awareness of the legal status of NPS and the implementation of the PS Act. Or fourthly, interventionists can shift to a focus on approaches that address the increased diversity of psychoactive substances now found within recreational drug markets as a result of the emergence of NPS.

The current research project set out to explore young people’s beliefs about NPS with the aim of informing drug prevention interventions, and during the course of the research young people referred to several specific substances that could offer potential targets for intervention (see Chapter 6, Section 6.5.3; Chapter 7, Section 7.6; Chapter 8, Section 8.4.8). The named NPS products identified by participants in the studies were three brands of synthetic cannabinoids, of which, ‘spice’ is well recognised and is reported to be in continued use following the ban. However, it is unclear whether spice is continuing to be used within the population of interest within this research (i.e. for recreational use by young people). Although synthetic cannabinoids were initially associated with recreational use (Vandrey et al., 2012) spice consumption has become increasingly associated with problematic drug use in marginalised groups such as the homeless and prison inmates (Bonar, Ashrafioun, & Ilgen 2014; Scottish Prisoner Survey, 2017; User Voice, 2016). Participants’ discussions reflected these changes, with more participants in the earliest studies describing their own negative experiences with spice than the later groups, where spice was largely presented as a drug associated with homeless users.

While the problems associated with spice and similar synthetic cannabinoids need to be addressed, the findings of this research indicate that for young people in the general population, the greater issue is the unknown nature of many recreational substances, the variability of ingredients and the growing sales of drug mixtures.

For interventionists or as an intervention focus, the advantage of a focus on ingredients and production practices is that it can avoid moralistic or overly authoritative approaches. Evidence from the evaluation of illicit drug interventions demonstrates that approaches focused on ethical or moral aspects of decision-making are ineffective and can have counterproductive effects (UNODC, 2018). Participants also highlighted the importance of a non-judgemental approach, which research confirms to be more effective and acceptable to participants (James, 2011; Novakovic, Rutter, Ainsworth, et al., 2016; UNODC, 2018).

However, information about harmful ingredients and production methods mustn't be presented as stand-alone information, as the use of stand-alone information is not recommended for drug interventions (ACMD, 2015; EMCDDA, 2011; HM Government, 2017; Mentor-ADEPIS, 2014; UNODC, 2018). Evidence from several reviews and studies shows that information provision alone is an ineffective form of drug intervention (Brotherhood et. al, 2013; EMCDDA, 2011; James, 2011; Novakovic, Rutter, Ainsworth, et al., 2016; UNODC, 2018) and has been associated with counterproductive iatrogenic effects (EMCDDA, 2011).

#### Web-based and social media

The role of social media was increasingly emphasised by participants as a forum where young people learn about drugs, as well as a setting where dealers engage with consumers. Consequently, young people in the acceptability study believed that social media would be the most appropriate setting for an intervention. The use of mass media is not recommended for stand-alone information provision in drug prevention (EMCDDA, 2011; HM Government, 2017; NICE, 2017; UNODC, 2018) as there is strong evidence that demonstrates that stand-alone mass media campaigns are ineffective and can be harmful (Brotherhood et. al, 2013; EMCDDA, 2011; UNODC, 2018). In contrast, other evidence shows that media promotions can be effective when they strongly connect with existing drug prevention programmes (EMCDDA, 2011; UNODC, 2018). Although evidence for the effectiveness of web-based approaches remains quite limited and some studies have found inconsistent effects (Novakovic, Rutter, Ainsworth, et al., 2016) they are optimistically promoted with calls for more research into their efficacy (EMCDDA, 2011; NICE, 2017). Web and mobile-based approaches to drug prevention are generally considered distinct from mass media campaigns if they are interactive and more specifically targeted. The significant advantage offered by web-based approaches is their potential for selective targeting combined with a far reach. They also have the advantage of offering privacy and confidentiality, factors which may be especially important for engaging with users or potential users of illicit drugs. Although web-based approaches may exclude some of the most vulnerable groups who do not have good access to the internet, they have shown positive effects with recreational users (EMCDDA, 2011) and there is also some evidence that they can improve contact with some at-risk groups (Novakovic, Rutter, Ainsworth, et al., 2016).

### Theories of young people’s NPS behaviour

A key aim of this research project was the identification of theory suitable for use in the development of NPS interventions. Of the five social cognition models identified as candidates and used in the development of the research (see Chapter 4, Section 4.5), young people’s NPS behaviour appears to be best explained by the theory of planned behaviour (TPB), and an optimal model would potentially be offered by an adapted combination of the two extensions of the TPB; behavioural reasoning theory (BRT) and prototype willingness model (PWM) along with the inclusion of a measure of self-efficacy.

The TPB was considered to be a more suitable model to use to understand young people’s NPS behaviour than the two health-based models as the range of motives identified in Study 1 indicated that a good model would need to consider more than health-based cognitions and health motivations. However, the potential for young people’s health motives to conflict with hedonistic motives (i.e. knowing NPS can be harmful but wanting to get high anyway) indicated that the cognitive attitude and affective attitude constructs of the TPB would be best separated into independent constructs. Similarly, the strong potential for peer approval to conflict with parent disapproval (i.e. wanting to fit in with friends but knowing parents would disapprove) indicted that the TPB social norms construct would also be best separated, to allow the influence of parent/carers and the influence of peers to act independently. In addition, the inclusion of a measure of self-efficacy was recommended to capture an aspect of young people’s desire or capacity for autonomy. As the analysis in Study 1 also emphasised the importance of context-specific reasons for understanding young people’s NPS choices, the use of BRT was recommended as BRT also includes model constructs that account for context-specific influences (see Chapter 5).

However, the analysis in Study 2 also highlighted the significance of young people’s perceptions of user types in shaping their beliefs and attitudes about NPS, leading to the proposition of a social pathway much like the social reaction path described by the PWM. Consequently, a combination of both models augmented with self-efficacy is recommended to guide intervention development. A schematic illustrating the suggested model constructs and their relationships is shown in Figure 9.2.

Figure 9.2. Social cognitive model constructs mapped onto to young people’s motives, beliefs and reasons for using or not using NPS

**NPS use or non-use**

Curiosity

Behavioural willingness

Behavioural intention

Prototype images

Affective attitude

Cognitive attitude

Peer norms

Caregiver norms

PBC / Self-efficacy

Reasons for

Reasons against

Education & awareness

Legal status

Product purity & potency

Vulnerability & adversity

Marketing

Substance availability

**GLOBAL MOTIVATION**

**MOTIVATIONAL DOMAINS**

**REASONS**

**BEHAVIOUR**

**WIDER FACTORS**

PBC = Perceived behavioural control

### Implications for model development

While the existing socio-cognitive models were identified as offering a relatively good fit with the data from Studies 1 and 2, several motivations that emerged as especially important to the young people in this research would be better represented within these models by the inclusion of additional constructs. Motives that appeared particularly relevant to young people but were less well represented in the socio-cognitive models were identity motives, autonomy motives and some aspects of social motivations.

#### Extending the TPB to include a self-identity construct

The inclusion of a self-identity construct in the theory of planned behaviour has been proposed by several authors (Charng, Piliavin, & Callero, 1988; Conner & Armitage, 1998; Reid, Sparks, Jessop et al., 2018; Rise et al., 2010; Sparks & Shepherd, 1992; Terry, Hogg, & White, 1999). Self-identity predicts intentions, after standard TPB components have been accounted for, in a variety of health behaviours (Reid, Sparks, Jessop et al., 2018; Rise et al., 2010), including alcohol consumption (Conner, Warren, Close, & Sparks, 1999), sexual health (Booth, Norman, Harris, & Goyder, 2014), physical activity (Jackson, Smith, & Conner, 2003; Ries, Hein, Pihu, & Armenta, 2012), environmental activism (Fielding, McDonald, & Louis, 2008), and recycling (Mannetti, Pierro, & Livi, 2004; Nigbur, Lyons, & Uzzell, 2010; Terry et al., 1999). Support for the inclusion of self-identity within the TPB is not unanimous however and others argue that self-identity is better accounted for by measures of past behaviour and the personal importance of behaviour. Although this might be the case for existing behaviour patterns that are already incorporated into the self-concept, the apparent impact of the shift in NPS user identities following the ban, suggests that young people were responding to a potential new threat to their self-identity, rather than reinforcing established behaviours. Accordingly, the present research findings lend support the argument that the addition of a self-identity construct would be of benefit to the TPB and suggests that this might be particularly true for interventions targeting young people due to the importance of identity concerns for this age group (e.g. Erikson, 1968, Berndt, 1979; Brown, Clasen & Eicher, 1986).

#### Extending the TPB to include an autonomy support construct

Over the last decade numerous researchers have sought to integrate self-determination theory and the theory of planned behaviour leading to increased support for the inclusion of an autonomy support construct in the TPB. Self-determination theory is an increasingly popular theory of motivation that posits competence, autonomy and relatedness as fundamental drivers of human behaviour (Ryan & Deci, 2000). In attempting to integrate the two theories the concept of autonomy is drawn from self-determination theory and proposed as an extension of the theory of planned behaviour in the form of an autonomy support construct.

According to self-determination theory, autonomy support from significant others can aid self-determination, which is described as the need to experience oneself as the initiator and regulator of one’s actions (Chatzisarsntis, Hagger, Wang et al., 2009). Autonomy supportive contexts are said to occur when significant others encourage choice and participation in decision-making, engage in supportive communication and minimise pressure to perform the desired behaviour. Autonomy supportive contexts are contrasted with controlling contexts in which significant others pressure people to act in specified ways and without offering choice or rationale (Deci et al. 1994; Chatzisarsntis, Hagger, Wang et al., 2009). While autonomy-supportive contexts encourage intrinsic motivation to perform the desired behaviour, controlling contexts can precipitate reactance (Brehm 1966; Chaiken 1980; Deci et al. 2006). Numerous health behaviour studies provide support for the inclusion of perceived autonomy support in the TPB, particularly in the context of physical exercise (Chatzisarsntis, Hagger, Wang et al., 2009; Hagger & Chatzisarantis, 2009).

