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The use of synthetic cannabinoid receptor agonists (SCRAs) within the homeless population: motivations, harms and the implications for developing an appropriate response

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ABSTRACT

Background: Synthetic cannabinoid receptor agonists (SCRAs) have become increasingly associated with a range of physical, mental health and societal harms. In response, several countries have introduced legislation aimed at restricting their supply and use. While these legislative changes have led to a decrease in SCRA use within the general population, SCRAs remain popular within vulnerable populations, in particular the homeless. This article presents the findings from the first in-depth qualitative study of SCRA use within the homeless population. It makes an important and timely contribution to the current evidence base and discourse on how governments and service providers should respond to SCRA use within the homeless population.

Methods: The research on which this article is based was undertaken in Manchester, UK. Qualitative interviews were undertaken with 53 homeless users of SCRAs and 31 stakeholders.

Results: The motivations for SCRA use are broadly similar to those associated with traditional drugs; namely to escape from the reality of life on the streets, and to provide relief from the physical conditions of a street-based lifestyle. However, the combination of their low cost, the ease with which they can be accessed, their high potency, and their non-detectability explains their particular appeal to the homeless population. Alongside these motivations, the research identified a range of physical, mental health, and societal harms that were directly attributable to SCRAs.

Conclusions: The most appropriate way to address the continued use of SCRAs within the homeless population is through the development of a more appropriate service response rather than further legislative change.

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Introduction

Synthetic cannabinoid receptor agonists (SCRAs) first emerged in the mid-2000s. Produced with manufactured chemicals, SCRAs were developed to create similar effects to THC (Delta-9 tetrahydrocannabinol), the active ingredient in cannabis (Fantegrossi et al. 2014; Abdulrahim and Bowden-Jones 2016). Despite their initial popularity with recreational substance users, perceptions of SCRAs have since become more negative (Bilgrei 2016; Blackman and Bradley 2017), with users reporting adverse physical and mental health effects associated with their use (Winstock and Barratt 2013; Soussan and Kjellgren 2014; Winstock et al. 2017). Health harms associated with SCRA use have been identified in several countries, including Australia (Barratt et al. 2013), Germany (Zimmermann et al. 2009), New Zealand (Every-Palmer 2011), the United Kingdom (HM Inspectorate of Prisons 2014, 2015, 2016; Prisons and Probation Ombudsman 2015; Ministry of Justice 2016; Ralphs et al. 2017), and the United States (Castellanos et al. 2011; Van der Veer and Friday 2011; Bebarta et al. 2012; Thomas et al. 2012; Harris and Brown 2013; Trecki et al. 2015). Furthermore, SCRAs have been directly implicated in 60 deaths in England and Wales in 2018 (ONS 2019a), more than 100 deaths in Europe in 2016–17 (EMCDDA 2018a), and 75 deaths in New Zealand between 2017 and 2019 (Doyle 2019). Alongside these health harms, high profile media coverage of SCRA users in 'zombie-like states' in major cities around the world (Rosenburg and Schweber 2016; Williams 2017; Alexandrescu 2019) has driven public and political demand for a response to SCRAs (Jones 2018). To date, the response has largely been in the form of legislation rather than service reform, with a number of countries (including Ireland, New Zealand, Poland, and the UK) implementing prohibition policies aimed at restricting the supply and use of SCRAs (Department of Justice and Equality 2010; Malczewski 2011; Parliamentary Counsel Office 2013; Home Office 2016).

However, while these legislative changes have led to a decrease in SCRA use within the general population (Home Office 2018a), SCRAs have remained popular among

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prisoners and the homeless (Abdulrahim and Bowden-Jones 2016; MacLeod et al. 2016; EMCDDA 2018b; Home Office 2018b; Ministry of Housing, Communities and Local Government 2018; UNODC 2018). In seeking to understand the continuing popularity of SCRAs within these vulnerable populations, a small body of research has investigated the specific motivations and harms associated with SCRA use within the prison population in the UK (Centre for Social Justice 2015; McBride 2016; User Voice 2016; Ralphs et al. 2017). This has resulted in the development of a tailored service response, in the form of a toolkit for prison staff (Public Health England 2017), alongside a criminal justice strategy aimed at restricting the supply of SCRAs within the secure estate (HM Prison and Probation Service 2019). In contrast, despite SCRA use within the homeless population being highlighted as a major public health concern that demands empirical research (Home Office 2018a), there is currently no comparable research on which to build an evidenced-based response to SCRA use within the homeless context. This article begins to fill this gap in the current knowledge and evidence base.

