



Research paper

Adding Spice to the Porridge¹: The development of a synthetic cannabinoid market in an English prison



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ARTICLE INFO

Article history:

Received 9 May 2016

Received in revised form 26 September 2016

Accepted 18 October 2016

Keywords:

Synthetic cannabinoids

Mandatory drug tests

Prisons

New psychoactive substances

ABSTRACT

Background: In 2014, the annual report of the Her Majesty's Chief Inspector of Prisons (HMIP) for England and Wales raised concerns regarding New Psychoactive Substance (NPS) use in custody, specifically the consumption of synthetic cannabinoids. To date, however, the use of these substances in prison populations, and the markets that have emerged to facilitate it, have been under-researched.

Methods: Our research was conducted in an English adult male prison using multi-method techniques. These included: in-depth interviews and focus groups with prison staff and prisoners; observations of prisoner-led focus groups, workshops and restorative justice circles involving discussion of synthetic cannabinoid use and markets; and analysis of routinely collected prison data measuring drug seizures, incidents of violence and incidents of self-harm.

Results: The findings highlight: (1) the scale and nature of synthetic cannabinoid markets in a custodial setting and the motivations for establishing them; (2) the nature and motivations for synthetic cannabinoids use in prison; and (3) the impact synthetic cannabinoid markets in this setting have upon prisoners, the prison system and the wider criminal justice system. The policy implications of the stated motivations for use and reported problems are discussed in relation to both prison and community settings, and the recently implemented Psychoactive Substance Act (2016).

Conclusion: The paper concludes that the rise in synthetic cannabinoid use in custody and the size of the drug market are posing significant challenges to the management of offenders; including healthcare, appropriate detection techniques, license recall and sanctions for both use and supply. We argue that the primary motivation for consumption in this setting is the avoidance of drug use detection, and that this is likely to supersede other motivations for consumption in the future. We propose a revision of the use of mandatory drug tests (MDTs) both in prisons and in the management of offenders in the community.

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'NPS [synthetic cannabinoids] have created significant additional harm and are now the most serious threat to the safety and security of the prison system that our inspections identify.' (HMIP, 2015a: 7)

Introduction

The number of new psychoactive substances (NPS) – illicit substances designed to mimic the effects of traditional drugs – identified globally has increased exponentially, with latest estimates ranging between 500–600 substances (EMCDDA, 2016a; UNODC, 2015). Synthetic cannabinoids comprise the largest group identified, representing about a third (EMCDDA, 2015; UNODC, 2015). They mimic the effects of the main psychoactive substance found in cannabis, Tetrahydrocannabinol (THC), and attach to cannabinoid receptors in humans (UNODC, 2011). In England, the Home Office Forensic Early Warning System routinely analyse test purchases and seized samples. In 2015, samples analysed from headshops, online vendors and 10 prisons found the

¹ 'Porridge' is British slang for a prison sentence. E.g. 'Doing his porridge'. The term is most commonly thought to be an allusion to the fact that porridge is, or used to be, a common food in prison. The term is also thought to be a pun on the much older slang word for prison, 'stir'.

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most commonly identified synthetic cannabinoids were 5F-AKB-48 and 5F-PB22 (Home Office, 2015). The majority of the substances recorded were mixtures of more than one different compound. In England and Wales, an initial popular brand of synthetic cannabinoids was *Spice*. The original version (JWH-018) was banned in 2009. Common brand names at the time of writing include *Annihilation*, *Hipster*, *Green Joker*, *Kronic*, *Pandora's Box Reborn* and *Vertex Space Cadet*.

While the number of different NPS and synthetic cannabinoids identified has grown rapidly, levels of consumption recorded in general population surveys in different continents remain relatively low (see AIHW, 2014; European Commission, 2014; Home Office, 2012; Johnston, O'Malley, Miech, Bachman, & Schulenberg, 2016), especially when compared with traditional legal substances. Our current understanding of NPS consumption and the motivations for use is largely taken from general household populations or groups of young people and clubbers (see, for example, AIHW, 2014; Lader, 2015; Johnston et al., 2016; Measham, Wood, Dargan, & Moore, 2011; Measham, Moore, & Østergaard, 2011). In this paper, we focus upon a user group – male adult prisoners – who are absent in conventional drugs survey research. In doing so, we document how an established and lucrative prison drugs market provides easy access to one category of NPS, synthetic cannabinoids. We describe the primary motivations for the consumption of synthetic cannabinoids in this setting and the impact consumption has upon users' health, recovery journeys and the prison regime. We argue that the primary motivation for the consumption of synthetic cannabinoids in prison is the avoidance of detection of drug use. We go on to document a range of harms associated with the consumption of synthetic cannabinoids in this environment and suggest that the well-being of prisoners and prison staff is jeopardized by current policies. In this respect, we recommend policy responses designed to reduce drug-related harms in prison.

The growth in the manufacture of NPS, their wide availability and their subsequent use have had a significant global impact on drug policy in the past decade (for a useful review see EMCDDA, 2016b). One of the most recent policy responses occurred in the UK on May 26th 2016 with the implementation of the Psychoactive Substances Act. The main objective of the Act is to restrict availability by preventing shops and websites trading in NPS or 'legal highs', as they are commonly referred to in the UK. The Act follows in the footsteps of similar prohibition legislation in Ireland and Poland. Under this legislation, the production, supply and/or possession with the intent to supply a psychoactive substance if it produces a psychoactive effect² are criminalised. Possession of a psychoactive substance is not an offence, except in a 'custodial institution' (e.g. adult prison or young offender institute), punishable with an additional sentence of up to two years. This exception reflects recent concerns and debates about the extent of use and related harms in prisons in England and Wales (see Centre for Social Justice, 2015; HMIP, 2014, 2015a, 2015b, 2016; RAPt, 2015; User Voice, 2016). In discussing the problem in prisons, HMIP reports use the term NPS to refer to one particular category, synthetic cannabinoids. In prisons in England and Wales, the term *Spice* or *Mamba*, making reference to another popular brand, *Black Mamba*, are used generically to refer to a wide variety of products containing synthetic cannabinoids. Our paper provides a case study of the use of synthetic cannabinoids and describes an established synthetic cannabinoids market in an adult male

English prison. We discuss the likely impact the new Act may have upon supply and use in this setting.

We commence with a brief review of contemporary research regarding the consumption of synthetic cannabinoids in general populations in England and Wales. We go on to sketch out existing knowledge on drug use in prisons in England and Wales, the motivations for it and the harms connected to it, focusing on synthetic cannabinoids. We argue that while there is a fledgling body of research beginning to explore the consumption of synthetic cannabinoids among more vulnerable populations, including the prison population, further research is required to understand this emerging trend. Following this, we outline our mixed methods strategy and present the findings from our research. We assert that the consumption of synthetic cannabinoids presents distinctive problems for the offender population and the management of them both within and beyond the prison environment. We conclude with a discussion of the wider implications of our results for criminal justice and drug policies.

Background and context

As noted, there has been an upward trend in the number of NPS detected globally with synthetic cannabinoids being the largest group identified (EMCDDA, 2016a; UNODC, 2015). Yet, levels of consumption across the world are relatively low in general population surveys (AIHW, 2014; European Commission, 2014; Home Office, 2012; Johnston et al., 2016). For instance, past year prevalence of synthetic cannabinoids in the general household population in the 2011/12 Crime Survey for England and Wales – the last time data was collected about this substance – stood at 0.1% for adults aged 16–59 (Home Office, 2012). In a recent review of international research, NEPTUNE (2015) pinpoint the main motivations among general population recreational drug users for the consumption of all types of NPS as price, purity, availability, desired effects and legal status (see also Home Office, 2014). One of the shortcomings of current NPS research is it has largely drawn its samples from recreational drug using populations, including clubbers, LGBT communities and young people (Castellanos, Singh, Thornton, Avila, & Moreno, 2011; Champion, Teesson, & Newton, 2016; European Commission, 2011, 2014; Measham et al., 2011; Measham & Moore, 2009; Winstock, 2011; Wood, Measham, & Dargan, 2012; Wood, Hunter, Measham, & Dargan, 2012), and via online or household surveys (AIHW, 2014; Carhart-Harris, King, & Nutt, 2011; Global Drug Survey, 2015; Home Office, 2012). Relying on data from these samples limits existing knowledge because they exclude populations who are more likely to be dependent or problematic users of these substances, for example, the homeless and those incarcerated. Moreover, the motivations for NPS consumption for these users may differ from other user groups. For instance, researchers in Australia and the US have found that those subject to regular MDTs use synthetic cannabinoids because of their non-detectable nature (see Barratt, Cakic, & Lenton, 2013; Bebarata, Ramirez, & Varney, 2012; Perrone et al., 2013). This paper similarly focuses on the consumption of synthetic cannabinoids and the motivations for use within a specific subpopulation, in this case, adult male prisoners in an English prison.