The autonomy support construct offers an excellent representation of the autonomy domain described in the present research and therefore the findings can be said to support the inclusion of an autonomy support construct in the TPB. As the majority of studies examining the efficacy of autonomy support are within the domain of physical exercise, NPS and/or drug use would present a novel area for investigating this construct.

#### Extending the TPB to include a social identity construct

The theory of planned behaviour has been criticised for insufficiently accounting for peer influences (Chatzisarantis, Hagger, Wang et al., 2009), as previous research has shown that peer group influence can have a significant effect on behaviour, especially among young people (Hagger et al. 2003). Critique rests on the basis that the social norm construct of the TPB accounts for the influence of significant others and not group influences. In the context of young people’s behaviour, this typically provides a measure of parental influence whilst omitting the influence of peers (i.e., peer influence; Armitage and Conner 2001; Hagger et al. 2002; Hagger and Chatzisarantis 2006). In the current research both parental (caregiver) influences and peer influences appeared to be important for understanding young people’s NPS behaviour. Crucially, not only did these influences appear to be important and separable, but they also appeared to have high conflict potential; in other words, the influence of parents and friends are likely to independent and in opposition. This finding leads to the conclusion that the social norms construct of the TPB should be separated to allow the influence of peers and authority figures to act independently.

The social identity construct proposed by Chatzisarantis and colleagues (2009) offers a suitable addition to the TPB for achieving this end. Whereas the traditional social norm construct taps into the approval and disapproval of significant others (i.e parents/carers), the social identity construct captures aspects of a person’s identification with a valued social group and their perceptions of the group norms. Social identity constructs have been found to be a valuable contribution to the TPB in a few contexts such as cycling, speeding, physical exercise and recycling (Chatzisarantis, Hagger, Wang et al., 2009; Lois, Moriano & Rondinella, 2015; Terry, Hogg & White, 1999). The findings of the present study point towards the benefits of also incorporating a social identity construct in the context of young people’s NPS/drug use. However, as there appears to be considerable overlap between the social identity and self-identity constructs put forward as potential refinements of the social cognitive theories, it seems unlikely that both constructs would need to be included at once. Therefore, a good starting point would be to test which of the two identity constructs was able to account for the greatest variance in young people’s drug-taking behaviour.

#### Implications for wider health behaviour research and theory

The motivational domains identified from the study data are represented in the derived model as general domains (see Figure 9.1), and this therefore implies that the relevance of the proposed model may extend beyond the context of NPS-related behaviour.

While each of the proposed motivational domains has parallels in existing research and theory (see Chapter 6), models of health behaviour rarely consider such a wide range of motivational influences concerning specific health behaviours.

It is argued here that this is not because the motivational domains are unrelated to a variety of other health behaviours, but rather that they might be less disruptive in those contexts. If a valued resource (e.g. finances, self-identity, personal autonomy) is neither threatened nor presented with an opportunity, then the motivational domain may appear to recede in influence.

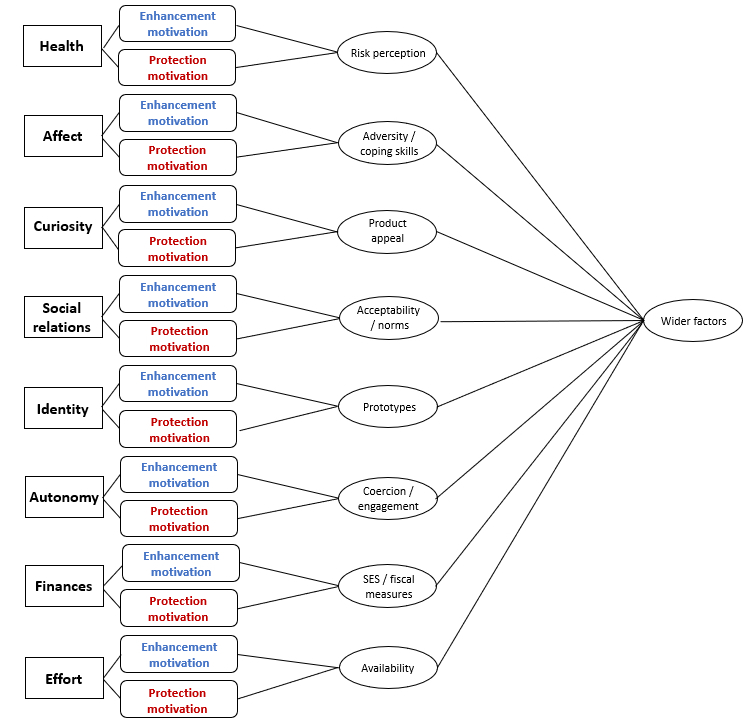
This is perhaps why, in comparison to previous research, peer influences, autonomy and identity emerged as particularly important influences. Although concern about substance use is often focused on young people, research is disproportionally based on studies with adult populations. However, many adults have more established peer groups, self-identities and are generally assumed to be responsible for their own behaviour. In other words, their valued identities, sense of belonging and personal liberties may be generally less exposed to opportunities and threats than young people whose sense of self, social circles and personal freedoms are often yet to be established or remain in flux as they face major personal transitions (e.g. moving schools, entering employment, moving into independent living).

The model presented here not only draws attention to the importance of including these domains but offers a theoretical account of their influence with a self-regulatory system. One valuable contribution in the context of substance-based interventions is the incorporation of a theoretical framework which accounts for young people’s autonomy and mechanism for explaining reactance effects and how they can best be avoided through the enhancement of autonomy through the provision of autonomy support.

Alcohol and tobacco interventions are both vulnerable to iatrogenic effects particularly when interventions are overly authoritative or judgemental (UNDOC, 2018). Autonomy supportive interventions have been successful in producing greater health behaviour change with smoking cessation (Williams et al. 2006). While autonomy support has been positively related to autonomous motivation and intentions to drink responsibly, reactance has been shown to negatively influence attitudes to responsible drinking via a perceived threat to decision-making freedom (Pavey & Sparks, 2009). This indicates that a model which can conceptualise independent pathways for autonomy and reactance may be of value for alcohol and smoking interventions. Figure 9.3 sets out a prototype model for testing with young people in the context of these behaviours.

**Figure 9.3. Prototype for a motivation domain model for young people’s substance use**

Valued resource Motivation Behavioural determinants Wider factors



### Salient beliefs

Having identified theoretical constructs suitable for describing young people’s NPS behaviour, the predictive power of the various model constructs could then be assessed. Typically, this would be achieved through the use of surveys which can be used to examine to what extent young people endorse the beliefs related to each construct, and which beliefs are most strongly correlated with use and non-use of NPS. To aid the development of validation surveys, the key salient beliefs associated with the proposed model constructs as expressed by young people in taking part in this research have been collated and are presented in Table 9.3. The beliefs were extracted from the data in Studies 1 and 2 and represent the most commonly expressed behavioural beliefs that may encourage or discourage young people's use of NPS.

**Table 9.3. Salient behavioural beliefs discouraging and encouraging use of NPS**

|  |
| --- |
| **Model construct**  *Motivational domain*  Behavioural belief |
| **Cognitive attitude** |
| *Health beliefs discouraging use* |
| Legal highs are more dangerous than classic illegal drugs |
| Legal highs aren’t tested, it’s a different mix of chemicals every time |
| I don’t know what’s in them, the risks are unknown, anything can happen |
| Legal highs are deadly, even if one is ok, the next one could kill me |
| Legal highs are bad for me, they could make me really sick |
| If legal highs have been made illegal to sell, they must be dangerous to use |
| *Health beliefs encouraging use* |
| If they are legal, they must be safe because they’ve been tested |
| Bad things happen to other people, I’ll be fine if I take a legal high |
| Legal highs are safer than classic illegal drugs |
| Just because one type of legal high is bad, it doesn’t mean they all are |
| **Affective attitude** |
| *Pleasure-based beliefs discouraging use* |
| I’ll feel awful if I take a legal high, the trip is really bad |
| The aftereffects are horrible, I’ll regret taking it |
| The effects of legal highs are much worse than classic drugs |
| *Pleasure-based beliefs encouraging use* |
| I’ll feel good if I take a legal high, the high is pleasurable |
| Taking legal highs is enjoyable, a great way to have a laugh |
| Now using legal highs is taboo, they seem more exciting |
| **Model construct**  *Motivational domain*  Behavioural belief |
| *Coping beliefs encouraging use* |
| Taking legal highs can help me forget my worries |
| Taking legal highs can help me relax |
| **Subjective norms** |
| *Peer-oriented beliefs encouraging use* |
| My friends would approve of me taking legal highs |
| It’s normal to take legal highs, everyone does it |
| *Parent-oriented beliefs discouraging use* |
| I’ll get in trouble if my parents catch me taking legal highs |
| **Behavioural willingness** |
| *Prototype beliefs encouraging use* |
| Smart people from good backgrounds use legal highs |
| Anyone can be a user, there are no stereotypes |
| *Prototype beliefs discouraging use* |
| Legal highs are cheap crap for poor people |
| *Curiosity encouraging use* |
| I’m the kind of person who just has to try legal highs for myself |

|  |
| --- |
| **Model construct**  *Motivational domain*  Behavioural belief |
| *Autonomy beliefs encouraging use* |
| I won’t get a criminal record for using legal highs |
| It’s fine to use legal highs because they are legal |
| I’ll take legal highs if I want to, it’s my choice |
| Telling me not to take legal highs just makes me want to do them more |
| *Autonomy beliefs discouraging use* |
| I could get a criminal record if I’m caught with legal highs |
| *Financial beliefs discouraging use* |
| Legal highs are a waste of money |
| *Financial beliefs encouraging use* |
| Legal highs are a good way to have a cheap night out |
| *Effort beliefs discouraging use* |
| Legal highs are hard to get hold of |
| *Effort beliefs encouraging use* |
| Legal highs are easy to get hold of |
| Classic illegal drugs are hard to get hold of |