The extant literature on substance use within the homeless population consists largely of studies that were undertaken prior to the rise in popularity of SCRAs, when the most commonly used illicit substances were cannabis, heroin and crack cocaine (see, for example, Klee and Reid 1998a, 1998b; Fountain and Howes 2002; Baer et al. 2003; Fountain et al. 2003; Gomez et al. 2010). These studies found that a large proportion of homeless substance users are dependent on the substances they use (Chen et al. 2006; Martijn and Sharpe 2006; Thompson et al. 2009); largely because of the functional purpose they serve. These include alleviating the stress of life on the streets (Klee and Reid 1998a, 1998b; Thompson 2005), helping users to keep warm (Ayerst 1999), and/or to self-medicate the symptoms of physical and mental health problems (Klee and Reid 1998a, 1998b; Fountain and Howes 2002; Homeless Link 2014). The question of whether or not the motivations for SCRA use within a homeless context differ from those identified in studies conducted prior to the advent of SCRAs is currently unknown. Where motivations for SCRA use have been investigated, this has predominantly focused on the general population and the prison population. Within the general population, SCRAs have been identified as a cheap and legal alternative to cannabis (Kronstrand et al. 2013; Winstock and Barratt 2013; European Commission 2014; Blackman and Bradley 2017; Winstock et al. 2017). While studies within the prison population have found the non-detectability of SCRAs in mandatory drug tests (MDTs), and their ability to help users escape from reality and kill time, as key motivators for use (Centre for Social Justice 2015; McBride 2016; User Voice 2016; Ralphs et al. 2017). With these varying motivations for use in mind, it is imperative that a more in-depth understanding of the motivations for SCRA use within the particular context of homelessness is developed. Without this, the reason/s for the apparent ineffectiveness of prohibition policies to address SCRA use within the homeless population will remain unclear. By forefronting the seldom-heard voices of this often excluded and marginalized population, this article sets out to elucidate the specific motivations for the use of SCRAs within the homeless population.

Methodology

Research context

The research on which this article is based (Ralphs et al. 2016) was undertaken in Manchester, UK. From the mid-2010s, media reports started to draw attention to 'Spice epidemics' in a number of major UK cities, of which Manchester was one. Indeed the mainstream media has repeatedly highlighted the devastating impact of SCRA use within the homeless population in Manchester (see, for example, VICE 2015; BBC 2016; UNILAD 2018; Alexandrescu 2019). However, as Alexandrescu (2019, p. 7) asserts, much of this stigmatizing media coverage has ignored the 'lived experiences and suffering of those whose lives are scarred by poverty and substance abuse'. To ensure that the local service response fully met the complex needs of homeless SCRA users, Manchester's Community Safety Partnership Board commissioned the research team to investigate the scale and nature of SCRAs use within the homeless population, and to make recommendations on how to improve user engagement and reduce user and societal harms. The research took place between January and June 2016. The findings presented in this article draw on 84 qualitative interviews with homeless users of SCRAs and stakeholders that support, work with, and/or engage with this particular population. The interviews were supplemented by regular observational research throughout the 6-month study.

Participants

For the purposes of the research, we used the term homeless to include both street homeless, and those non-street homeless who were leading a street-based lifestyle at the time (i.e. spending large portions of their day in Manchester city center, primarily to obtain money to purchase substances that they then used in public places around the city center). Hence, in addition to street homeless, participants included those living in a range of temporary accommodation, such as hostels, night shelters, supported accommodation, probation bail hostels, and approved premises following release from custody. Many of these non-street homeless participants had recent experience of being street homeless.

Using a purposive sampling approach, homeless SCRA users were accessed through a range of local services who acted as gatekeepers (Hammersley and Atkinson 1983), identifying suitable individuals for interview (in terms of both knowledge and experience of SCRAs, and ability to fully consent). Fifty-three interviews were undertaken with homeless users of SCRAs. Fifty-one were current users of SCRAs, and two reported recent desistance. Users were aged between 16 and 52 years ($n = 41$ were aged 25 or above; $n = 12$ were between the ages of 16 and 24), and the majority ($n = 47$) were male. In terms of their substance use profile, many of those interviewed would be classed as having a 'severe substance use disorder' (American Psychiatric Association 2013). In addition, a further 31 interviews were

undertaken with a range of relevant stakeholders that were identified by the research team and the Manchester Community Safety Partnership Board. These included, for example, supported accommodation staff and managers, practitioners from adult and young people's substance use treatment services, neighborhood police officers, Accident and Emergency nurses and medical consultants, mental health dual diagnosis nurses, homeless medical practice GPs, staff from approved premises and probation bail hostels, homeless day center staff, and homeless outreach workers.