The consumption of drugs in prisons in England and Wales is not a new phenomenon. Djemil (2008) argues it is widespread, forming a fundamental part of prison life. Researchers have previously found levels of drugs consumption to be extremely high. Edgar and O'Donnell (1998), for example, reported that 75% of prisoners had taken drugs in prison. Wilkinson, Hucklesby, Pearson, Butler, & Hill (2003) also found a similar level of drugs consumption (70%). Drugs typically taken in prison are those which provide depressant effects, cannabis and

² Alcohol, caffeine and nicotine are exempt. The Secretary of State can make additional exemptions after consultation with the Advisory Council on the Misuse of Drugs. Medicinal products, as defined by the Human Medicines Regulations (2012), and drugs already controlled by the Misuse of Drugs Act (1971) are also exempt.

heroin, and to a lesser extent diverted medications (e.g. Benzodiazepines, opioid analgesics) (see Edgar & O'Donnell, 1998; Penfold, Turnbull, & Webster, 2005; Singleton, Meltzer, & Gatward, 1998; Wilkinson et al., 2003). More recently, evidence suggests that patterns of drug use in prisons are changing from these traditional illegal substances and diverted medications to synthetic cannabinoids. Analysing drug seizure data from prisons in England and Wales, the Centre for Social Justice (2015) concluded that the number of synthetic cannabinoids seized has increased rapidly. In 2010 there were 15 recorded seizures, by the first seven months of 2014, this had risen to 430. Simultaneously, seizures of traditional drugs decreased. These data suggest prison drugs markets are transforming and that the consumption of synthetic cannabinoids is growing. Indeed, the 2014 annual report of Her Majesty's Inspectorate of Prisons (HMIP, 2014) was unequivocal in its claim that synthetic cannabinoids had become entrenched in the prison system in England and Wales. Two years later, the current Inspector of Prisons asserted they are even more prevalent and are having a 'dramatic and destabilising effect' on prisons and prisoners (HMIP, 2016: 8). As we outline below, synthetic cannabinoids are perceived to pose significant problems connected to violence, self-harm, suicide and mental health issues. Yet, compared to general population studies, there is a lack of research with this population. Little is known about this new drugs market, for example, its scale, how it is established and operates, and its profitability. Yet, previous research suggests it is a lucrative business. Crewe (2005), for instance, argues substances in prison are sold for three to four times their street value. Nevertheless, studies of any form of prison drug dealing are rare (Crewe, 2006; Tompkins, 2016). In this respect, our research fills this knowledge gap in providing a picture of how an established synthetic cannabinoids market operates in an English prison.

The few studies that have been undertaken with the prison population report that *Spice* is increasingly becoming the 'drug of choice' for prisoners, estimating that between sixty to ninety per cent of the prison population have used it in prison (Centre for Social Justice, 2015; HMIP, 2015b). A recent survey of 684 male prisoners across nine prisons in England and Wales stated '... it can be estimated with some confidence that over half of prisoners in our survey had used *Spice* in prison.' (User Voice, 2016: 16). Furthermore, it has been argued many prisoners are regular users (Baker, 2015; Centre for Social Justice, 2015; User Voice, 2016). The User Voice report, for instance, found past month use of synthetic cannabinoids by one in three prisoners. These levels of consumption are remarkable given, at the time of writing, there are over 85,000 people residing in prisons in England and Wales (Howard League for Penal Reform, 2016). Prevalence is substantially higher than general population estimates. Using the figure recorded by the 2011/12 Crime Survey for England and Wales (Home Office, 2012) approximately 36,000 (0.1%) adults aged 16–59 reported past year use of synthetic cannabinoids. Prison research estimates make it conceivable that there are more users of synthetic cannabinoids in prisons in England and Wales than in the general population. Even taking the lower end of the estimate (60%), this equates to around 51,000 prisoners in England and Wales using synthetic cannabinoids while in prison. Evidently, there is a disparity between general and prison population estimates. Our paper begins to explore this, describing how a synthetic cannabinoids drug market operates in an English prison, and the extent and nature of consumption, together with the motivations for it within this setting.

Researchers have identified a range of motivations for drug use in prisons in England and Wales (see Wheatley, 2007 for an overview and useful typology). The most persistent and dominant motivations are boredom and escapism, others include relaxation,

addiction and avoiding drug use detection in MDTs³ (Boys et al., 2002; Cave, 2014; Cope, 2003; Hassan, 1996; Penfold et al., 2005; RApT, 2015; Swann & James, 1998; Walker, 2015; User Voice, 2016; Wilkinson et al., 2003). Many link these motivations to the prison environment and some argue that prison life can exacerbate drug use (see Stark, Herrmann, Ehrhardt, & Bienzle, 2006; Swann & James, 1998; Wheatley, 2007). Similar motivations for the consumption of synthetic cannabinoids in this environment have been found. Walker (2015: 18–19) concluded prisoners admit to using *Spice* to 'clear their mind', 'manipulate time', and 'escape the basic confines of prison life'. These findings chime with the pioneering work of Cohen and Taylor (1976) who discuss drug use as a form of 'mindscaping' to remove oneself from a current situation. Similar assertions are made in the recent User Voice report 'Bird⁴ Killer' in which over half (54%) of drug users in prison stated 'boredom' as a reason for consumption and many noted how *Spice* 'kills time' and 'makes prison life more bearable' (User Voice, 2016). Addiction has also been identified as a key reason for the consumption of synthetic cannabinoids in prisons, with some prisoners describing how their patterns of use were habitual, 'like a crack addiction' (RApT, 2015: 4). For example, Baker (2015) reported that 20% of his sample of male prisoners perceived themselves to be addicted to synthetic cannabinoids. Perhaps one of the over-riding initial motivations for the consumption of these substances is the avoidance of a positive MDT and the sanctions that will be imposed. User Voice (2016) identified this as the most widely stated motivation (69%) for the consumption of synthetic cannabinoids in prisons. Indeed, researchers have found switching to substances that are not detectable in MDTs to be common practice for drug users in this setting (see Djemil, 2008; Farrell, Singleton, & Strang, 2000; Singleton et al., 2005; Singleton, 2008). Cannabis users, for example, have reported starting to consume heroin in prison because opiates remain in blood, urine or saliva samples for a much shorter period than cannabis and, therefore, are less likely to be detected in random MDTs (see Singleton, 2008; Woodall, 2011). It has been argued this is a key driver for synthetic cannabinoids consumption among the prison population, as well as their less detectable smell compared to cannabis (Home Office, 2014; NEPTUNE, 2015; RApT, 2015; Walker, 2015). We now go on to explore the impact of synthetic cannabinoids upon the prison system in England and Wales.

The 2014/15 annual report of HMIP (HMIP, 2015a: 34) recognised for the first time a link between synthetic cannabinoids consumption and an unprecedented increase (38%) in serious assaults in adult male prisons between 2012/13 and 2013/14:

'The increase in the use of new psychoactive substances [synthetic cannabinoids] was a significant factor in the increase in violent incidents in many prisons – either directly as a result of prisoners being under the influence of these drugs or in increased bullying due to drug debts.'