### Potential modifying factors

Taken together, the findings of this research highlight the following factors as potential modifiers of NPS use which may need to be considered in intervention development: age, level of drug experience, gender, and socio-economic status. The project set out to investigate why young people use NPS and the emergent issues outlined above indicate that young people’s NPS decisions are influenced by a unique set of factors which may result in differential outcomes compared with other potential user groups. Consequently, age is likely to be an important modifying factor. However, various findings suggest that much of the effect of age might be explained by a person’s level of drug experience, with younger people more likely to be drug naïve and more likely to associate perceptions of legality with safety. Although this study was not able to distinguish young people’s attitudes by gender, it is important to note that males are twice as likely to use NPS than females (CSEW, 2018). The differential impact of the PS Act on relatively affluent young people and disadvantaged groups is a clear indicator that socioeconomic status may be an important modifier of people’s reasons for using, or not using, NPS.

### Difficulty defining the behavioural target

For interventions based on socio-cognitive models to be effective the target behaviour needs to be clearly defined (Ajzen, 1988). However, young people in the focus groups were at times confused about what counted as a legal high, and the term NPS was entirely unknown to the participants.

The lack of clarity around NPS and confusion as to what constitutes an NPS is not limited to young people. The formulation of a clearly demarcated, consistent and widely accepted definition is beset with challenges and even experts can find it difficult to determine whether a substance should be considered an NPS.

The difficulty is that definitions are trying to chase a moving target made up of hundreds of substances. New substances are detected every year, while previously identified substances are assessed and reclassified and no longer meet the criteria to be considered an NPS.

Furthermore, there is yet to be any consistency in the definition of NPS. While countries also develop their own working definitions, two prominent definitions used commonly drawn on by experts are the international definitions provided by the UNDOC and EMCDDA (see Table 9.4). Both definitions centre on psychoactive substances not controlled under the 1961 or 1971 United Nations Conventions and both specify that a substance should also pose a threat to health. However, while the UNDOC definition evokes a very general description of a threat to public health the EMCDDA offer the benchmark of harm as operationalised by scheduling within the UN drug Conventions. While the schedules encompass low to high risk, they consider both the threat posed to public health and the risk of abuse by the user. Where the EMCDDA definition also refers to new substances only, UNDOC further qualifies that they only need to be new to the market.

The definitions attempt to bring clarity to a complex issue but have limited practicality (Benschop, Bujaalski, Dabrowska et al., 2017). More than 250 substances are listed in the UN Conventions, with more added every year and hundreds not yet included. Determining the status of an individual substance without reference to an up-to-date register is unfeasible in most contexts. They also resting heavily on rather vague concepts of newness and health threat without clear guidance of what constitutes new or harmful.

The definition presented in the PS Act side-steps each of the issues, providing an extremely board definition for psychoactive substances based on their effects on the nervous system, and no requirement for novelty or harmfulness.

**Table 9.4. Salient behavioural beliefs discouraging and encouraging use of NPS**

|  |  |
| --- | --- |
| **Organisation** | **NPS Definition** |
| **UNDOC (2018)** | 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.  The term “new” does not necessarily refer to new inventions — several NPS were first synthesized 40 years ago — but to substances that have recently become available on the market. |
| **EMCDDA (2010)** | New psychoactive substance means a new narcotic drug or a new psychotropic drug in pure form or in a preparation.  New narcotic drug means a substance in pure form or in a preparation, that has not been scheduled under the 1961 United Nations Single Convention on Narcotic Drugs, and that may pose a threat to public health comparable to the substances listed in Schedule I, II or IV.  New psychotropic drug means a substance in pure form or in a preparation that has not been scheduled under the 1971 United Nations Convention on Psychotropic Substances, and that may pose a threat to public health comparable to the substances listed in Schedule I, II, III or IV. |
| **HM Government (2016)** | A substance which produces a psychoactive effect in a person if, by stimulating or depressing the person’s central nervous system, it affects the person’s mental functioning or emotional state. Exempted substances are: medicines, alcohol, tobacco, caffeine and food. |

From the perspective of young people in the current research, the difficulties of defining NPS were irrelevant since none of the participants were familiar with the term, favouring instead the term ‘legal highs’. Despite the salience of the word legal, even before the ban, many participants understood that not all ‘legal highs’ were legal. Nevertheless, numerous comments were made regarding the confusing legal situation. While the implementation of the PS Act in the UK has rendered the sale and distribution of all NPS illegal, personal use and possession are not criminalised. However, except for one or two more knowledgeable participants, most young people assumed that the ban rendered all use and possession of NPS illegal.

Collectively the participants seemed to identify NPS as any recreational drug that was not cannabis, cocaine, ecstasy or heroin but there was some confusion about whether ketamine and NOS were also legal highs. In addition, participants recognised NPS as branded, packaged products, regardless of how they were acquired. Participants predominantly associated the term ‘legal high’ with synthetic cannabinoids and synthetic stimulants/cathinones. Synthetic cannabinoids were generally referred to as ‘spice’ which was used as an umbrella term for all synthetic cannabinoids. Similarly, stimulants/cathinones were known in general as ‘bath salts’ with a few specific brands/substances mentioned.

It seems that participants were largely distinguishing substances based on visual cues and the novelty of substances within drug markets. They had greater certainty around the status of long-established substances (not NPS) and novel brands (NPS) with the most uncertainty surrounding popular but less well-established substances such as ketamine.

Unlike the UNDOC and EMCDDA, participants did not define substances by their harmfulness. Synthetic cannabinoids and heroin and were commonly singled out as high risk and NOS and cannabis as low risk. Their perceptions of the risks of other substances were more ambiguous and mixed. The official definitions of NPS bore little resemblance to young people’s real-world understanding of these substances.

To work around the difficulty of the diversity of NPS, generic terms were being used for entire classes (e.g. synthetic cannabinoids or synthetic cathinones) of substances based on their appearance (e.g. white powders or plant materials) and/or effects (e.g. stimulants or relaxants). This is a particularly concerning development as potency, action potentials and effects can vary enormously across whole chemical classes making accurate dosing immensely difficult.

### Polydrug use, market displacement and unidentified substances

To what extent the distinction between NPS and traditional illicit drugs mattered to the young people is unclear, their efforts to identify which substances were classed as legal highs may well have been an artefact of the research questions. Although participants were not asked about traditional drugs explicitly, they were frequently mentioned, comparisons were made spontaneously, and substitution was a salient theme. This interwovenness of traditional illicit drugs and NPS in the young people’s conversations is reflective of the interdependence of drug markets in which polydrug use and displacement are commonplace.

Although participants made no explicit references to polydrug use, it was implicit in what they described as normal drug-taking behaviour. In their peer groups, drug use was framed as a normal recreational activity at parties, clubs, festivals and home. Psychoactive substances were typically described as being used alongside alcohol, with stimulants/empathogens taken on nights out, then followed by the use of cannabis to relax and wind down at home.

Despite the salience of health risks associated with NPS in participants discussions, the young people seemed to have poor awareness of the potentially harmful nature of interaction effects, dangers of mixing substances and the concurrent use of drugs and alcohol. Polydrug use is one of the most significant risk factors related to acute harms associated with NPS use (Corkery, Claridge, Loi, Goodair, & Schifano, 2013) so this lack of awareness is particularly worrying.

In contrast, participants expressed much concern about the dangerous mixes of chemicals within the products sold as legal highs. ‘Chemicals’ were perceived as dangerous and appeared to refer to adulterants (e.g. battery acid, rat poison and kitty litter) and laboratory-produced drugs (i.e. some NPS). Chemicals were contrasted with ‘natural’ plant-derived substances which were considered safer and less harmful. In this way, substances were framed in black and white terms as either good drugs or bad drugs, where typically good drugs are natural and pure, and bad drugs are adulterated with chemicals (With the exception of heroin, which was consistently perceived as very high risk). Although collectively participants perceived NPS as high risk, the lack of nuance in participants understandings of risk indicated an absence of drug education. For example, participants seemed unaware of the growing use of NPS as cutting agents, the dangers associated with changes in the purity of popular substances and showed little awareness of harm-reduction practices.

With the convergence of the markets for NPS and illicit drugs following the implementation of the PS Act young people may be increasingly at risk. The small amount of information they have has been developed without education and is based upon the circumstantial ideas and experiences they happen to have been exposed to, either in life or through the media.

They are generally naive as to the real risks associated with firstly, the variability in ingredients and potency of seemingly homogenous substances, and the increased interactional risks this variability poses when combined with other licit or illicit substances.

Where there may once have been a time when drug harms could be taught and understood for a small group of traditional drugs with relatively well known associated harms, it seems like a more general drug education programme needs to educate young people as to the dangers of not knowing just what is in any particular substance or indeed what interactions they may have.

#### Effects of legislative control

The displacement effects underscore the dynamic nature of drug markets and the complex multifaceted impacts of legislative intervention. Developing a better understanding of these impacts is vital for policy assessment and interventions design. Although small-scale studies with short follow-up times are insufficient for assessing the impact of policy (Sumnall, Evan-Brown & Mcveigh, 2011) the findings of the study can nevertheless be considered in the light of policy approaches in the UK, Europe and other regions.