Data collection

Both the university research and ethics governance committee, and Manchester City Council's research governance committee, granted ethical approval for the research. All interviews were conducted face-to-face and digitally recorded. The vast majority of user interviews were undertaken on the premises of either local homeless services, or supported accommodation providers. These included a medical practice serving the homeless population, homeless day centers, supported accommodation providers, and probation hostels. In addition, a small number of interviews took place in city center headshops[1] and on the streets during the observational research. The user interview schedule was semi-structured with interviewees asked to talk about: the access and availability of SCRAs in the city; the extent of their SCRA use; the relationship between SCRAs and other substances; their experiences of using SCRAs; their motivations for the onset, continuation and, where applicable, desistance from SCRA use; and their views and experiences of service provision.

Stakeholder interviews were predominantly conducted at stakeholders' places of work. A small number (e.g. for homeless outreach workers and neighborhood police) were conducted on university premises. The semi-structured interview schedule for stakeholders focused on their knowledge and understanding of SCRA use, their experiences of working with users, the impact of SCRAs on their organization/service, and their professional observations on where/how policy and practice could be improved. In addition to the interviews with users and stakeholders, over a 150 hours of observational research was carried out over the 6-month period. The observational research was conducted in city center headshops, homeless day centers, a medical practice serving the homeless population, and city center 'hot spots' for SCRA use identified by neighborhood police and homeless outreach workers.

All interviewees were provided with written and verbal information about the research. Prior to interview, each participant was required to sign a consent form. Participation in the research was voluntary with no incentives offered (Seddon 2005). To ensure anonymity, all participants were assigned a depersonalized identifier. For users, this included a unique code, gender, age band and accommodations status (e.g. U29, male, early 20s, street homeless). For stakeholders, this included a unique code and a broad description of their role (e.g. U59, Young person's homeless support worker). The user interviews ranged in length from 21 to 129 minutes. Stakeholder interviews ranged from 38 to 86 minutes.

[1]Headshops are retail outlets that specialize in drugs paraphernalia typically used for the consumption of cannabis and tobacco, and items related to cannabis culture, as well as other substances and related countercultures.

Data analysis

All the interviews were transcribed verbatim and imported into NVivo10, a qualitative data analysis software package (QSR International 2019). The analysis was undertaken thematically (Braun and Clarke 2006), with a single structured coding system created for both users and stakeholders (Bazeley and Jackson 2013). The system comprised a hybrid of both inductive (from the interviews) and deductive (from the research questions) codes (Fereday and Muir-Cochrane 2006). All three authors undertook the analysis independently, and the themes that iteratively arose were crosschecked, discussed and agreed upon (Neale et al. 2005). The agreed themes were the extent of SCRA use, the ease of access to SCRAs, their low cost, the motivations for the onset and continuation of use, and the harms connected to the use of SCRAs. These themes structure the following findings.

Setting the scene: the extent of SCRA use, ease of access, and value for money

Before making our argument about the motivations for using SCRAs, we begin by setting the scene and highlighting the perceived scale of SCRA use within the homeless population in Manchester. In line with research within the UK prison population (Ralphs et al. 2017), the use of SCRAs was reported to be widespread within the homeless population in Manchester, regardless of whether users were living on the streets or in temporary accommodation (see also Alexandrescu 2019).

> It's everywhere, it's absolutely everywhere. … It's really rife [among Manchester's homeless]. (U29, male, early 20s, street homeless)

The perception of many interviewees was that 'everyone' they knew was using SCRAs. We recognize that this perception is unsurprising; especially as the criteria for being included in the study was being a current/recent SCRA user. As other research has found, a relationship exists between a person's substance use and that of their social network (Kandel and Davies 1991; Latkin et al. 1995; Klee and Reid 1998a; Costenbader et al. 2006; Buchanan and Latkin 2008; Gomez et al. 2010). It is therefore highly likely that the interviewees' peers were users too, which no doubt fed their perception that SCRAs were 'everywhere'. Nevertheless, those working directly with this population perceived the use of SCRAs to be similarly widespread. For example, it was common for homeless outreach workers and homeless drop-in staff to note how the use of SCRAs was pervasive among the people they were working with.

> I've probably got about 40 clients on my caseload at the minute who are street homeless. Of them, I'd say about 95 per cent of them take Spice [SCRAs]. (U59, Young person's homeless support worker)

> You'd be surprised how many [homeless] people [use SCRAs]. … I'd say 99 per cent of them are Spice heads [use SCRAs]. (U1, Homeless support worker)

Furthermore, it was reported that homeless substance users were replacing the use of those substances traditionally associated with this population (Klee and Reid 1998a, 1998b; Fountain and Howes 2002; Baer et al. 2003; Fountain et al. 2003; Gomez et al. 2010) with SCRAs.