³ MDTs were introduced in prisons in England and Wales in 1996. Under Section 16A of the Prison Act 1952 and Prison Rule 50 YOI Rule 53, they are implemented under five categories: 1. Prisoners selected on a strictly random basis; 2. Testing when a prison has reason to believe a prisoner has misused drugs; 3. Risk assessment testing when a prisoner is being considered for a privilege such as Release on Temporary Licence, or a job where a high degree of trust is to be granted; 4. Selection on a frequent testing programme due to previous drug misuse; 5. Testing on reception. Disciplinary action may result from a positive test under Prison Rule 51(9) or YOI Rule 55(10) (Criminal Justice and Courts Bill, 2015. Fact sheet: Drug testing in prisons. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/322190/fact-sheet-drug-testing-in-prisons.pdf Accessed 1st May 2016).

⁴ The term 'doing Bird' is slang for 'doing time in prison'. It emanates from London's Cockney rhyming slang "bird-lime" meaning time.

Similar escalations in the incidents of violence have been documented in subsequent annual reports. Most recently, the 2016 report recorded increases on the previous year of 27% for the number of assaults and an increase of 31% for serious assaults (HMIP, 2016). Violence in this context not only potentially affects all prisoners, but staff too. The Ministry of Justice documented a 36% rise (from 3640 to 4963 incidents) in violence against staff between 2015 and 2016 (Ministry of Justice, 2016a). Furthermore, similar percentage increases have been recorded for self-harm (25%) and suicides (27%) (see also Prisons and Probations Ombudsman, 2015; Ministry of Justice, 2016a). All of these increases are primarily attributed to the consumption of synthetic cannabinoids in prisons. As we go on to demonstrate in our findings, the development of a synthetic cannabinoids market in the prison we studied contributed to incidents of violence in a number of ways.

A range of health and well-being harms among general population users, associated with acute intoxication and chronic levels of consumption, have been identified in respect of synthetic cannabinoids (see Barratt et al., 2013; Bebarta et al., 2012; Castellanos et al., 2011; Every-Palmer, 2010, 2011; Harris & Brown, 2013; Hurst, Loeffler, & McLay, 2011; Thomas, Bliss, & Malik, 2012; Van Der Veer & Friday, 2011; Zimmermann et al., 2009). They include addiction, aggression, agitation, depression, hallucinations, muscle spasms, paranoia, psychosis, self-harm, 'fitting', seizures and suicidal thoughts. As Castellanos et al. (2011) note, users report drug effects are variable and unpredictable, even when using the same brand.⁵ However, there has been a lack of research exploring how they affect users in prison, many of whom are likely to have a history of drug dependency and existing mental health concerns. In England and Wales, it has been estimated that 70% of prisoners are drug dependent on entering prison (House of Commons Home Affairs Committee, 2013). Furthermore, the Prison Reform Trust (2016) found around three-quarters of prisoners in England and Wales have pre-existing mental health problems with many suffering from two or more mental health conditions, and around 20% having four or five major mental health disorders (see also Birmingham, 2003). Moreover, levels of psychiatric disorders among the male prison population are estimated to be 14 times greater than in the general population (Singleton et al., 1998). Given the potential for synthetic cannabinoids to trigger mental health issues in the general population, reports of high levels of consumption among the prison population are a significant concern, especially because of their propensity for addiction and pre-existing mental health conditions. Papanti et al. provide a systematic review of the literature regarding synthetic cannabinoids and related psychopathological issues. They argue that:

'Although a clear causal link may not be here identified, the available evidence suggests that SC [synthetic cannabinoids] can trigger the onset of acute psychosis in vulnerable individuals and/or the exacerbation of psychotic episodes in those with a previous psychiatric history.' (Papanti et al., 2013: 379)

In summary, we have argued that our knowledge of the prevalence, motivations and harms related to synthetic cannabinoids and other NPS use is largely skewed towards the general population and recreational drug users. The prison population

represents a subgroup for which further research is required. The small body of current prison research in England (see Baker, 2015; Centre for Social Justice, 2015; RAPt, 2015; User Voice, 2016; Walker, 2015) suggests rates of consumption of synthetic cannabinoids are much greater than in the general population, as is the potential for harm in this setting. Previous researchers have examined drug use, the motivations for it and to a lesser extent drug markets in prisons in England and Wales. However, it appears a transformation may be occurring in which the consumption of synthetic cannabinoids is replacing traditional drugs (e.g. cannabis and heroin). Even though there is a small emerging body of evidence regarding the consumption of synthetic cannabinoids in prisons in England (see the Centre for Social Justice, 2015; User Voice, 2016), more is necessary to contribute further to our knowledge of levels of prevalence and patterns of use, as well as the motivations for consumption in this setting. Furthermore, prison drug markets appear to be changing (HMIP, 2015b) and little is known about these new markets, for example, their magnitude, profitability and how they establish and operate. Our paper makes an important contribution to existing knowledge about the consumption of synthetic cannabinoids among vulnerable and drug dependent populations, and in particular, our understanding of synthetic cannabinoid markets in custodial settings.

Methodology

The research took place in a category B⁶ local⁷ English prison for adult males, over a six-month period between May and October 2015. The research was directly commissioned and ethically approved by the prison.⁸ It was initiated as part of the prisons wider response⁹ to a variety of indicators suggesting that synthetic cannabinoids were affecting prisoners, and the management and day to day operation of the prison. This included a substantial growth in recorded seizures of synthetic cannabinoids and a range of serious incidents involving prisoners and staff, perceived to be related to these substances.

We employed a mixed methods strategy, however, our approach largely generated data in the ethnographic tradition. We analysed existing quantitative data provided by the prison regarding recorded prison drug seizures. In addition, we undertook

⁶ Prisoner security categories in England consist of one of four classifications assigned to every adult prisoner (aged 21 and over) for the purposes of allocating them to an appropriate prison. The categories are based upon the severity of the crime and the risk posed should the person escape. These categories are derived from a combination of the type of crime committed, the length of sentence, the likelihood of escape, and the danger to the public if they were to escape. For adult male prisoners, there are four security categories: Category A—Prisoners whose escape would be highly dangerous to the public or the police or the security of the State and for whom the aim must be to make escape impossible. Category B—Prisoners for whom the very highest conditions of security are not necessary but for whom escape must be made very difficult. Category C—Prisoners who cannot be trusted in open conditions but who do not have the resources and will to make a determined escape attempt. Category D—Prisoners who present a low risk, can reasonably be trusted in open conditions and for whom open conditions are appropriate (see Grimwood, 2015).

⁷ The term 'local' means that this prison holds people on remand to the local courts as well as sentenced prisoners.

⁸ Ethical approval was subsequently obtained from the university and local authority research governance.

⁹ The prison viewed itself as leading the way in terms of innovative responses to synthetic cannabinoids use in prisons. In addition to commissioning the research, they were working with chemists in developing new methods of testing drug seizures and urine samples. They had also established an 'NPS basic wing' for prisoners caught in possession or 'under the influence' of synthetic cannabinoids. They also developed restorative justice circles, awareness training for staff and prisoners and a peer recovery mentoring scheme that were focused on synthetic cannabinoid use.

⁵ Often brand names are retained, but the contents of products can vary. For instance, some products may comprise different types and amounts of synthetic cannabinoids. Regarding the latter, this may be a result of the manufacturing process leading to 'hot spots', concentrations of synthetic cannabinoids in plant matter.

observations of the prison visiting area, viewing video footage of 'bodycam' recordings of prison staff dealing with prisoners under the influence of synthetic cannabinoids, and observing and participating in NPS awareness workshops and restorative justice circles in which prisoners and prison staff discussed their experiences of synthetic cannabinoids and the impact of them. These components of the research were undertaken prior to collection of data via individual or focus group interviews to ensure that we were as informed as we could be about the situation and to establish relationships with prisoners and prison staff.