Although drug policies are multifaceted, the drug strategies of various countries can generally be placed on a spectrum from more liberal harm-reduction focused approaches at one end to more prohibitive prevention focused approaches at the other. In addition, while some countries have specific approaches for addressing NPS incorporated in their drug strategies most do not. While Portugal, the Netherlands are considered to have some of the most liberal drug policies, the UK and Sweden represent countries with far more prohibitive approaches to drugs (EMCDDA, 2019). Other counties fall somewhere between the two extremes, but Ireland offers an example of a country with a similar approach to the UK but moving toward a stronger focus on harm-reduction.

At the furthest end of the spectrum Sweden has one of the most prohibitionist policies within the EU, with a no-tolerance approach to drugs that criminalises all drug activities including personal possession and use. There is no provision for harm-reduction within Swedish drug policy. Despite its relatively small population and low rates of drug use Sweden has an increasing number of problematic drug users with and high drug-related mortality rates (Chatwin, 2016). Usage of NPS is average for Europe. As was the case with the UK, NPS are not automatically covered by their existing drug legation. Unlike the UK Sweden has not opted to implement a blanket ban, however, and continues to rely on the scheduling of individual or groups of NPS based on risk evaluations. Research into the impact of the legal status of NPS in the Swedish context found that, as with the findings of the present research, the legal status is attractive to users (Ledberg, 2015). However, the change to illicit status as substances are brought under control seems to have a stronger deterrent effect than participants in the UK context.

The UK has a specific focus on illicit drugs rather than a broad approach to substance use. The UK drugs strategy aims to prevent drug use and support recovery. Drug offences are criminalised except for personal possession and use. The drug-related death rate is high and increasing (EMCDDA, 2019). There are few harm-reduction measures and consumption rooms remain illegal. The priority for harm-reduction are the highest risk users of opiates who are generally in their 40’s. The UK is one of several countries to bring in a blanket ban on NPS. As with illicit drugs personal possession and use of NPS is not a criminal offence. The PS Act uses the broadest definition of NPS. Prevalence rates for NPS have reduced from 6% pre-ban to 3% post-ban and while the ban was effective in preventing open sales but there are reports of widespread displacement of substances, with increases in the harm potential of substances and increased problematic use with marginalised users (CSEW: 2018; Ralphs, Gray & Norton, 2017).

At the opposite end of the spectrum, Portugal has the most liberal approach to drugs taking a broad perspective with harm-reduction as the main priority. Drug use is illegal but decriminalised, with a focus on treatment, recovery and rehabilitation in place of punitive measures. Drug usage and death rate are low with few problematic users. NPS prevalence is well below average at 1% (EMCDDA, 2019). Portugal has a strong focus on harm reduction with a broad range of age-specific measures.

The Netherlands also takes a liberal approach to drugs with a strong focus on harm-reduction and prevention. There is an attempt to separate less harmful soft drugs and more dangerous hard drugs. Personal possession of drugs is illegal but personal possession and use tolerated. A range of prevention activities focus on schools and high risk groups are supported by complementary harm-reduction approaches. Drug prevalence and deaths are moderate but there are problematic drug users. The prevalence of NPS use is low (EMCDDA, 2019).

In the context of this study it is significant to highlight the relative success of the Portuguese and Dutch models of control when compared to the more punitive approaches in countries such as Sweden and the UK. This thesis argues strongly for a move towards harm reduction strategies and the evidence from the experience of other countries bears this out. When it comes to the target demographic for the present study, namely young people, it is even more vital that education and harm reduction are the focus of policy as the criminalisation of young people for relatively minor offences can cause stigmatisation and potential limiting of life prospects. While harm-reduction efforts in the UK are hampered by the prohibitive political and legislative approach that has been pervasive for many years there are areas of the UK approach that can be built on. The UK places a strong emphasis on NPS monitoring and data collection and has been a pioneer in knowledge sharing with the UK Forensic Early Warning System (FEWS). Engaging with NPS users offers mutual benefit in the improvement of horizon scanning, identification of popular substances, information on harms and harm reduction information and drug testing. The changes to drug markets that have accompanied the emergence of NPS mean that the diffusion of large numbers of unknown and potentially harmful substances within drug markets is the new normal. The development of user engaged knowledge sharing and harm-reduction approaches are the logical inevitability for how best to deal with NPS.

#### Motivations in an national context

Studies of NPS user motivations across a range of countries show much consistency in the overall range reported reasons for use, with the core set of familiar factors of availability, price, legal status, pleasure, curiosity, quality and substitution re-occurring in many contexts. What is less clear are the nuances of how people’s motives relate to different legislative, cultural and economic contexts. Patterns are emerging to some extent, legal reasons generally appear to gain significance in more restrictive contexts (Bonar et. al., 2014; Castellanos et. al., 2011; Lauritsen & Rosenberg, 2016; Perrone et. al., 2013), while contextual factors seem to cluster somewhat with coping and habit (Benschop et al., 2017). However, the link between legal reasons and prohibitive context is not consistent, and possibly interacts with many factors such as user groups, substance types, naivety, age, context and more. Although the amount of studies examining users’ motivations seems to be growing rapidly there is yet to be enough data across enough contexts to map the complexity of these interactions. Although there are indications that the influence of user type or substance type may account for greater variance than context, for example, coping motives appear to be linked with marginalised users across international contexts, social motives with nightlife users and expansion motives with cyber-psychonauts (Benschop et al., 2017; Benschop et al., 2020). Similarly, experiential effects show consistency across contexts with enhancement motives best explained by stimulant use and expansion motives by psychedelics (Benschop et al., 2020).

However, interactions between user motivations and context can be hard to unpick as some studies emphasise internal motivations while others centre on external motives. For example, several studies have applied variations of Cooper’s (1994) Marijuana Motives Measure (MMM) to NPS use in a variety of countries (Benschop et al., 2017; Benschop et al., 2020; Soussan and Kjellgren, 2016). However, the MMM which predominately captures internal motivations and therefore influence of external contextual factors may be deemphasised. While this might be less of an issue for established drug users for whom internal motives may exert the greatest influence in familiar contexts with well-established norms and social groups the findings of our studies suggest that for young people the same might not be true. This research identified a wide range of internal motivations and external reasons that might be brought to bear on young people’s drug taking behaviour. As yet, few studies focus exclusively on young people, but the implications of this research are that young people’s developmental context and relations with caregivers, peers and autonomy present a unique set of conditions worthy of further study. Given the special attention young people receive within substance interventions, a comparative study of NPS use across a range of legislative contexts focusing specifically on young people and using a broad measure of both internal and external motivations and reasons could be of much value.

### Changes to the NPS market

The differences in young people’s perceptions of NPS after the ban reflected significant changes to the NPS market, and the current situation around NPS is now very different to the situation at the outset of this research. Given the nature of the changes, there are now important questions to be asked about both the relevance of developing interventions targeted at ‘legal highs’, and the relevance of targeting young people in the general population, who appear to be shifting away from the use of branded ‘legal high’ products. However, the changes to the products and populations signify deeper issues that need to be taken into consideration if interventions are to be both ethical and effective. As we saw in Study 2, the shift away from use of NPS by more affluent users described by participants, was also associated with displacement of NPS use onto traditional illicit drugs. The substitution of one psychoactive substance for another was an unintended consequence of the ban. These compensatory dynamics highlight the systemic nature of drug markets and draws attention to the need to consider young people's behaviour and the NPS market within the wider context of interacting drug markets and systems.

## Unintended consequences and the impact of the PS Act

#### The need to adopt systems thinking

Drug markets are complex systems, and activities in one part affect outcomes in another (ACMD, 2015). Without taking a wider perspective, interventions run the risk of unintended negative consequences. The implementation of the PS Act has highlighted several unintended negative consequences that draw attention to important issues that need to be taken into consideration. Firstly, the shifting of NPS sales on to the black market and accompanying increase in harm potential of NPS products. Secondly, the displacement of drug use from NPS to traditional illicit drugs. Thirdly, the increased stigmatisation of disadvantaged NPS users.

### Shift of NPS sales on to the black market

Critics of the PS Act were concerned that sales of NPS would be driven underground (Measham & Newcombe, 2017; Stevens et al., 2015), and in line with the findings of this research, emerging evidence confirms that sales have shifted onto the black market (DrugsWatch, 2018; EMCDDA, 2018; HM Government, 2018). The shift of sales onto the black market has several implications. The continued sales of NPS despite the ban is testament to the inability of legislative controls to prevent NPS reaching the market and indicates that NPS will be a continued concern for interventionists. In addition, as a result of sales shifting onto the black market, the context of interventions has become more complex and young people encountering NPS now face greater risks. The increased harm potential of NPS is the consequence of the unscrupulous practices of black-market traders and the loss of whatever measure of quality control was maintained by commercial headshops prior to the ban (DrugsWatch, 2018). The complexity of the intervention context has increased as the nature of what constitutes a ‘legal high’ has become unclear.

As a marketing term ‘legal highs’ effectively offered a catch-all term for describing what was a heterogeneous group of hundreds of drugs, largely united by their legal status (see Chapter 2, Section 2.2). With the change in legal status, there is little to unite this group of psychoactive drugs beyond their relative novelty to authorities and drug monitoring organisations. Within the current research, young people continued to recognise the term legal highs, but it seems likely the term will lose its relevance in time. According to young people in the studies, NPS were largely distinguishable from traditional illicit drugs by the way they were sold, that is, as packaged, branded, products that could be bought online and in shops.