> A lot of my friends have given up heroin and crack addictions, and they now smoke the Spice [SCRAs]. I'm the same. I've given up an alcohol, crack and heroin habit, and [now] I just smoke Spice [SCRAs]. (U2, male, mid 20s, supported housing)

In the context of the perceived widespread use of SCRAs within the homeless population in Manchester, we turn to explore how SCRAs are accessed. The use of SCRAs was initially facilitated by the existing legal market that provided an easily accessible supply. In the UK, prior to the introduction of the *Psychoactive Substances Act* in May 2016, the majority of local outlets that sold 'legal highs'[2] were typically located in city centers. In Manchester, our observations in city center headshops and newsagents found that they sold 1.0 or 1.5-g packets of SCRAs for £10. Many headshops and newsagents also offered deals such as three packets for £20. Thereby providing SCRA users with much more than a typical £20 street deal of cannabis, which would only contain 1.2–1.5 g of cannabis (Salinas 2014; DrugWise 2017). Furthermore, due to the potency of SCRAs – with current strains reportedly over 700 times more potent than cannabis (Banister et al. 2015a; Banister et al. 2015b; Adams et al. 2017; HM Inspectorate of Probation and the Care Quality Commission 2017) – a much smaller amount was required to mix with tobacco per 'joint'. Users reported they could make between 20 and 40 joints from one packet when they first started using, making SCRAs particularly appealing to the economically disadvantaged homeless population. Indeed, many homeless SCRA users we interviewed highlighted the ease of access to SCRAs and low price as primary drivers for use.

> I'm only smoking it [SCRAs] because it's so readily available and it's cheaper than weed [cannabis]. (U52, male, mid 20s, street homeless)

> It's more available than ever now [since the 2016 Psychoactive Substances Act]. I don't even have to move off my [begging] spot no more. They [dealers] just serve it [SCRAs] up wherever you're sat. (U19, male, mid 20s, supported accommodation)

> The ban [2016 Psychoactive Substances Act] hasn't changed anything, … it's not stopping people from taking it [SCRAs], you know what I mean, not at all. It's just changed where people get it from. (U17, female, late teens, street homeless)

As evidenced, despite the 2016 *Psychoactive Substances Act* leading to the demise of high street outlets in the UK, SCRAs remain easily accessible to the homeless population. As was the case in Poland and Ireland (European Commission 2014; McVeigh 2015; Bujalski et al. 2017), rather than reducing use, tougher legislation has simply displaced SCRAs from the high street to the illegal street market (Gray and Ralphs 2016; Ralphs and Gray 2017; Home Office 2018a). The continued availability of SCRAs can be explained, in part, by the continued demand for SCRAs; a demand driven largely by the main motivations for SCRA use that we now outline.

The enduring popularity of SCRAs: motivations for use

Given the unique and challenging environments the homeless population find themselves in, it is important to explore the specific motivations they have for using SCRAs. While ease of access and value for money were key factors in facilitating the onset and continued use of SCRAs among our sample, interviewees outlined a number of specific motivations associated with the use of SCRAs that accounted for their continued use beyond the introduction of the 2016 *Psychoactive Substances Act*. In line with existing research (see MacLeod et al. 2016; User Voice 2016; Ralphs et al. 2017), these included their non-detectable nature, their ability to provide an escape from the reality of life on the streets, and to prevent the onset of unpleasant withdrawal symptoms.

Mirroring the findings from research within the UK prison population (Ralphs et al. 2017), SCRAs appealed to our homeless sample because of their non-detectable nature. Homeless users of SCRAs discussed being able to openly consume these substances in public settings, and/or being able to avoid detection (and therefore sanctions) in accommodation with zero tolerance substance use policies.

> I can sit anywhere I want and blaze [smoke] a Spice [SCRA] spliff and nobody, no police or anybody, can do anything 'cos they'll never know. … No smell you see. (U40, male, mid 20s, street homeless)

> You see, in here now [bail hostel], to be honest, I can't drink or smoke weed [cannabis] and get away with it. You get breathalysed when you come back in and they can smell the skunk [cannabis] in your room. So instead of smoking weed, … I smoke Spice [SCRAs]. (U43, male, late 30s, probation bail hostel)

As researchers have found in other settings, the non-detectability of SCRAs in MDTs is a key motivator for use (Bebarta et al. 2012; Barratt et al. 2013; Perrone et al. 2013; Ralphs et al. 2017). As noted, many of the SCRA users interviewed for this study were living in temporary accommodation that had a zero tolerance policy to substance use. Enforcement of this policy often involved MDTs. Our homeless interviewees discussed how they were consuming SCRAs to avoid a positive test.