We then collected further data via formal face-to-face, semi-structured interviews with 19 prison staff (15 male, 4 female). They were purposively sampled to ensure they incorporated a range of different roles thereby providing a variety of perspectives. These interviewees included duty managers and staff working in or responsible for nursing, recovery wings, programmes and training, prison visits, security and operations, cell searches, mandatory drug testing and ex-prisoners employed as recovery mentors. Semi-structured interviews were also conducted with seven prisoners¹⁰ and a further twenty prisoners participating in four focus groups. The number of participants in focus groups ranged between three to six prisoners. Prisoner interviewees were aged from the mid-20s to mid-50s; 25 were white British and two were Black British. Participation was voluntary and participants gave informed consent.¹¹ Prisoners were also purposively sampled. They were accessed through the substance use recovery teams and the 'NPS basic wing'.¹² Staff in these teams informed prisoners on their caseloads about the research. We asked staff to ensure anyone referred to us was experienced in synthetic cannabinoid use and included some who had been caught dealing or bringing synthetic cannabinoids into the prison. We also requested that prisoners were selected from different wings of the prison and included those who had reported violence, debt and mental health effects linked to the consumption of synthetic cannabinoids. One of the four focus groups consisted of three peer recovery mentors who were responsible for delivering many of the interventions on the NPS basic wing, such as, awareness sessions and restorative justice circles. Hence, they were also selected for their in-depth knowledge. All prisoners interviewed had used synthetic cannabinoids in custody and many of them, including all seven prisoners who were interviewed in-depth, were or had been experienced, dependent drug users. These interviewees had extensive drug careers involving the consumption of a range of substances, including heroin, crack cocaine, cocaine, cannabis, alcohol, other stimulants and psychedelics, as well as opioid medications, such as, Subutex, methadone, benzodiazepines and a variety of sedatives and anti-psychotics.

All focus groups were conducted on the NPS basic wing. To facilitate focus group discussion and ensure it was not dominated by one or two participants, two members of the research team were present in each focus group. The research team comprised of

a postgraduate student conducting her first primary research through to three other established and experienced researchers, each with over a decade of research experience and all having collected data via focus groups in the past, with drug users and in this setting. During focus groups and individual interviews, participant's accounts of drug use, harms and markets, including weights, distribution routes and profit margins, were rigorously examined and, when appropriate, challenged. The interviews and focus groups ranged from 45 min to two hours in length. All interviews and focus groups were recorded and transcribed in full. These data were uploaded to NVivo, a software package for qualitative data analysis, and analysed using a thematic strategy allowing us to identify the extent, nature of, motivations for, and problems associated with the consumption of synthetic cannabinoids in the prison. In the following section, we present our findings from the interview data together with the primary finding from our analysis of drug seizure monitoring data.

Markets, prevalence, motivations and consequences

It's the new thing. It's like the new heroin, it's a big problem.
(Prisoner 4: Daily Spice user)

The findings presented commence with an overview of the synthetic cannabinoids market. We draw particular attention to its lucrative nature and the impact this has on offender management and the prison regime. Having established the market exists, we then turn to focus on the extent of synthetic cannabinoids consumption and the motivations for use; and the reported effects of synthetic cannabinoids and the impact these have upon prisoners, the prison regime and the wider criminal justice system.

The Spice market in an English prison

Research examining prison drug markets in England and Wales has uncovered the supply of cannabis, heroin and diverted medications (Crewe, 2006; Djemil, 2008; Farrell et al., 2000; Penfold et al., 2005; Singleton et al., 2005). More recent reports have highlighted how synthetic cannabinoids' have replaced these traditional drugs markets (HMIP, 2014, 2015a; Home Office, 2014; RAPt, 2015). This transformation of the prison drugs market was supported by our analysis of drug seizure data collected by the prison showing seizures of traditional drugs, such as cannabis and heroin were significantly lower than synthetic cannabinoids. In the first three months of 2015, recorded amounts of recovered synthetic cannabinoids (973 g) far outweighed the quantities of cannabis (15 g) and heroin (3 g) seized by the prisons' security and operations team, a pattern that had been established for over a year. Nevertheless, it is only when comparing seizure data from previous years that the enormity of the shift towards a synthetic cannabinoids market becomes evident. By the first quarter of 2015, the amount of synthetic cannabinoids seized had already overtaken the total amount for 2014 (969 g), representing a 400% increase. In contrast, cannabis seizures had decreased by over 60%. The full scale of the change in the prison's drug market is only fully apparent when we look back even further. In 2005, one month's recorded drug seizures of cannabis was 2 kg with a further 60 g of heroin recovered.

The Centre for Social Justice (2015) suggest the main motivation for establishing this new drugs market in prisons is profit – as well as the low risk of being caught – estimating, in relation to *Spice*, that it sells for £100 per gram in prison. Similarly, we uncovered a lucrative and thriving synthetic cannabinoids market with huge profit margins. At wholesale prices (purchases of 100 g or more), an ounce (28 g) could be widely obtained for as little as £84 (£3 per gram) outside the prison via online sellers or high street headshops

¹⁰ A total of 40 interviews were arranged and rearranged. However, disruption to the daily prison regime often led to prisoners being unable to attend the prearranged interview time and location.

¹¹ We acknowledge the limitations and discourse that surrounds the extent to which those held in criminal justice settings can provide consent (see Hodgson et al., 2006; Klockars, 1974).

¹² This dedicated NPS wing was established for prisoners who were caught in possession or under the influence of NPS. Prisoners were initially placed on what was known 'NPS basic' or 'Mamba basic' for four weeks which entailed being stripped of privileges, such as, extra visits, higher rates of pay, and in-cell televisions earned under the Incentives and Earned Privileges (IEP) scheme. However, if prisoners fully participated in interventions to reduce their NPS use, for example, awareness training and restorative justice circles they were eligible to return to their original wing and regained their IEP after two weeks.

and resold inside the prison, typically compressed in the lid of a soft drink for an astounding £100 per gram.¹³ *Spice* was also sold to prisoners in ‘fifty balls’ (half a gram) or in ready rolled ‘spliffs’ or ‘joints’ to further maximise profit margins. The mark-up for synthetic cannabinoids in this prison far exceeded those documented by Crewe (2005). His ethnography of prison drug dealing suggested that drugs in prison cost three to four times the price in the community.

Responding to the broad scale, lucrative synthetic cannabinoids market, which exists both throughout and beyond the prison estate presents a significant challenge for criminal justice professionals and policymakers. In this prison, the synthetic cannabinoids market was firmly established across all prison wings, including the ‘drug free’ recovery wing. Prisoners also reported similar synthetic cannabinoids use and availability throughout the prison system in England and Wales. Some prisoners estimated that up to a third of the wider prison population were involved at different levels in the selling of synthetic cannabinoids, either as distributors in specific wings of a prison, as drug ‘runners’ selling and delivering for distributors, or as ‘suppliers’. As we now outline, one way prisoners were involved in supplying the market was through the system of license recall.

Flashbacks: the abuse of license recall

The establishment of this synthetic cannabinoids market also has implications for the Probation Service and the management of offenders in the community. In understanding how prison drug markets establish, researchers have identified visits, prison staff and prisoners as key supply routes (see Penfold et al., 2005). Our analysis of security reports coupled with staff and prisoners perspectives revealed how synthetic cannabinoids entered the prison through a variety of traditional routes, including prison visits, prison staff, and over the prison wall or in the post. Yet, there were also a number of novel ways synthetic cannabinoids were entering the prison, including via drones¹⁴ and, due to the availability of synthetic cannabinoids in liquid form, security staff reported detecting these substances sprayed onto books, letters and children’s drawings. However, because the prison was a local prison, many prison staff and prisoners noted that by far the most widely deployed route was via new prisoners, especially those serving short sentences on license recall¹⁵:

... because we are a local prison we get the local people coming in and you get people coming in and out, in and out, and you get people bringing it [synthetic cannabinoids] in with them because it’s so cheap and available to buy in the community. (Prison Recovery Worker, NPS Lead)

... everyone keeps going and coming back in on these recalls with more drugs. (Prisoner 2: Daily *Spice* user)

Our research uncovered strong evidence that the license recall system – a cornerstone of offender management, intended to act as a deterrent and motivation for offenders to change their

behaviour – is routinely and systematically abused to bring synthetic cannabinoids into prison:

I’d definitely say people [who] are coming in on [license] recalls to prison and short sentences [are bringing in *Spice* and *Mamba*] just to make some money and go back out. The lads [prisoners] will tell you themselves, ‘I’m going to come back in. I’m going to go out, get some *Spice* and *Mamba* and then I’m going to come back in and I’m going to sell it and make thousands of pounds’. (Prison Recovery Worker)

Prisoners described how it was relatively easy to be recalled. As this prisoner suggests, missing probation appointments was sometimes enough to warrant a short return to custody.