While trade in branded ‘legal high’ products continues online, sales from UK sites are limited to use of exempted substances (e.g. caffeine) and therefore differ notably from the strong psychoactive substances previously available. The NPS products previously associated with the term legal highs are now only available through black market sources. With surplus headshop stock running out, there are reports that NPS on the black market are no longer being sold in commercial packaging, but increasingly sold in the same ways as traditional illicit drugs with informal packaging such as clear bags without brand-names (DrugWise, 2017; Ralphs, Gray & Norton, 2017). To further complicate matters, online retailers based outside of the UK continue to sell branded legal high products containing substances now banned in the UK. Although these sites do not ship directly to the UK, nevertheless, a strong global trade in branded NPS continues, that potentially offers lucrative opportunities for black market traders in the UK (EMCDDA, 2018).

In the wake of the PS Act, UK drug markets appear to be in flux as traders and consumers adapt to the changing conditions, and although it is probable that NPS will continue to be a feature of UK drug markets, it remains to be seen to what extent sales of the sorts of branded products young people here associated with the term legal highs will continue. If sales of branded products do continue, we have yet to see whether that will include trade in products containing banned substances, whether they will remain limited to legally available stimulants, or both. Inevitably, whatever the outcome with branded packaged products, we can also expect to see numerous NPS continue to diffuse into the black market, mixed with and alongside, traditional illicit drugs and sold under a variety of slang names (Measham, 2014).

For the interventionist these changes present a challenge. For an intervention to be effective, there needs to be a common understanding of what the target of the intervention is. In addition, models, such as the social cognition models considered in this research, work best when the target behaviour is highly specified, such as targeting a person’s intention to use ‘spice’ in the next month (Ajzen, 1988). With such uncertainty of what constitutes a legal high, and how NPS will be perceived by young people in the coming years, there is a risk that the efficacy of NPS interventions will be compromised as they may not be appropriately targeted. Clearly, there is a need for researchers to engage with young people and work closely with them to remain up-to-date with their shifting perceptions of NPS as drug markets adapt to the changing conditions.

### Displacement of drug use from NPS to traditional illicit drugs.

While the increased levels of risk facing users now forms part of the context in which interventionists work, the processes of substitution and displacement are an ongoing concern which must be taken into account in NPS interventions. This requires an understanding of the relative costs and benefits of using the target substances compared with their possible replacements. In this work, the parameters by which young people believed comparative evaluations were made were the harmfulness, quality, cost and availability of the substances being compared. Evaluations of the relative harmfulness of NPS and other drugs were especially salient.

Ultimately the overarching goal of drug prevention is to reduce the burden of drug harms in society (UNODC, 2018). However, if one harmful substance is replaced with another, potentially more harmful, substance, then displacement processes may undermine interventionists’ best efforts. To achieve the overriding objective of prevention work, there are times when a harm-reduction perspective will be most effective (Fletcher, Calafat, & Pirona, 2010). It is important therefore, to be aware of the relative harm potential of the different substances available to users to prevent migration from a less dangerous substance to a more dangerous substance. For example, there is good evidence to suggest that the addiction and harm potential of several synthetic cannabinoids are considerably more harmful than naturally grown cannabis, in which case substitution might be preferable where abstinence is unlikely. On the other hand, following the ban, many branded legal highs sold openly on the surface web generally contain caffeine as the main active ingredient in place of banned NPS. Although use of these products should not be actively endorsed, an intervention that resulted in displacement from legally sold caffeine-based products onto black market brands of NPS containing potent illicit substances such as synthetic cathinones would be of concern.

The high potential for substitution demonstrates that psychoactive substances cannot be viewed individually, and interventions must be placed within a wider contest of drug use rather than focusing on substances in isolation. Many psychoactive substances share the same risk factors, and young people willing to use one substance are more likely to use another to compensate for changes in the market or their risk perceptions (UNODOC, 2018). These compensatory effects highlight the dynamic, interactive nature of drug markets and further emphasises the value of adopting a systems perspective (ACMD, 2015).

### Increased stigmatisation of disadvantaged NPS users.

One of the most noticeable differences in young people’s discussions pre- and post-ban was the increased references to homeless users of NPS and the associated reputation of NPS as a cheap drug for people in poverty. With prevalence rates for NPS use reported to decline following the ban, based on measures in which the marginalised groups are systematically unrepresented, we can see that the apparent success of the ban seems to have come at the cost of the most disadvantaged users who are now exposed to greater risks. Furthermore, the increased visibility of those disproportionally affected by the negative consequences of the ban may have served to compound the situation through the processes of stigmatisation described in Study 2 (see Chapter 6, Section 6.5.1.4). The implications of this are that much of the apparent success of the ban may have less to do with the deterrent effect of the change in legal status and more to do with the stigmatisation of dependent users living in conditions of deprivation. Critics of the Government’s response to drugs point towards stigmatisation as a damaging consequence of a prohibition approach which disproportionately affects marginalised groups, further compounding social inequalities and encouraging a tendency for victim-blaming (UKDPC, 2012). As discussed in more depth in Study 2 (see Section 6.5), the disproportionately negative impact of the PS Act on marginalised and disadvantaged groups draws attention to the need for interventions to pay close attention to social inequalities and give careful consideration to how intervention activities may interact with processes of stigmatisation.

## Adopting a systems perspective

### Complex systems

The negative unintended consequences associated with the PS Act has drawn attention to the complex systemic nature of drugs markets and the need to consider young people’s NPS behaviour in a wider context. A complex system is composed of multiple interdependent systems within a connected whole (e.g. the human body), it has emergent properties, feedback effects, shows adaptation and behaves in a non-linear fashion (Rutter, Savona, Glonti, et al., 2017). Complex systems are more than the sum of their parts, with emergent effects that cannot easily be directly predicted from a system’s constituent elements. For example, the changing patterns of NPS prevalence across user groups can be conceptualised as an emergent property of the availability, quality, cost, social acceptability and other systems that shape their consumption. Feedback relates to changes that reinforce, or balance, further change. For example, the ban appeared to decrease the visibility of more affluent users of NPS, which may have reduced the appeal of NPS, further decreasing their visibility, further discouraging their use, and so on. Adaptation refers to compensatory dynamics and changes in behaviour in response to interventions, such as the displacement from NPS onto traditional illicit drugs.

A complex systems perspective moves away from simple linear models of cause and effect to consideration of how processes and outcomes at key points within systems drive change (Rutter, Savona, Glonti, et al., 2017). Rather than asking whether an intervention is successful in meeting specific prevention targets (i.e. reduction in NPS use), a systems mindset would consider if and how intervention work contributes to reshaping prevention systems in favourable ways (e.g. reducing the stigma associated with use of drug services). The systems perspective considers the prevention system as a whole, and therefore appreciates that while individual activities may not influence health outcomes directly, the combined influence of co-ordinated activities and interactions between components can produce knock-on effects until a tipping point is reached (ACMD, 2015).

From this perspective, the emphasis shifts from identification of individual variables that influence behaviour (although such information remains relevant) to identification of synergies and conflicts between mutually reinforcing and/or disruptive systems. The strength of this approach is that these patterns of interactions with synergistic and disruptive effects can be identified both within and across multiple levels of analysis. On one hand, we might look for synergies between individual level intervention activities and national or international prevention activities, and on the other hand, we can also look for synergies between the motivational domains on the individual level. Similarly, we can look for useful disruptions between systems both across levels or within the individual level.

In the context of young people’s NPS behaviour, each motivational domain can be viewed as part of a wider system that intersects within and across levels. For example, the financial motives identified in this work can be seen as a set of interacting processes where the global economic factors supporting overseas production of low priced NPS interact with dealers’ motives to make profit and users’ need to save money.

Viewing each motivational domain as part of a system draws attention to the interactions between motives which may be complementary (e.g. protect health and avoid a stigmatising drug user identity) or in conflict (e.g. protect health but face rejection by peers). These multiple motivational systems, therefore, present multiple (conflicting and complementary) goals which a young person must balance and regulate. This frames NPS use (and non-use) as the outcome of self-regulatory processes rather than the outcome of decision making. The role of the interventionist then is to shift the balance of the system though levering complementary and conflicting motivational systems to encourage and support healthy outcomes.

#### From decision making to self-regulation

Viewing NPS use as part of self-regulatory systems draws our attention to prevention as an ongoing activity rather than a discrete moment in time. Young people are unlikely to make a single decision about whether or not they will become an NPS user or non-user but may face multiple opportunities to engage in NPS use. They may initiate use and then stop, or their level of use may vary over time with a ‘user’ also avoiding use on multiple occasions. Viewing these occasions as part of an ongoing system of self-regulation can help reduce our engagement with processes of stigmatisation that encourage delineation of users and non-users and instead encourage a focus on factors that support on-going processes of regulation.

Conceptualising NPS use as part of a self-regulatory system also draws attention to the intersections between regulatory processes at the individual level with regulatory processes at local, national and international levels. From this perspective we can see the operation of compensatory systems acting across societal levels. In other words, in their navigation of the NPS market, young people’s self-regulatory processes are currently having to compensate for a lack of regulation at commercial and Governmental levels.