> The only reason I have Spice [SCRAs] is because I'm on a drugs test for weed [cannabis]. … If I wasn't on a drugs test, I wouldn't be smoking Spice [SCRAs]. (U42, male, mid 20s, probation bail hostel)

> The main thing is it [SCRAs] doesn't show up in your blood system whatsoever, like cannabis will, so that's why people smoke it [SCRAs]. (U38, male, mid 20s, probation approved premises)

[2]The term 'legal highs' was a widely used umbrella term in the UK to describe new psychoactive substances such as SCRAs prior to the 2016 *Psychoactive Substances Act*.

The inability, at the time of our research, of MDTs to detect SCRAs was corroborated by professionals working with the homeless population, as illustrated by the following extract from an interview with a member of staff at a probation approved premises.

> Our drug tests show cannabis, benzos [benzodiazepines], amphetamines, methamphetamines, opiates and cocaine. … While I was actually testing him, he was clearly under the influence of something – he could hardly sit up in his chair, he was slurring his speech. … [But] he came back negative for everything, which would probably indicate that he's been using legal highs [SCRAs]. (U31, Probation approved premises staff)

The non-detectability of SCRAs, particularly in MDTs, for those living in probation accommodation or subject to drug testing in other temporary accommodation, provides clear evidence of the appeal of these substances beyond the secure prison estate (see also Grace et al. 2019). It is evident that the non-detectability of the smoking of SCRAs in public places and temporary accommodation is an additional significant factor in their appeal for those spending time in public places and/or living in accommodation with zero tolerance policies toward substance use.

Other primary motivations identified for the use of SCRAs revolved around the particular functions these substances could provide, especially in the context of homelessness. A commonly cited motivation for the use of SCRAs among our homeless interviewees was that they provided an escape from the reality of their daily lives. Studies of SCRA use within the secure prison estate highlight their functional nature and how they are used as a 'bird killer' (User Voice 2016), to provide a 'head shift', and to 'take away the bars' (Ralphs et al. 2017, p. 63). In line with this small body of prison research, homeless SCRA users discussed how SCRAs offered respite from the day-to-day experience of life on the streets, helping users to keep warm, forget problems, and/or pass the time.

> I know this might sound daft yeah, but when you are on the streets and you smoke Spice [SCRAs], it makes you feel warm, like you've got a warm blanket around you. (U27, male, mid 20s, street homeless)

> Spice [SCRAs] makes this life [on the streets] bearable, you get me? It numbs you. It just takes you out of your present situation. When that situation is life on the streets, and that can be fucking hard, then that makes it [SCRAs] a fucking perfect drug for the homeless. (U8, male, mid 20s, street homeless)

> Spice [SCRAs] makes life on the street fly. I worked out the other day, I've been homeless now for over two and a half years, it feels like a couple of months. That's the Spice [SCRAs]. It alters your perception of time and reality. (U48, male, early 20s, street homeless)

In addition, those living on the streets recounted the difficulty they experienced in getting to sleep in public spaces due to feelings of vulnerability. In this context, SCRAs functioned to facilitate sleep.

> It helps you sleep. [The] amount of times I've done that in the car park I used to sleep in. Spice [SCRAs] knocks you to sleep. (U28, male, early 20s, supported homeless accommodation, ex-street homeless)

> A spliff of Spice [SCRAs] knocks you out. [It's] like being hit by a truck. (U6, male, mid 20s, street homeless)

These findings are consistent with those from research undertaken with homeless substance users prior to the rise in popularity of SCRAs (see Klee and Reid 1998a, 1998b; Fountain and Howes 2002; Baer et al. 2003; Fountain et al. 2003; Gomez et al. 2010). For example, these earlier studies found that substances (most commonly cannabis, heroin and crack cocaine) were used to alleviate the stress of life on the streets (Klee and Reid 1998a, 1998b; Thompson 2005) and to help users keep warm (Ayerst 1999). Indeed, Klee and Reid (1998a, p. 132) noted how substances were used as a coping strategy for 'dampening pain, lifting mood, inducing sleep and offering a protective mental anesthesia' against the stressors of life on the streets. When the effects of SCRAs outlined above are combined with their low price and the ease with which they can be accessed, the enduring popularity of SCRAs becomes more understandable, despite attempts to legislate against their use.

Green heroin? Addiction, dependency, and tolerance

Research in the US has found that SCRAs are highly addictive and have the potential to lead to severe dependency (Zimmermann et al. 2009; Every-Palmer 2011). This is supported by UK prison research (Forward 2015; Ralphs et al. 2017), resulting in current UK clinical guidance acknowledging that 'SCRAs have a potential for misuse and dependence' (Abdulrahim and Bowden-Jones 2016, p. 11). In our study, many of the homeless interviewees – who often reported considerable lifetime experience of using heroin, crack cocaine and a range of licit and illicit substances – consistently described SCRAs as being more addictive than other substances they had used.