... I’d not go [to my] probation [appointment] and come in and get paid £1000 for coming in, you know what I mean, you get paid £1000 for coming in full of *Mamba* for 2 week ... I’d probably come back if someone offered me £1000, if I needed it, that’s a down payment for a house that, you know what I mean? You don’t get that off no one else for cheap, unless I go out robbing, you know what I mean? It would be the safest fucking way coming back in here, just passing it on and think ‘Right, well I’ve been paid, two weeks and I’ll go home’. Madness! (Prisoner 2: Daily *Spice* user)

In concealing synthetic cannabinoids internally for this purpose, prisoners discussed the practice of ‘plugging’¹⁶ using *Kinder* egg toy packaging wrapped in condoms. The problem for prisons in England and Wales is that restrictions are imposed on intimate searching and many drugs are, therefore, brought into the prison system in this way. It was reported that two to four ounces (approximately 50–100 g) of synthetic cannabinoids plant matter or powder could be compressed into each egg and three or four eggs could be packed or ‘plugged’ by a prisoner. It is conceivable that up to 10 ounces (280 g) with a prison value of £28,000 could be smuggled in by a new prisoner. As the interviewee above, and other prisoners noted, there appeared to be substantial profits to be made which could be used as a form of currency to help an individual complete their sentence, for down payments on accommodation on release, or to pay off debts. These lucrative profit margins – one prisoner claimed that another inmate had made £100,000 dealing synthetic cannabinoids during a recent six month jail sentence – are a key reason why synthetic cannabinoids have taken over other traditional drugs markets in the prison. Occasionally, it was noted how some prisoners were involved in more organised and large-scale dealing:

When I went on A2 [prison wing] there were a kid on there down the block with 4 ounce stuffed up him, he had two others on the wing with four ounce as well, you know what I mean? It’s a lot of *Mamba* that. (Prisoner 5: Daily *Spice* user).

Nevertheless, we acknowledge that these stated profits and amounts maybe atypical and prone to exaggeration. More typically, prisoners discussed how they or other prisoners smuggled in one ounce of synthetic cannabinoids:

They are coming [in to prison] purposely for that one [one ounce] which is worth £3000. (Prisoner 3, Focus Group 4)

This section has outlined the profitability of synthetic cannabinoids and the main routes by which they enter the prison. These huge profit margins far outweigh previous profits associated with drug dealing in prisons and provide a key explanation for why synthetic cannabinoids have replaced traditional substances (e.g. cannabis and heroin) in prison drugs markets. As we go on to discuss later, recent policy changes aimed at improving offender

¹³ It is reasonable to speculate that a gram is less than a gram making profits margins potentially even more lucrative.

¹⁴ A drone is a small pilotless or remote control aircraft.

¹⁵ In England and Wales, prisoners serving more than one day in prison are released on a minimum 12 month license or parole with certain conditions attached to their release. Offenders may be recalled if they commit and/or are charged for a further offence or their Offender Manager (Probation Officer) believes that they are likely to during their license period. For high-risk offenders (e.g. violent or sexual offenders) a standard recall may result in having to serve the remainder of their sentence. However, in the majority of cases, a fixed term recall system operates imposing a further 28 days in custody (Offender Rehabilitation Act, 2014).

¹⁶ Plugging was the term used to describe how drugs or other proscribed items such as mobile phones were concealed in the anus.

rehabilitation and reducing drug harms are having the opposite effect and are in fact sustaining the synthetic cannabinoids market both within and beyond the prison environment in England and Wales. Without the availability of synthetic cannabinoids in the prison, the consumption of these substances would not occur. We now go on to outline prevalence of use and motivations for it in this setting.

The new drug on the block

Spice is now the dominant drug of choice. It always used to be gear [heroin] and Subutex, but that's all gone now, ain't it? It's all Spice. (Prisoner 4: Daily Spice user)

There's not that much gear [heroin] about anymore you know what I mean, or weed. I've had one joint since I've been here. I've been here two and a half month and had one proper spliff. You don't see weed, you don't see much of anything else but Mamba. (Prisoner 5: Daily Spice user)

Prisoners consistently discussed how traditional drugs markets had diminished, often noting the scarcity of heroin and cannabis. However, diverted medications, such as, Subutex, Pregabalin and Buscopan,¹⁷ as well as anabolic steroids, were available and used, yet not to the degree of synthetic cannabinoids. Although prisoners used the generic terms *Spice* or *Mamba*, and substances entered the prison without the usual branded packaging, prisoners were knowledgeable about the different brands available to them. They reported consuming in prison other popular brands found in headshops and online stores, such as, *Annihilation*, *Cherry Bomb*, *Clockwork Orange* and *Vertex*. Twenty-six of the 27 prisoners reported first using synthetic cannabinoids in the prison system. Of these, 20 reported daily use and a further four used several times per week. Only the three peer recovery mentors we interviewed had desisted from using. Estimates of the extent of consumption among the prison population varied, with some prison staff suggesting conservative estimates as low as a third – they acknowledged more was likely to be occurring 'behind cell doors' – and prisoners consistently estimating prevalence as high as 80–90%.

I can count on two hands, about seven lads who don't smoke it on our wing . . . 98 lads on the wing, do you know what I mean? . . . It is 90% of the jail who'll be on it. There's only a few lads on every wing that don't do it. (Focus Group 3, Prisoner 1: Ex-Spice user working as a Recovery Peer Mentor)

These higher estimates made by prisoners are consistent with recent national estimates of synthetic cannabinoids prevalence ranging from 60 to 90% among the prison population of England and Wales (see [Centre for Social Justice, 2015](#)) and other studies (see [User Voice, 2016](#)). It was even suggested in the prison where we collected our data that around 30–40% of the population residing in the 'drug free' wing were using synthetic cannabinoids. The motivations for such high levels of use are now considered.

Motivations for synthetic cannabinoids use in the prison

The wide accessibility of synthetic cannabinoids within the prison, along with, as we discuss below, the altered state of reality they induce and the failure of MDTs to detect them, were primary

motivations for their consumption. Furthermore, synthetic cannabinoids were described as a perfect prison drug:

You get high, you don't have to have as much in there, obviously the piss test don't come up, it doesn't smell. All of the things you'd have to be aware of while your trying to get through your jail as quick as possible, its completely taken all that out, just by buying Spice instead of weed [cannabis] so it's a win-win situation . . . If there was a piss test, I think a lot of people might switch back to weed, only because it's safer. (Prisoner 3: Daily Spice user)

Pleasure, as a reason for the consumption of synthetic cannabinoids was relatively absent in the prisoner interviewees. Nevertheless, some did note how they 'had a laugh' with friends when they used it. Furthermore, all prisoners and many staff described how the regular practices of 'spiking', giving a person *Spice* without their knowledge, and the 'Mamba challenge', being offered synthetic cannabinoids for free if a person agrees to smoking half a gram in a bong, of other, often vulnerable prisoners provided entertainment and relieved boredom.

Some people who can't pay for Mamba and they can't afford it . . . someone will give them a bong just to watch them go under.¹⁸ (Prisoner 1: Daily Spice user)

This was especially the case at weekends when a combination of no work, education or other purposeful activities, more prisoner association and less staff on duty, created an environment in which this could occur.