As highlighted in Study 2 was that in the absence of the typical pathway for commercial commodities (i.e. packaging, adverts, guidance instructions), social cues appeared to be compensating as an information channel for information important to self-regulation. Perceptions about risk and the quality of substances that might typically come from marketing information now come from these social cues. This information is then able to inform young people’s expectations which shape their goals. (Neal, Ballard & Vancouver, 2017) In identifying multiple motivations this research offers useful information about the types of goals that young people considering NPS use need to balance and highlights various cues to the prioritisation of these goals such as the relative importance of social and pleasure motives (See Chapter 8, Section 8.5). Considering these motives in the light of research on dynamic self-regulation and multiple goal pursuit (Neal, Ballard & Vancouver, 2017) such as the multiple goal pursuit model (MGPM: Ballard, Yeo, Loft, et al., 2016) may offer constructive ways to build on this research. The multiple goals pursuit model provides a framework for predicting the effects of goal conflicts. The model includes parameters which have been highlighted as especially relevant to NPS motivations in the current research (See Chapter 8, Section 8.5). For example, key predictors in the MGPM which map onto NPS-related motives are goal type (approach-avoid) prioritisation and uncertainty (i.e. unknown effects of substances).

#### Focusing on markets and motives

With the disappearance of open sales of products marketed as legal highs and the diffusion of specific substances into various different markets the term ‘legal high’ is likely to become less relevant over time. In place of legal highs, the focus increasingly will need to be on unknown and generic substances and the variability of recreational drug products. From this perspective, the key differentiators are the specific markets, rather than specific populations or substances. As markets are developed around the needs of consumers, this brings potential users’ motivations into the foreground. Within the current research, several types of consumer have been noted but two groups have generally predominated; relatively affluent young people and disadvantaged street users. The key attributes which distinguish these markets appears to be quality and price, the thresholds for which appear to be the priority placed on the desire for pleasure and the need to cope (including with addiction).

#### Pleasure and quality

Young people taking part in the research described the shift away from NPS by more affluent users as the result of their ability to afford better quality drugs and the continued use of NPS by homeless users as the result of the low cost of NPS. For people whose choices were limited by poverty, the low cost of NPS was believed to be the primary reason for their use. In contrast, for more affluent users it was the quality of the drugs, not their legal status, that was the most important driver of use. This implies that, had the quality of NPS remained high, many recreational users might have continued consuming them. For people living with deprivation and drug dependency who are targeted by black market dealers, however, the low cost of NPS was thought to be more important than the quality.

Alongside young people’s descriptions of this shift in user types, they also placed a reduced emphasis on references to the pleasurable effects of NPS. Compared to previous research, where the quality of NPS emerged as an important reason for use, in the current research, quality did not emerge as an important theme in young people’s discussions. According to Blackman and Bradley (2017) as the quality of NPS dropped, recreational users seeking pleasurable experiences lost interest in NPS products. This suggests that the lack of emphasis on quality by the young people in the current research may not be reflective of a disinterest in the quality of substances, but that they did not associate good quality with NPS. In focusing on the substance not the market (i.e. the market for good quality recreational drugs) a primary motivation may have been deemphasised (i.e. pleasure which underlies all recreational use of drugs) and the importance of a key modifier deemphasised (i.e. quality).

#### At-risk groups

The link between NPS use and low cost highlights the vulnerability of young people with little disposable income. Within this study, young people highlighted a clear connection between NPS use and their low cost. Particularly for those facing economic pressures, the low cost of NPS was seen a key part of their appeal. Although after the ban, the appeal of low cost appeared to be linked only with disadvantaged homeless users, it should be noted that even young people who are not from disadvantaged backgrounds may be at risk due to low levels of disposable income.

### Considering wider factors

The interactions between NPS and social inequalities draws attention to the need for theorists and interventionists to pay attention to wider factors beyond the psychology of individuals. This section considers in more detail some of the ways we can situate the intervention work undertaken with individuals within a wider context

#### NPS and social inequalities

Throughout the work presented in this thesis, interactions between NPS and social inequalities have been consistently highlighted. Understanding how interventions relate to social and health inequalities is vital to prevent the impact of inequalities thwarting efforts to improve people’s health outcomes. If the social determinants of health and the social determinants of health inequalities are not sufficiently accounted for, ameliorative work tackling poor health outcomes (i.e. the acute and chronic harms of drug use) may not only fail to sustain better outcomes, but also runs the risk of obscuring the link between people’s health outcomes and social inequalities that may lead to the further exacerbation of health inequalities (Holman, et al., 2017).

Although use of NPS in marginalised and deprived populations were noted by study participants prior to the ban, this appeared to be happening alongside NPS use across a range of socio-economic backgrounds. Within a year of the PS Act being introduced, however, the situation seemed to have changed considerably, with many users in higher SES groups responding the legislative intervention by migrating away from NPS, while NPS use became more concentrated within deprived populations (see Chapter 6, Section 6.5.1.2). It is important that interventionists remain aware of the potential for unequal outcomes in response to interventions as a result of people’s differing socio-economic conditions and further emphasis should be placed on assessing the differential effectiveness of interventions across different population subgroups (Jepson, et al., 2010).

The impact of social inequalities become obscured when higher-level structural influences like socioeconomic position become conflated with the proximal causes of behaviour and the personal capacities of individuals. Structural factors are no longer seen as the ‘causes of the causes’ (Marmot, 2005) when they are neglected or given equal status to individual-level psychosocial constructs and personal characteristics (Friedli, 2012; Holman et.al. 2017; Marmot et al., 2010; Popay et al., 2010).

The issue here is the reliance on individual-level factors within models for explaining drug behaviour. By framing drug use as the result of internal psychological and moral deficiencies, explanations of behaviour enable victim blaming, and so facilitate processes of stigmatisation. Internalising explanations for drug use are clearly apparent within UK drugs strategy, which, despite acknowledging that drug misuse is both a cause and consequence of wider factors (including health, employment and housing), goes on to promote approaches which focus on building young people’s personal resilience and confidence to make the right decisions and resist risky behaviours (HM Government, 2017). While the focus on psychological factors frames drug use as the result of personal choice, a moral dimension is also invoked by framing abstinence the as ‘right’ choice.

If interventions are to avoid the perpetuation of processes of stigmatisation, they need to be sensitive to the extent to which they rely on internalised explanations of people’s drug use. In this respect, the social cognition models promoted within this work are problematic. In modelling behaviour as the outcome of rational decision making, these models provide a strongly individualised understanding of behaviour which bear a striking resemblance to the ‘rational consumer’ model presented in UK Government policy papers in which avoidance of drug use is depicted as the outcome of rational decision making (ACMD, 2015; HM Government, 2010; 2016; 2017).

The problem lies in both the neglect of wider factors beyond the individual and the emphasis on conscious rational processes. In framing drug use as a matter of individual choice, responsibility for drug use is clearly placed on the individual and people are expected to be responsible for looking after their own health, and ultimately responsible for mitigating the impact of social inequalities on their health (Friedli, 2013). The focus on personal responsibility serves to shift responsibility for addressing drug harms onto the individual and away from those with the power to shape the social and economic structures that create the conditions of people’s lives (Joseph, 2013). Although the focus on rational decision making in models of social cognition is not a political move, these models nevertheless remain highly compatible with a political agenda that exists in tension with critical perspectives concerned with a social justice agenda. As a consequence, social cognition models such as the TPB have been criticised for their failure to consider wider social factors (Sheeran, Gollwitzer & Bargh, 2013).

The tension between a social justice perspective and the use of social cognition models places the interventionist in a difficult position. As highlighted in the current research, where they offer a good fit with the data and are validated by previous research, there is much potential value to be gained by using such theory in the development of interventions. Use of theory is strongly endorsed in guidelines on behaviour change and drug prevention to aid clarity and evaluation. Moreover, in addition to contributing towards more reliable evidence base, use of theory may also increase the chances of interventions gaining funding and support (NICE, 2007).

#### The need to consider autonomous processes

With regard to neglect of wider factors by social cognition models, some of the difficulty lies in the reliance on conscious rational decision making assumed in these models, and the conflation of motivation with conscious reflective processes. However, this focus is more practical than philosophical. The conflation of motivation with conscious processes in socio-cognitive accounts occurs due to theorists’ interest in the cognitive functions which differentiate one course of action from another, drawing attention to deliberative processes typically associated with conscious reflection.

However, the assumption that such evaluative processes are predominantly conscious is not well supported by the evidence, nor is the assumption strongly backed by socio-cognitive theorists, who readily admit that, except for the most important decisions, people rarely integrate information in the way depicted in the models (e.g. Ryan, 2012). Indeed, the importance of implicit and automatic processes is gaining prominence in the rising popularity of dual-process theories which propose two distinct types of processing, generally conceived of as one rapid, intuitive, and largely subconscious system and one slower, more effortful, and typically conscious system (e.g. Evans, 2003; Kahneman, 2003; Petty & Cacioppo, 1986). Further support for automatic and subconscious processes underlying motivational processes comes from findings which demonstrate that non-conscious goal pursuit shares many of the same features as conscious goal pursuit (Dijksterhuis, Aarts & Chartrand, 2007). If motivation relates to processes which support goal-directed behaviour, and goal-oriented behaviour can be directed by both conscious and subconscious processes, to some extent the issue of conscious awareness diminishes as a concern.

Nevertheless, the issue of intentionality remains. When health risk behaviour is presented as volitional and intentional, it follows that individuals can be held fully responsible for their own health outcomes. For this reason, it is argued that it is important to pay attention to how motivation is depicted within theory, and whether it offers an account that allows for automatic in addition to reflective processes. For this reason, it is proposed that social cognition models need to be expanded to include both constructs that account for wider factors and those which account for automatic processes such as the social influences pathway proposed by the PWM (see Chapter 6 Section 5.5.2.6). It is further proposed that an adapted version of the definition of motivation provided by Schunk, Pintrich, and Meece (2008, p.13 in Ryan, 2013) to reflect automatic processes (italics for emphasis) is used:

Motivation refers to the *automatic* *and* *reflective* processes whereby goal-directed activities are energised, directed and sustained.