> Spice [SCRAs] is definitely the most addictive [substance]. (U46, male, late 20s, street homeless)

> It just rules your life. If you've not got your Spice [SCRAs], bollocks to everything else, nothing matters in the world. (U32, male, early 30s, street homeless)

> I'm addicted to Annihilation [a popular SCRA]. … It's stronger than any other drug I've ever taken. (U9, male, early 30s, street homeless)

In addition to the practical and functional reasons for SCRA use outlined above, for many interviewees, their continued use of SCRAs was also motivated by a desire to avoid the acute and unpleasant symptoms associated with withdrawal. These included loss of appetite, hallucinations and paranoia, excessive sweating, severe stomach cramps, diarrhea, and vomiting. During our fieldwork, it was common for the research team to observe some of these symptoms first hand, witnessing users visibly shaking, sweating profusely, and becoming agitated.

> After a few weeks [of smoking SCRAs] I was waking up sweating me back out and I had to smoke [SCRAs] just to stop the sweating. (U25, male, early 20s, street homeless)

> It [withdrawing from SCRAs] is horrible. Hallucinations, stomach cramps, shits, being sick, can't eat nothing, paranoia, everything. (U7, male, mid 30s, street homeless)

> I'm an ex-heroin user and the feelings are the same [when you're withdrawing from SCRAs]. You get no sleep, hot and cold sweats, spewing up, diarrhoea. It's horrible. (U9, male, early 30s, street homeless)

In line with the last quote, professionals working with this population frequently noted the similarities to heroin in the way that SCRAs were negatively affecting users.

> I see this drug [SCRAs] as almost a comparison to heroin, in the way it's affecting people. (U47, Supported housing staff)

> Some [SCRA users] are aligning it to heroin withdrawals. So the flu like symptoms, the stomach cramps, the sweating, the irritation. (U72, Homeless day centre manager)

Despite the potent strains of SCRAs that were available during the research period (see Banister et al. 2015a; Banister et al. 2015b), some users reported quickly establishing high levels of tolerance. Indeed, the research team frequently witnessed homeless users putting around half a gram of SCRAs into a single joint.

> I first started at half a gram and I'd probably get about 30 spliffs out of it. … Now I'm up to smoking seven grams [a day]. (U39, male, mid 20s, supported housing)

> When I started smoking it, I only had to put a little bit in it. … [But] by the time I was coming off it, I was putting half a gram in a joint. (U11, male, early 20s, supported accommodation)

As we have illustrated so far, there are a range of key motivations for the onset and continued use of SCRAs within this population. These include their potency, low cost, accessibility, non-detectable nature, their ability to enable users to escape the reality of life on the streets, and to allay acute and unpleasant withdrawal symptoms. Alongside these motivations, a consistent theme that arose from the interviews was the harms – to individual users, the homeless population, and wider society – that were directly attributed to SCRA use.

Harms: physical, mental health, and societal

We have already outlined some of the physical harms associated with the use of SCRAs, i.e. the intense withdrawal symptoms. Other reported physical harms included weight loss.

> I used to smoke [SCRAs] all day, every day. … I lost a lot of weight. I looked like a crackhead, like a full on crackhead. (U6 Male, mid 20s, street homeless)

Alongside weight loss, and in line with other research (see EMCDDA 2018a), interviewees reported often losing consciousness and receiving emergency medical treatment after using SCRAs. One of our interviewees discussed how when she was using SCRAs daily, she was hospitalized three or four times per week because of repeatedly losing consciousness. Furthermore, SCRAs have also been linked to deaths worldwide (EMCDDA 2018a; Doyle 2019; ONS 2019a). Our homeless interviewees were fully aware of the risk of death connected to the use of SCRAs.

> I want people to realise what it [SCRAs] is doing, know what I mean? Like what it's like. It's killing us all. We're slowly getting killed. (U17, female, late teens, street homeless)

This risk should be understood in the context of a 25% increase in deaths among the homeless population in the last 5 years in England and Wales (ONS 2019b). In 2018, there were an estimated 726 deaths of homeless people in England and Wales, 129 (22%) more deaths than in 2017 (ONS 2019b). Furthermore, the ONS (2019b) reported that drug-related deaths in England and Wales have reached an all-time high. Deaths related to synthetic cannabinoids have more than doubled from 24 in 2017 to 60 in 2018 (ONS 2019a). Most of our homeless interviewees were able to recall at least one person they knew whose death they believed was attributable to the use of SCRAs.