They spike people with it. You know, someone says 'Give us a bit of that burn [tobacco]' and they've absolutely packed it out with Mamba, and they give it to someone who's never touched it before. Then they buzz off it for 10 minutes just to see 'em go under. Half of the lads in the workshop are sat in the corner laughing their heads off, thinking it's hilarious! (Focus Group 3: Prisoner 2: Ex-infrequent Spice user working as a Peer Recovery Mentor)

As previous research has noted, the prison environment often encourages drug use (see [Penfold et al., 2005](#); [Swann & James, 1998](#); [Tompkins & Wright, 2012](#)). We found similar motivations for the consumption of synthetic cannabinoids, which revolved around their functionality in this environment. Prisoners discussed how synthetic cannabinoids provided an escape from the reality and routine of prison life, what they referred to as a 'head shift', 'time killer' or 'taking away the bars':

. . . because you're not working, your banged up 21 hours a day, it's [prison's] gonna get to your head, no matter what, it does. [. . .] If you're smoking that, it's like having a party or a laugh or whatever, it's a head change. It's like what I said at the beginning, it's a day out in your head, innit. (Focus Group1: Prisoner 1 Daily Spice user)

However, in contrast to many previous studies exploring the motivations for drug use in prisons (see for example [Penfold et al., 2005](#); [Wheatley, 2007](#)), the prevailing motivation for the consumption of synthetic cannabinoids in the prison, along with their easy accessibility, was the inability of existing MDTs to identify them:

NPS [synthetic cannabinoids] is one of your biggest, biggest drugs of choice in the prison. Basically, because they know we can't test for it [. . .] they know they'll get away with it. (Operations Staff)

¹⁷ Buscopan is an antispasmodic medication commonly prescribed to relieve painful aches and spasms in the bowel associated with Irritable Bowel Syndrome. In discussing other current and emerging drug trends, several prisoners noted the use of this prescribed drug for non-medicinal purposes and how it was consumed by being crushed and snorted.

¹⁸ 'Go under' in this context refers to experiencing a negative reaction as a result of taking a drug. These can take the form of a psychological mental and/or physical reaction, for instance, feeling nauseous, anxious, light headed or passing out.

A positive MDT result for an unauthorised substance, like heroin or cannabis, may result in loss of privileges, or affect a parole outcome or prison categorisation decision (NOMS, 2015). These significant consequences provided key motivations for the consumption of synthetic cannabinoids instead of detectable drugs.

If I have a [cannabis] spliff and get tested I'm getting days [added to my sentence]. With Mamba now, yeah, I'm getting nothing. I can blaze [smoke] in front of whoever! (Focus Group 1: Prisoner 4 Regular *Spice* user)

... it [synthetic cannabinoids] don't come back in urine tests. You know when we do urine tests, they don't test for it at the moment. With cannabis and anything else like, heroin and benzos [Benzodiazepines] and anything like that, you get urine tested. (Focus Group 1: Prisoner 1: Daily *Spice* user)

Our findings resonate with those of Perrone et al. (2013) who found that cannabis users in California temporarily switched to synthetic cannabinoids to avoid positive drug tests when subject to community correctional supervision, residing in a sober living facility, seeking employment or wanting to join the military. However, unlike Perrone et al.'s sample, many prisoners reported continued use beyond the prison environment due to what they described as the potency and strength compared to cannabis, or their perceived addictiveness, as we discuss later.

In addition to avoiding drug tests, this section has highlighted how the consumption of synthetic cannabinoids can be more broadly linked to prison regimes and the psychological impact of prison life (see, for example, Stark et al., 2006; Swann & James, 1998). The situation that prisoners are released into (e.g. approved premises, unemployment, insecure housing, etc.) may also contribute to the continued motivation to use synthetic cannabinoids in the community. Prison populations are more socially and economically disadvantaged than the general population. Fifteen per cent are homeless before entering custody (Ministry of Justice, 2012a) and half report a history of debt (National Offender Management Service, 2007). Moreover, in 2012, 47% left education with no qualifications, with only 32% in employment prior to custody, and 13% having never been employed, leading to a lack of opportunities for work beyond the prison gates (Ministry of Justice, 2012b). These factors are likely to provide further motivation to continue to use synthetic cannabinoids upon release from prison. An increase in psychoactive drug use within this population presents further challenges to rehabilitation, recovery and resettlement.

The implications of synthetic cannabinoids markets for recovery journeys, prisoner's health and well-being, and prison regimes.

Historically, prisons have provided an environment for many problematic drug users – usually those consuming heroin and/or crack cocaine – to stop taking drugs or stabilise their consumption (Swann & James, 1998; Tompkins, Neale, Sheard, & Wright, 2007). An EU review suggested that periods of incarceration offer an opportunity to reduce drug use and engage with treatment services (EMCDDA, 2012). Indeed, Tompkins et al. (2007) found that injecting drug users reported intentionally entering prison to receive drug treatment. The current widespread availability of synthetic cannabinoids in custody, coupled with their non-detectability in MDTs, and perceived addictive qualities, were reported to be affecting the recovery journeys of problematic substance users. For those withdrawing from other substances, such as heroin, synthetic cannabinoids were readily available as an alternative:

If someone's come in and they've been using a fair few substances at a high quantity in the community, and then they now find themselves withdrawing, people throw it [synthetic

cannabinoids] at them and know that they'll take it. (Focus Group 1, Prisoner 5: Daily *Spice* user)

Drug dependent prisoners who would normally stabilise or abstain from drug use during their sentence, bemoaned the easy accessibility of synthetic cannabinoids across the prison and how it was hindering this process. The following prisoner who had used heroin for over twenty years stated:

I would normally get myself cleaned up in here on the [recovery] wing. Nowadays, you're hitting the Mamba. (Prisoner 2: Daily *Spice* user)

All of the prisoners involved in the research were experienced drug users, many reported early onset of substance use, with over half recounting a decade or more of dependent use of heroin and/or crack cocaine. A key message they consistently emphasised was that synthetic cannabinoids were worse than any other substance they had experience of using. A minority further discussed how their consumption of synthetic cannabinoids had replaced their dependent consumption of other drugs:

I was addicted to Mamba as well on the outside and that overtook a heroin addiction. That's how addictive it is, it's bad [. . .] I was on £80 worth of heroin and 60 ml of methadone and it overtook that addiction, just overtook it. (Prisoner 1: Daily *Spice* user)

While a small body of research (see Brakoulias, 2012; Every-Palmer, 2011; Zimmermann et al., 2009) has emerged suggesting that synthetic cannabinoids cause more psychological harm than cannabis, synthetic cannabinoids were perceived by some of our interviewees to be more psychologically and physically addictive compared to other substances (e.g. heroin and crack cocaine). Withdrawal symptoms perceived to be associated with the consumption of synthetic cannabinoids included stomach cramps, loss of appetite, twitching limbs or sweating and/or altered mental or emotional well-being.

... it is addictive, physically [. . .] I've done it where I've been off it a few days and I've been sweating, shaking, getting twitches and everything, when I've been smoking really bad in jail and stuff. (Prisoner 1: Daily *Spice* user)

Continued consumption of synthetic cannabinoids reportedly kept these withdrawal symptoms at bay. As further evidence of the addictive nature of these substances, both prison staff and prisoners noted how users sold items, such as their clothing, to raise money to buy synthetic cannabinoids.

Prisoners also often discussed the potency of synthetic cannabinoids:

You only need a little bit. These guys that are new to it, they build one the same way they would a normal spliff and 'bang'! They're gone. Even me yeah, I've been smoking and using all sorts for years, but sometimes two drags now, yeah, and I'm gone, have to stub it out and lie down in my pad for a couple of hours. (Prisoner 6: Daily *Spice* user)

Nevertheless, many reported quickly building tolerance. They described their patterns of consumption as addictive leading to some prisoners reporting smoking as much as five grams per day and staff frequently recounting how prisoners owed drug debts of £10,000 or more. With an average prison wage of £9 per week, payment was typically made via telephone or online banking or using 'quick cash' scratch cards available through some bookmakers. Debts incurred through smoking synthetic cannabinoids led to violent assaults on prisoners, or threatening texts, phone calls and personal visits to family members. Furthermore, prisoners and family members were pressured to assist in bringing synthetic cannabinoids in via visits or prison recall.