This inclusion of automatic and reflective processes would bring our definition of motivation in line with the COM-B model of behaviour presented by Michie, Stralen, & West (201)1 in the behaviour change wheel (BCW), which is a useful tool for mapping behaviour change interventions. Within the BCW, behaviour is conceptualised as the result of a combination of a person’s capability, opportunity and motivation. Capability is proposed to be determined by physical and psychological resources opportunity by social and physical contexts and motivation by both automatic and reflective processes. While the COM-B incorporates a set of psycho-social constructs and associated intervention functions, the model also recognises the importance of structural factors in supporting interventions, and accordingly an outer set of constructs represents policy level factors which can facilitate and constrain modes of intervention.

### Linking with wider strategies

While the BCW encourages a focus on wider factors and structural influences, ultimately, for individual level interventions to contribute to action addressing social inequalities ameliorative work must be united with transformational change. This requires that interventions at the individual level engage with wider drug prevention and harm reduction strategies across societal levels (see Chapter 3 Section 3.7.2.4). For example, this may involve aligning activities with existing intervention action to facilitate mutually reinforcing activities or by improving knowledge exchange across stakeholder groups to find common goals, improve understanding or support advocacy activities.

#### Engaging with young people

With legislative measures insufficient to prevent young people being exposed to NPS, young people effectively become the front line in preventing NPS harms. In the context of a rapidly changing dynamic drugs market, we may be dependent on those who encounter NPS in their everyday lives for the most up-to-date information about what substances are called, which substances are most popular, which are most harmful and how and where they are being consumed. As observed in the shifting situation with ‘legal highs’, where terminology and substance are in flux, and sales are increasingly taking place within hard to access peer-to-peer apps and platforms, creating a shared knowledge base will be vital for the development of effective interventions.

This need for engagement places a premium on collaborative ways of working such as co-production. Co-production engages with communities to work with and alongside them to address issues in partnership with researchers. Although not a new method, support for co-productive approaches is growing (Durose, Beedeejaun, Rees, et al., 2012) and has been used effectively in resilience-based interventions with young people (Hart et. al., 2016). In this context, the concept of resilience is applied from a socio-ecological perspective which conceives of resilience as residing in more than just the individual, but also the communities, environments and social structures in which they are embedded (Hart et. al., 2016; Ungar 2008). This offers an opportunity to find synergy with UK drugs strategy which recommends the use of resilience-based approaches, whilst not remaining limited to an overly individualised conception of drug use and personal responsibility for health.

The contribution of communities can improve outcomes and enhance the effectiveness of research by making it better informed about the preferences and needs of the target population and developing more achievable solutions (Ostrom, 1996). Including young people in the co-produced materials might also improve intervention efficacy as drug prevention interventions which involve peers can be more effective (Brotherhood et. al, 2013; EMCDDA, 2011; James, 2011; Novakovic, Rutter, Ainsworth, et al., 2016; UNODC, 2018) as well as being recommended in prevention guidelines (EMCDDA, 2011; Mentor-ADEPIS, 2014; UNODC, 2018). Young people consulted in the current research also emphasised the importance of interactive, peer-based approaches to intervention, promoting collaboration between researchers and community groups in the creation of social-media-based intervention videos and documentaries.

## An example approach: Multi-level strategy addressing unknown substances

Within the current research, young people recommended the development of informative documentaries and videos focusing on the dubious production and processing methods used by NPS traders and the inconsistent and harmful products created as a result. This form of intervention would offer an ideal opportunity to work collaboratively with young people to co-produce a set of intervention materials acceptable to the target audience.

An intervention centring on unknown and variable drug ingredients would be well placed to dovetail with existing drug-testing services offered at entertainment venues, an intervention the young people involved in this research also endorsed. Based on social marketing techniques the videos could be carefully targeted for appropriate audiences with additional signposting for drug-testing services. By conceiving of the target audience as consumers, social marketing approaches naturally bring the motivations of the target population into the foreground. Originally developed for use with low SES groups, social marketing approaches have been found to work well with populations with low incomes and have been shown to have some positive short- and medium-term outcomes in relation to illicit drug use (Botvin 1997; Ellickson 1990; 2003; Pentz 1989; Sussman 2002).

Although social marketing approaches have also been criticised for focusing on ‘downstream’ behaviour change, more recently authors have put forward the case that these techniques are also suitable for ‘midstream’ and ‘upstream’ approaches (Stead, McDemott, Angus, & Hastings, 2007; Wood, 2019). Social marketing techniques resonate well with advocacy activities and just as they can be used to sell services to users, they can focus on targeting politicians, media figures, community activists, businesses and schools (Gordon, 2013; Kotler, & Lee, 2008).

Engaging young people in knowledge exchange with drug-testing services, entertainment venues and local councils would improve understanding of the barriers and facilitators of both service provision and service uptake. By supporting young people in an advocacy role, the capacities of both the researcher/ interventionist and young people would be developed, while the knowledge of multiple stakeholder groups would be improved. As a consequence, a wider understanding of the influences on young people’s drug-related behaviour (e.g. harm-reduction practices or service uptake) could be better modelled. In this context, the model developed in the current research (see Section 9.3.4) would offer an appropriate tool for the development of theory-based messages encouraging the uptake of drug-testing services at entertainment venues. Given the significance of young people’s relationship with authority in regard to NPS, conducting the work in the context of a community of practice that engaged young people, parents and law enforcement or festival security services could highlight useful targets for intervention. For example, this might include young people’s misperceptions about police disapproval of drug-testing services or parents’ attitudes towards such services).

As part of a wider drug prevention strategy, drug-testing services at entertainment venues typically use engagement with young people as an opportunity to deliver brief harm-reduction and prevention interventions. Furthermore, by improving young people’s engagement with drug testing facilities, the intervention programme could contribute to ongoing data collection by some drug-testing services which is used to inform national and international drug monitoring organisations such as the EMCDDA early warning system (EMCDDA, 2018). The EMCDDA is the primary authority for monitoring the emergence of NPS, providing policymakers with information for the development of laws and policies and alerting national warning systems of emerging threats posed by NPS. The integration of the example approach within a wider perspective is illustrated in Figure 9.4.

Figure 9.4. Integration of the wider perspective

Cognitive attitude

Affective attitude

Self-efficacy

Social norms

Willingness

Intention

Family

Nightclubs

International drug monitoring

system

UK drug strategy

Societal norms

Peers

Community

Cultural norms

Local council

National drug early warning

System

Regulation

Capacity

Motivation

Opportunity

**MICRO**

**MESO**

**EXO**

**MACRO**

NPS use

Reduced drug harms

Healthy development

Festivals

Social determinants of health inequalities

Social determinants of health

Proximal determinants of health

Mass media

Social media

**INDIVIDUAL**

Drug testing services

## Strengths and limitations of the research project

While the strengths and limitations of each study are addressed in the appropriate chapter, this section discusses the strengths and weaknesses of the research project as a whole.

### Strengths

The current research project has a number of strengths. First, while the majority of studies exclusively focusing on young people and NPS are based outside of the UK, the current research is UK-based and is therefore directly relevant to young people in this country (reviewed in Chapter 4). As the wider legislative context and cultural norms appear to have an important influence on people’s reasons for using or not using NPS (e.g. greater use of mandatory drug testing in the USA) a contextually appropriate study is of value.

Second, the inclusion of theory in the study design has brought attention to key areas of young people’s perceptions that might have been less salient without the use of theory. For example, the inclusion of questions based on the prototype constructs of the PWM drew our attention to important social processes and the issue of stigmatisation. The use of theory also aided the alignment of the work with a well-developed evidence base that can support intervention development. In addition, the use of theory also ensured that the work was in line with key drug prevention organisations that recommend the use of theory in intervention design.

Third, in incorporating the use of an inductive approach to data analysis, the key themes emerging from the data were not limited to existing theoretical constructs and important aspects of the context of young people’s lives were made salient. In contrast to studies based on older populations, this included the importance of social and identity influences in shaping young people’s perceptions of NPS use and their relationship with authority.

Fourth, by working with local community groups, the participant sample was more diverse than if a typical student population had been used and the generalisability of the findings is therefore more likely to have been improved. In addition, by working with local young people to determine the nature of the research project the relevance of the project to the target population was increased.

### Weaknesses

The research project also has several limitations. First, the research was conducted in specific community group settings with a relatively small number of participants. While engagement with community groups offered several advantages, the use of convenience sampling also represents a limitation as participants were not selected randomly and therefore the sample might not be entirely representative of the target population. There are various factors that might limit the external validity and generalisability of the findings to the general population. For example, the groups each had specific agendas (e.g. health promotion, raising awareness of mental health issues, youth empowerment) which may have influenced their perspectives. As community group peer-mentors, several participants had received advocacy and social awareness training, which may have altered their perspective compared with that of an average young person their age. Also, the sample included a high proportion of females, while the majority of NPS users are male. This might limit the generalisability of the findings to a typical NPS user. The sample included a higher proportion of people with some experience of illicit drug use than estimates for their age group and therefore may represent a population at greater than average risk of NPS use. Nonetheless, there were more NPS non-users than users in the focus groups.

Second, although the implementation of the PS Act during the course of the project presented a unique opportunity, the project was initially conceived and designed prior to the announcement of the introduction of the Act. Consequently, the study designs for Studies 1 and 2 were adapted for use as a comparative study rather than purposefully designed as such from the outset. As a result, the comparative aspect of the project suffers from some methodological weaknesses. In particular, the design was cross-sectional and individuals’ attitudes and intentions toward NPS use were not measured, so attitudes could only be inferred from the group data. This limited the extent to which pre- and post-ban differences could be measured, as well as limiting the extent to which individual opinions could be related to attitudes, intentions or past behaviour. The use of convenience sampling meant that the pre- and post-ban samples were largely comprised of different participants, and although the samples were drawn from similar populations, one community group was not running at the time of the second study. Consequently, an alternative group was used which may have reduced the similarity of the pre- and post-ban samples. The different participants in the pre- and post-ban focus groups could, in part, account for differences in the expressed views towards NPS use and non-use.