> My mate died in front of me on it [SCRAs]. (U63, male, mid 30s, street homeless)

> I've seen two people die off it, from having a fit through Spice [SCRAs], and then not being able to come out of the fit. (U41, male, mid 20s, sofa surfing)

> I've actually seen someone die. Police were zapping him trying to get him back to life. (U12, female, late teens, street homeless)

In addition to this physical risk, our homeless interviewees also believed the use of SCRAs was negatively affecting their mental health. Mental health problems are particularly prevalent within the homeless population (Homeless Link 2014). It is important to acknowledge that many of our sample were living in challenging environments (such as sleeping rough on the city center streets) which could induce poor mental health and/or aggravate existing mental health problems. It is therefore difficult to attribute any negative impact on users' mental health solely to the use of SCRAs. Nevertheless, in line with other research, many of our interviewees were adamant that their mental health problems had not existed prior to using SCRAs (Castellanos et al. 2011), or if they had, the use of SCRAs had exacerbated them (Every-Palmer 2011; Papanti et al. 2013; Fattore 2016; MacLeod et al. 2016; Ralphs et al. 2017). For example, some of our interviewees discussed how SCRAs had triggered a range of mental health problems.

> Heavy bouts of psychosis and depression, crippling depression. … It's mad, proper crazy, like a whole different dimension. (U18, male, mid 20s, supported accommodation)

> I started hearing voices … I thought I could send messages and that through my own mind without speaking. It was horrible. (U14, male, early 30s, street homeless)

> I don't think I had anxiety before smoking Spice [SCRAs], I really don't. (U4, male, early 20s, supported accommodation, ex-street homeless)

Others emphasized how SCRAs had aggravated preexisting mental health problems.

> I've got mental health problems anyway, previous to the Spice [SCRA use], [but] the Spice [SCRAs] has amplified them. (U30 Male, mid 20s, Probation approved premises)

> I've got paranoia and anxiety [anyway] but it [SCRAs] makes it a lot worse. (U57, male, early 20s, street homeless)

In addition to the physical and mental health harms described above, a range of societal harms were identified. As previously discussed, some interviewees reported quickly building up tolerance to SCRAs that resulted in them using large quantities per day. Others noted how they needed to use SCRAs daily to prevent the onset of acute and unpleasant withdrawal symptoms. Consequently, despite SCRAs being relatively cheap to buy, interviewees reported spending up to £50 a day on SCRAs; an amount similar to that required to fund a heroin and/or crack cocaine dependency (Harocopos et al. 2003; Bennett and Holloway 2008). Many of those interviewed for this study described committing offenses – ranging from low-level acquisitive crime to more serious violence – to fund, or partially fund, their daily use of SCRAs.

> The majority of people [users] have to commit crimes. The others sit down and beg. (U51, male, mid 20s, sofa surfing and street homeless)

> [So people are committing crime … ?] Yeah, a lot. Shoplifting, car theft, robbing. I've seen people do all sorts. (U36, male, mid 30s, street homeless)

Some female interviewees also described how they had become involved in sex work to pay for SCRAs.

> I've got to prostitute myself tonight because I owe people a lot of money [for SCRAs], a lot of money. (U17, female, late teens, street homeless)

Some of the main motivations our homeless interviewees identified for using SCRAs – such as to avoid detection in MDTs, to make life on the streets tolerable, and to fend off withdrawal symptoms – have made SCRAs highly valued within this population, particularly through the night when access was limited. In the US, Bourgois (2009) characterized the homeless heroin user population as one which looks out for, and supports, each other. In sharp contrast, our interviewees frequently told us about occasions when homeless SCRA users were victims of crime committed by other homeless users of SCRAs. Many of our homeless interviewees recalled how quickly they, or users they knew, would get agitated, aggressive and violent if they were unable to obtain SCRAs, and would use violence as a means to acquire them.

> If they've not got it [SCRAs], they'll stab you for it, they'll batter you for it. (U34, male, late 20s, street homeless)

> They're slashing people up. That's how far people are willing to for Spice [SCRAs]. (U76, male, mid 20s, street homeless)

Yet, by doing so, those involved in committing these crimes were perceived to be transgressing an unspoken code.

> We [the homeless population] used to stick by each other, we used to be literally like "If someone messes with you, you got to mess with all of us". … And now we're lifting [stealing from] each other for the Spice [SCRAs]. (U26, female, late teens, street homeless)

> People [in the homeless population] do things [now] that they would never have done, … like rob off your friends. … And you know you're leaving him sweating tonight because you're taking it [SCRAs]. But I need it. Either he's sweating, or I'm sweating. (U32, male, early 20s, street homeless)

Discussion and conclusions

By endeavoring to provide a platform for the voices of marginalized homeless users of SCRAs – voices that are too often absent from current discourses on SCRA use – this article highlights the reasons why SCRAs remain popular and widely available within the homeless population, despite the introduction of legislation aimed at restricting their supply. In line with previous studies on substance use and homelessness, this article has demonstrated that the motivations for SCRA use are broadly similar to those associated with cannabis, heroin and crack cocaine; namely to escape from the reality of life on the streets, and to provide relief from the physical conditions of a street-based lifestyle. However, when compared to cannabis, heroin and crack cocaine, the combination of the low cost of SCRAs, the ease with which they can be accessed, their high potency, and their non-detectability (in both public places and temporary accommodation) explains their particular appeal to the economically disadvantaged homeless population.