... they're all doing it because it is big bucks, it's massive bucks, or they're in massive debt. . 'Here's a way to clear your debt, take some in, get it in to 'such-a-body', and then, your debts cleared'. (Operations Staff)

Others were coerced into holding synthetic cannabinoids for prison dealers.

In addition to these adverse experiences, many prisoners also discussed how the consumption of synthetic cannabinoids had negatively impacted upon their mental health. A review of NPS identified a range of psychopharmacological effects associated with synthetic cannabinoids including anxiety, severe depression, self-harm, paranoia and psychosis (Home Office, 2014). Our findings support this identifying a similar range of mental health effects that staff and prisoners attributed to the consumption of synthetic cannabinoids. All prisoner interviewees reported experiencing anxiety or depression, while others recounted bouts of paranoia during or after consuming these substances

Recent reports from the Inspectorate of Prisons for England and Wales (HMIP 2014, 2015a) and Ministry of Justice (2016a) have linked the rise in self-harm and suicides in custodial settings with an increase in seizures and consumption of synthetic cannabinoids. Our findings provide further evidence for this association. Prisoners described to us episodes of self-harm or suicidal thoughts after consuming synthetic cannabinoids:

I slashed myself all over. I thought my veins were snakes wrapping themselves around me so I sat there in my cell slashing them all. (Prisoner 5: Daily Spice user)

Do you know what I'm surprised at, what's not a regular occurrence about Mamba is suicides? . . . a few times when I've gone under I've started thinking proper negative thoughts about myself like 'why have I turned out this way?', 'why am I here?', 'why am I in jail again?', but magnified, do you know what I mean, times ten . . . (Prisoner 7: Daily Spice user)

Others discussed how they believed their consumption of synthetic cannabinoids induced psychosis:

It ended up giving me psychosis, the doctors said 'that Mamba's give you psychosis, it's messing your head up'. So I was hearing voices and all sorts and I thought it was normal. (Focus Group 1, Prisoner 5: Ex-daily user of Spice, now occasional)

Castellanos et al. (2011) report, compared to cannabis, hallucinations are five times more likely to occur after consuming synthetic cannabinoids. Prison staff associated acts of violence, usually towards them, or self-harming, with prisoners experiencing psychotic episodes or hallucinations after consuming synthetic cannabinoids. They recalled how prisoners lashed out at them and the research team reviewed video footage of prisoners in psychotic states:

A prison officer was stabbed in the face with a key because there was someone who had taken NPS and was in the middle of the yard. He's gone out to see him, and this guy was hallucinating thinking that the rest of the inmates on the yard were ants trying to get away from him, but he was a monster going to him. So as he's gone to him and said 'Are you alright?', he's just got his key out and stabbed him. (Prison Custody Officer)

Some prison staff were concerned about the long-term psychological impact synthetic cannabinoids appeared to have upon some prisoners:

It's quite frightening [. . .] There are some extreme reactions. . And there's lads that we've known for years, they've changed. I'm not sure what type of research has been done on the long-term effects, I'm guessing there's not much at the moment, but psychologically they've changed these lads. (First Response Team)

Although infrequent, violent and psychotic incidents had a particularly traumatic impact on the staff and prisoners who experienced and witnessed them, and, in turn, created a climate of apprehension and fear within the prison workforce:

... there's been an increase in staff being worried about dealing with an incident because we see them so often. I would presume that, you don't know what you're going to deal with once you get there, so it's quite daunting coming into work to think, you don't know what's going to happen and you've seen some quite bad experiences. (Prison Recovery Worker)

Responding to incidents like those described impacted upon staff resources. In an episode involving violence, three officers are required to attend and restrain a prisoner. If a prisoner is hospitalised – such a regular occurrence following seizures, acute respiratory problems, psychosis or coma that ambulances have been renamed 'Mambulances' by prisoners – two staff are required to stay with them until they are discharged (see also Centre for Social Justice, 2015). An increase in these incidents impacts on the ability to undertake other daily duties, whether that is healthcare, or supervision and monitoring of a prison wing, especially as officers may be called from across the prison to respond to an incident. Consequently, it affects the overall prison regime, safety and security, as the following prison officer noted:

I think it impacts upon everybody, health care staff, it can impact upon the regimes of the jail, they're called 'daily regimes', because if we've got an incident at 8 o'clock in the morning, those staff have to deal with it. It can put the daily regime 20–30 min behind, which means obviously people are restricted for their times at work. If we've got visitors coming in for appointments and things like that, it can impact upon them as well. It can impact upon your legal visits, if there's a delay then they can't take their legal visits on time. So it's a domino effect really, you have to take staff out of certain areas to deal with that incident, it means that they can't be doing their daily job at that time. (Security Team)

The impact of synthetic cannabinoids related incidents in restricting the ability of staff to get prisoners safely to and from education, training and other activities, together with the implications of this for a reform programme based on enhancing prisoner education in rehabilitation and resettlement, was noted in the most recent HMIP Report (HMIP, 2016).

In summary, we found that there was an established and profitable synthetic cannabinoids market in the prison making access to these substances easy. Consequently, levels of consumption were high and use was perceived to be widespread. In line with the 2015 HMIP Report and User Voice (HMIP, 2015b; User Voice, 2016), the main motivations for their use were their non-detectability, in particular, the avoidance of a positive MDT, as well as the functions they provided in the prison environment as a form of escapism or relieving boredom (see also User Voice, 2016). The consumption of synthetic cannabinoids also appeared to be affecting recovery journeys of prisoners, particularly when these substances were available on drug recovery wings. Furthermore, the widespread consumption of synthetic cannabinoids impacted upon the physical and mental health of prisoners, as well as their financial circumstances. Staff were increasingly required to respond to immediate issues associated with anxiety, depression and in some extreme cases, violence and psychotic episodes, which, in turn, created a culture of apprehension among prison staff. The findings offer support for the suggestion that the recent steep rises in serious violence, self-harm and suicide in prisons in England and Wales can be attributed, at least in part, to the parallel growth in the consumption of synthetic cannabinoids (see HMIP, 2014, 2015a, 2015b, 2016; Ministry of Justice, 2016a; RAPt, 2015).

We now consider the implications of these findings for prison, drug and criminal justice policies, and future research agendas.

Twenty years of taking the piss: MDTs and false positives

MDTs were first introduced in UK prisons in 1996. Since that time there appears to have been a 72% decline in positive drug tests among prisoners, from 24.4% in 1996 (HM Prison Service, 2007) to 6.9% in 2014/2015 (Ministry of Justice, 2016b). Furthermore, over two-thirds of prisons reported no drug misuse, as measured by positive random MDTs, in at least one month of 2014/15 (Ministry of Justice, 2016b). These results suggest a decline in drug consumption in prison and are ostensibly evidence of MDTs success. However, in a systematic review of international evidence on criminal justice interventions aimed at reducing drug-related crime, Holloway, Bennett, and Farrington (2005) questioned the effectiveness of MDTs. Likewise, our findings challenge their effectiveness, with evidence of an emerging synthetic cannabinoids epidemic within an English prison that is driven by current MDT policies. The widespread availability and accessibility of synthetic cannabinoids compared sharply to the scarcity of other drugs within this prison. A lucrative synthetic cannabinoids market had established itself and displaced the traditional drug markets within this setting. A further striking finding from our research was that prisoners had substantially higher rates of consumption of synthetic cannabinoids compared to general population estimates (see Home Office, 2012); a finding replicated in recent studies of other prison populations in England and Wales (see Baker, 2015; Centre for Social Justice, 2015; HMIP, 2014, 2015a, 2015b, 2016; User Voice, 2016). Prisoner interviewees estimated that up to 80–90% of the inmate population had consumed synthetic cannabinoids while in prison. The majority reported daily use, with some consuming as much as 5–6 g per day, with many other users consuming synthetic cannabinoids regularly/intermittently on a weekly basis. Overall levels of drug use might not be significantly higher than they were prior to the emergence of synthetic cannabinoids (see Edgar & O'Donnell, 1998; Penfold et al., 2005; Singleton et al., 1998; Wilkinson et al., 2003), however current levels are still troubling due to the additional harms attributed to synthetic cannabinoid use.