Thirdly, the research did not include any direct or proxy measure of the target behaviour, relying entirely on self-reported measures. This may have introduced bias as result of social desirability. The effect of social desirability may have been limited by the use of self-administered and anonymous questionnaires, but nevertheless, the social group dynamics and sensitive nature of the topic may have influenced social desirably concerns.

Fourth, the target behaviour was not well specified as the terminology used (i.e. legal highs) covered such a broad range of substances. The lack of clarity may reduce the effectiveness of interventions as the specificity of target behaviour can affect the efficacy of interventions. In addition, young people’s shifting perceptions of the term as a result of the changing legislative context may have further affected the clarity of the intended target behaviour. Furthermore, as the problematic nature of the term ‘legal highs’ is likely to increase in time, this limits the applicability of the study findings in the development of future interventions.

Fifth, for pragmatic reasons the decision was made to restrict the literature review to generalised terms for NPS and ‘legal highs’ rather than extending the inclusion criteria to encompass searches of the names of specific substances or substance categories (e.g. synthetic stimulants, synthetic cannabinoids etc.). As a consequence, many important sources of literature were missed from the review. Had a more specific approach to terminology been used highly relevant research would have been found much earlier in the research process enabling greater refinement of the research at vital stages of development. The reliance on generic terminology in the earlier stages of the research reflects the authors' relative naivety of the research topic, which had been determined through consultation with young people in the local community. While community engagement is vital for exposing important health concerns that may be under-researched by health psychologists, conducting in-depth research on a topic relatively unfamiliar to the researcher requires rapid familiarisation with the core issues involved. On reflection, the research would have benefited from an initial scoping review to better identify key texts, topical issues and useful contacts outside of a health psychology perspective. This would have enabled the identification of the most popular NPS and important clusters of research organised around specific substances such as, 2-FA, 4-FA, 4-MEC, 4-MMC, BVP, BZP, MPV, MXE, JWH-018, In addition, the importance of research examining ‘historical’ NPS such as ketamine, GHB and mephedrone that are excluded from many of the more recent definitions would have been recognised sooner. A more effective approach to the literature review would have been to conduct searches of the specific names of popular NPS in addition to the generic NPS terms and a MESH search of NPS across each of the major functional NPS classes i.e. stimulant/cathinone; GABA activating; hallucinogen, dissociative, cannabinoid, opioid and other/unspecified/uncategorised NPS.

Finally, due to the time restrictions of the project and the complexity of the changing situation regarding the legal context of NPS, it was not possible to conduct a quantitative study to test the predictive power of the identified model constructs. Including a quantitative investigation of the model outlined would have provided a valuable validation process (i.e. triangulation of findings) that would offer a more robust tool for use in future interventions.

## Implications for research

Exploration of young people’s perceptions of NPS and NPS behaviour has supported the identification of a model that is relevant to the target behaviour, however, its validity would be greatly improved through a quantitative test of its predictive power. Therefore, an NPS survey based on the model identified constructs and associated salient beliefs would be an appropriate next step following this project. However, as has been noted, the changing situation regarding the nature of NPS and how they are perceived by young people as drug markets reach a new equilibrium may limit the relevance of interventions targeting the group of substances previously known as ‘legal highs’. A more beneficial line of research for intervention development would be to continue to track young people’s perceptions of the changing drug markets, with a particular focus on the common names by which popular NPS and ‘generic’ (i.e. variable mixtures of power drugs and smoking mixtures) substances are known. Without a clear understanding of substances, who uses them and how, intervention effectiveness will be heavily compromised. It was noted during the current research that young people were often confused about the legal status of various substances, and the situation became more confusing over time. Participants demonstrated particular confusion around the legal status of nitrous oxide, and whether it constituted a legal high. Given that the harm profile of nitrous oxide is lower than many of the forms of NPS previously referred to as legal highs (EMCDDA, 2018) such confusion may have negative implications if ‘legal highs’ gain a growing reputation for being less harmful than other drugs.

Another area of concern raised by participants throughout the study was the increasing use of social media apps (in particular Snapchat and Instagram) for dealing substances including NPS. Participants were particularly concerned due to the growing confidence displayed by dealers who appeared to believe their transactions were protected by encryption and closed membership groups. Although this research project did not focus on drug dealing, this was described by participants a new dynamic in the context of recreational drugs and is worthy of attention.

Although this research focuses explicitly on young people in the general population, from an ethical perspective it is important to highlight the need for research with populations most at risk. Disadvantaged and marginalised groups now appear to be facing the greatest risks in relation to NPS and it is therefore vital that these groups should be represented in research, practice and policy. It is also important to note that there is very little research examining the very young users identified by participants, as well as the young people who were described as using NPS, but not illicit drugs. As these groups appear to have reduced in visibility, the assumption here is that their NPS use has reduced following the ban, but it is important to verify whether this is the case. It is unknown what the long-term impacts are for the children who have used NPS during formative stages of their development. Early initiation of drug use has been linked with higher levels of drug dependency and a variety of negative outcomes later in life (Behrendt, Wittchen, Hőfler, et. al., 2009; Chen, Sorr & Anthony, 2009). The apparent disappearance of these users does not mean they are no longer at-risk for long-term negative outcomes.

Concerning the findings of the current research project, the example intervention approach laid out would be the natural evolution of this work and a recommended avenue for future research. The suggested next step would be to test the viability of the model specified in this project in the context of drug-testing services in entertainment settings. In addition, this work highlighted the particular importance of social influences, relationships with authority and identity concerns (including stigmatising identities) for the target population. Exploring these areas in relation to young people’s perceptions of drug testing services at entertainment venues would offer a fruitful direction for further research.

## Conclusions

Throughout the research, the complexity of the NPS markets and challenges they pose to communities, researchers, practitioners and authorities have become apparent. Furthermore, the situation with NPS has changed considerably since the start of the current research project, with changes in the nature of the substances themselves, patterns of prevalence and user populations as well as young people’s perceptions of them.

Many of these changes can be linked to the introduction of the PS Act which has resulted in the convergence of NPS markets with those of illicit drugs, in addition to several other unintended negative consequences. These include the displacement of NPS use onto other substances and a number of increased risks to users as well as increased stigmatisation of vulnerable users. These unintended consequences draw attention to the systemic nature of drugs markets and the way in which the PS Act has interacted with processes which exacerbate social inequalities.

The changing dynamics of NPS markets and users was apparent in young people’s perceptions of NPS. This led to the conclusion that, in the absence of formal regulation of NPS, young people’s perceptions of NPS users offer important social cues about the safety and desirability of NPS use. However, the possibility that more advantaged young people’s reduction in NPS use might be partially attributable to processes of stigmatisation involving less advantaged users which were stimulated by the implementation of the PS Act raises important ethical questions.

While the social processes observed in the current research point toward the suitability of social cognition models, particularly the prototype willingness model, for modelling young people’s NPS behaviour, their similarity to the strongly individualising perspective of UK drugs strategy is problematic. With internalised explanations of drug use enabling processes of stigmatisation, it is essential that these models are used as part of wider harm-reduction and prevention strategies that adopt a systems perspective, taking into account wider contextual factors and adopting a multi-level strategy.

Although the significant changes to the NPS market which have occurred over the last three years call into question the utility of developing interventions using the term ‘legal highs’, NPS continue to be a cause for concern. The emergence of NPS was a symptom of fundamental changes to drug production, distribution and marketing that have irrevocably altered the nature of the market for recreational drugs. The innovation in production and distribution methods prompted by the technological developments that accompanied the growth of the internet has made the large-scale production and distribution of low-cost psychoactive drugs an ongoing feature of the global drugs market.

Furthermore, the arms race between authorities and producers has resulted in an unprecedented diversity of substances that has transformed recreational drug markets from a relatively small number of commonly known and relatively well-understood substances to hundreds of poorly understood psychoactive chemicals. As a result of these changes, the recreational drugs market is proving more diverse and resilient than ever before. Moving forward, greater variability is expected in the ingredients, potency and consistency of many psychoactive products, including those sold under the guise of traditional illicit drugs, in addition to increased sales of generic products of mixed and variable ingredients sold under non-specific names.

Inevitably, all recreational drug interventions must adapt to new market conditions. Therefore, it is not so much a question of whether we need NPS-specific interventions, but a question of how drug interventions will adapt to account for the market changes signified by NPS.

1. Percentage of the 30 studies within the reasons for use set citing one or more reasons in this theme [↑](#footnote-ref-1)
2. Percentage of the 30 studies within the reasons for use set citing each unique reason [↑](#footnote-ref-2)
3. Percentage of the 30 studies within the reasons for use set citing one or more reasons in this theme [↑](#footnote-ref-3)
4. Percentage of the 30 studies within the reasons for use set citing each unique reason [↑](#footnote-ref-4)
5. Percentage of the 30 studies within the reasons for use set citing one or more reasons in this theme [↑](#footnote-ref-5)
6. Percentage of the 30 studies within the reasons for use set citing each unique reason [↑](#footnote-ref-6)
7. Percentage of the 10 studies within the reasons for non-use set citing one or more reasons in this theme [↑](#footnote-ref-7)
8. Percentage of the 10 studies within the reasons for non-use set citing each unique reason [↑](#footnote-ref-8)
9. Note: some participants reported dual occupations [↑](#footnote-ref-9)