While this helps to explain the enduring popularity of SCRAs within the homeless population, another key finding is the unique set of harms associated with SCRA use within this population. In contrast to earlier studies that identified the use of cannabis, heroin and crack cocaine to self-medicate the symptoms of physical and mental health problems (Klee and Reid 1998a, 1998b; Fountain and Howes 2002; Homeless Link 2014), SCRA users identified a range of physical and mental health harms that were often directly attributed to SCRA dependency and addiction. In addition, the rapid build-up of tolerance reported by users resulted in a range of societal harms, within both the homeless population, and wider society. Collectively, it is evident that the emergence of SCRA use within the homeless population has made life on the streets more unpredictable and hazardous. With this set of harms in mind, it is clear that there needs to be a response to the use of SCRAs within the homeless population. Whether this response should take the form of further legislative change, or alternatively, a change in service approach will now be discussed.

In contrast to legislation that has been introduced to restrict the use and supply of SCRAs (Department of Justice and Equality 2010; Malczewski 2011; Parliamentary Counsel Office 2013; Home Office 2016), it has been argued that one of the solutions to the use of SCRAs within the homeless population is to decriminalize or regulate cannabis (Nutt 2017; Transform 2018). The rationale being that if cannabis were no longer illegal, then SCRA users would switch back to using cannabis. These arguments are based on the premise that countries such as the Netherlands and Portugal, which have more progressive cannabis policies, have very low reported levels of SCRA use among both the general population and vulnerable populations (European Commission 2011, 2014; EMCDDA 2018a, 2018c). Our findings challenge this

policy proposal. What is abundantly clear from the homeless user narratives in this study is that the motivations for SCRA use are clearly distinct from those associated with the recreational use of cannabis, and serve specific functions in the context of homelessness. As such, we assert that cannabis policy reform will have limited impact on SCRA use within the homeless population. At the other extreme, there are increasing calls for SCRAs to be classified as Class A substances, like heroin and cocaine (House of Commons 2018). While the individual and societal harms of SCRAs reported in this study are comparable to those associated with heroin (Parker and Newcombe 1987; Pearson 1987; Parker et al. 1988), we caution against the temptation to reclassify SCRAs. Not only has it been found that there is no correlation between the 'toughness' of a country's substance use legislation and the extent of use (Home Office 2014; Stevens 2019), but reclassifying SCRAs could potentially increase the harms associated with their use (Hammersley 2010; Dargan et al. 2011).

Considering the limitations and potential problems associated with further legislative change, we argue that a more appropriate and effective way to address the use of SCRAs within homeless populations is through the development of a service response that better meets the needs of homeless SCRA users, and reduces the harms that we have identified in this article. Current public health guidance suggests that, when it comes to managing dependent use of SCRAs, practitioners should 'adopt the evidence-based approaches used for other drugs – particularly natural cannabis' (Abdulrahim and Bowden-Jones 2016, p. 13). This approach was informed by the view that, when they first became popular, SCRAs were perceived as a relatively harmless and legal alternative to natural cannabis (Blackman and Bradley 2017). Our findings contest this current guidance, with users recounting harms more aligned with dependent heroin use than cannabis use (Parker and Newcombe 1987; Pearson 1987; Parker et al. 1988; Diplock et al. 2012). With this in mind, medically supervised community detox and in-patient rehabilitation needs to be readily available to dependent SCRA users (Ralphs and Gray 2017). Furthermore, in light of the widely reported impact of SCRAs on users' mental health, it is imperative that existing treatment services have the capabilities to address the co-existence of mental health problems and substance use. In our view, this tailored service response would provide a holistic and more effective solution to SCRA use within the homeless population than further legislative change.

These findings have implications for future research agendas. This research adopted a purposive sampling strategy that targeted current/recent SCRA users. For a more accurate estimate of prevalence, there would be value in conducting research with a representative sample of the homeless population. Furthermore, this article is based on research within the homeless population in one city in the UK. While there is no reason to expect different findings in other UK cities, it would be worthwhile conducting studies of SCRA use within the homeless population in other cities, both in the UK and around the world. Finally, the reported detrimental relationship between SCRAs and users' mental health is an area that warrants further investigation.

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