Prisoners and staff recounted a wide spectrum of negative effects upon prisoners and the prison regime; these were perceived to be associated with synthetic cannabinoids. Such effects included quickly building-up tolerance and dependency, leading to addiction, acute withdrawal symptoms, debt, violence and aggression, self-harm, seizures and fitting. The propensity for synthetic cannabinoids to induce or exacerbate mental disorders in users (e.g. anxiety, depression, paranoia, psychosis) was frequently discussed. These findings contribute to a growing body of literature regarding the adverse consequences of synthetic cannabinoids (see Barratt et al., 2013; Bebarta et al., 2012; Castellanos et al., 2011; Every-Palmer, 2010, 2011; Hurst et al., 2011; Papanti et al., 2013; Thomas et al., 2012; Van Der Veer & Friday, 2011; Zimmermann et al., 2009). Given the range of negative effects identified by our participants, and the possibility that many of these may be experienced simultaneously and/or acutely, we assert that prisoners are being subjected to new risks and harms within the prison environment that are not associated with drugs once-widely available in this setting (e.g. cannabis and heroin). In this respect, it is particularly concerning that almost all of the prisoners (26/27) reported trying synthetic cannabinoids for the first time within the prison setting. Moreover, when we factor in the high levels of pre-existing mental health disorders among the prison population (Prison Reform Trust, 2016; Singleton et al., 1998), and the propensity for the prison environment to induce mental health problems (see Birmingham,

2003), the widespread availability of synthetic cannabinoids in this environment has created a dangerous recipe for prisoner well-being, the safety of prisoners and prison staff, and the prison regime.

So how should prisons and wider drug policies respond to this problem? The avoidance of positive MDTs was a principal motivator for synthetic cannabinoids consumption, which were chosen primarily for their non-detectability (e.g. in MDTs and to a lesser extent because of their lack of smell) (see also, User Voice, 2016). It has been suggested new MDTs may be developed to detect synthetic cannabinoids or other NPS (Centre for Social Justice, 2015); however forensic early warning systems indicate that the compounds in synthetic cannabinoids are constantly changing. As Hammersley (2010) predicted, manufacturers simply replace banned chemicals with other, often stronger, more dangerous ones. The latest update from the European Monitoring Centre for Drugs and Drug Addiction identifies 160 new strains of synthetic cannabinoids in Europe alone since the original *Spice* was banned in the UK in 2009 (EMCDDA, 2016a). Thus, it is doubtful MDTs will keep pace with newly formed chemical structures. The investment in the development of MDTs capable of detecting synthetic cannabinoids and other NPS is, therefore, a flawed and expensive strategy.

In addition to easy access, many of the other motivations for the use of synthetic cannabinoids reflect those for the consumption of other substances in prisons (see Boys et al., 2002; Cope, 2003; Crewe, 2006; Penfold et al., 2005; Swann & James, 1998) and the wider society (see Cohen & Taylor, 1976; Williams, 2013). In particular, synthetic cannabinoids were being used as a coping mechanism to deal with boredom and the realities of prison life (see also User Voice, 2016). This suggests the prison regime requires reform, reducing long periods of lock-up and unstructured activities, and replacing them with increased opportunities for personal development through positive and engaging education work and training. Yet addressing this is a challenge due to continued funding cuts and staff shortages. Perhaps, a more tangible aim, as Tompkins (2016) notes, is prison drug policy reform focused upon reducing the harms and violence associated with drug use in this setting. As we have argued, synthetic cannabinoids are generating a new set of harms for prisoners. Moreover, three successive HMIP annual reports have emphasised how the consumption of these substances is contributing to record levels of serious violence (against prisoners and staff), self-harm and suicides (HMIP, 2014, 2015a, 2015b, 2016). It seems reasonable to speculate that the market for synthetic cannabinoids, with all the harms it entails, and the levels of consumption we have found, may not have emerged to the magnitude it has, if prisoners were not subject to MDTs. Indeed, since the introduction of MDTs, the practice of prisoners avoiding drug use detection by changing their patterns of consumption has been found. For example, some prisoners switch from cannabis to a less easily detectable and potentially more harmful substance, heroin (Singleton et al., 2005; Woodall, 2011). Given prison drug strategies are designed to prevent harm to prisoners (HM Prison Service, 1998), the established synthetic cannabinoids drugs market and the harms identified in connection with their use, directly contradict this aim. We can only conclude, then, that the policy of testing prisoners for drug use, designed to reduce harms and improve prisoner well-being, has patently failed.

It is imperative that MDT policies are revised—we recommend an approach rooted in harm reduction. An alternative solution, and one within our grasp, is the removal of MDTs among those in custody, at a minimum, for cannabis detection—a drug others have previously found to be commonly used in prisons in England and Wales (see, for example, Edgar & O'Donnell, 1998; Wilkinson et al., 2003). This policy change recognises that drug use in prisons is

unlikely to be eliminated completely. However, the removal of MDTs has the potential to significantly lessen the demand for synthetic cannabinoids as a replacement for other detectable substances, and thus significantly diminish the market and associated harms. In doing so, users of synthetic cannabinoids may instead consume cannabis, a drug that has the potential to cause far less harm to users and those around them.¹⁹ Indeed, in a study undertaken soon after the introduction of MDTs in England and Wales, Edgar and O'Donnell (1998) found strong support from prisoners (82%) and prison staff (44%) for the tolerance of the consumption of cannabis in prisons, emphasising there were no negative effects to discipline and order. This proposed reform should also be applied to the offender population beyond the prison environment. An increasing number of convicted offenders are subject to MDTs as part of community drug sentences or upon their released on licence from prison while on licence. In some cases, positive drug test results for those on licence from prison create a revolving prison door.

Our finding that the central motive for use of synthetic cannabinoids was the avoidance of detection has wider policy implications. Since the emergence of NPS in the late 2000s, their availability (e.g. online and in headshops), legal status, price and purity have consistently been cited as key motivations for use (see Home Office, 2014). In the UK, policy responses have attempted to restrict availability and close legal loopholes, firstly through the introduction of the Temporary Class Drug Orders and more recently through the implementation of the 2016 Psychoactive Substance Act. This latest policy development will impact upon these motivations. For example, it is likely that restricting availability will lead to the development of an illegal market in which purity decreases and price increases. What we have highlighted is that – at least among some user groups – the motivation to use synthetic cannabinoids and other forms of NPS in order to avoid drug use detection will remain. We predict this motivation will become more prominent in the future, especially if drug testing policies continue to be implemented and extend further beyond the offender population to the general public. The temptation to replace detectable substances with less or non-detectable substances to avoid incurring sanctions may be extremely high (see Bebarta et al., 2010, 2012; Loeffler, Hurst, Penn, & Yung, 2012; Perrone et al., 2013; Richardson, St. Vil, Wish, & Cooper, 2016).

These findings have implications for future research agendas. Our study was relatively small scale and focused on a local category B English adult male prison. Future studies should include different custodial settings (e.g. different types of prisons—high security, open, etc.), other demographics (females and young offenders) and countries. Beyond the prison walls, the motivation to avoid drug use detection – as we have identified here – warrants further attention in other non-criminal justice institutions, such as mental health establishments, the military, and other occupations where MDTs are routinely employed. Our research was undertaken in the months leading up to the introduction of the Psychoactive Substances Act. Future research should assess its impact on drug dealing, availability and use in this setting.

Conflict of interest

The authors declare no conflict of interest.

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¹⁹ See Brakoulias (2012) for a comparison of psychopathological syndrome occurrence in cannabis and synthetic cannabis users.

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