A Qualitative Study of the Misuse and Diversion of Prescription Only and Over-the-Counter Medication

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Submitted to the Welsh Government December 2019

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Acknowledgements

The University of South Wales would like to say a very big thank you to all the people who provided their time to talk to us about their personal experiences of the misuse and diversion of prescription-only and over-the-counter medication. We appreciate that discussing these issues can be difficult and we are indebted to them for their candour.

We are also very grateful to those with the professional experience of commissioning, managing or delivering opioid substitute treatment for taking the time to complete our rather long online survey in such detail. Without the input of our interviewees and survey respondents, we would not have been able to learn the valuable lessons that we have.

A special thank you is extended to Dr Julia Lewis for her help in designing the survey and to Elwyn Thomas for helping to disseminate the survey far and wide across Wales.

1.0 Introduction

This report presents the results of a study that investigated the misuse and diversion of prescription-only-medication and over-the-counter-medication (POM/OTC) among people who use illegal drugs. The study was conducted by a team of researchers from the University of South Wales in collaboration with Dr Rhian Hills from the Substance Misuse Policy Branch within the Welsh Government. The research was undertaken across Wales and was based on qualitative interviews with a sample of people who had lived experience of prescription drug misuse, and also included an online questionnaire survey completed by professionals working within the field of substance misuse.

The main aim of the study was to identify the causes, patterns and consequences of POM/OTC misuse and diversion among people with a history of illegal drug use.

For the purpose of this document in relation to POM/OTC use, we have used the term nonmedical prescription drug use and its associated acronym (NMPDU) to refer to the misuse of prescription-only medication. Definitions of key terms are presented below and followed by information about the prevalence of NMPDU among both the general and drug-using population.

This is then followed by a brief overview of the potential harms that are associated with this behaviour and the responses that are often used to try to counteract it. The study ends with brief chapter summaries to provide readers with an overview of the report structure and content.

Background

Nonmedical prescription drug use (NMPDU) typically involves the consumption of a prescription-only medication without a doctor's prescription, or in a way not in accordance with prescription guidelines (Bennett, Holloway, & May, 2018; Cicero & Ellis, 2017; Hulme, Bright, & Nielsen, 2018). This could include the consumption of a medication at a higher or more frequent dose, prolonged duration of use, altering of administration routes, and/or concurrent or consecutive use of other medications or illicit substances (Lankenau et al., 2012; Schepis, 2018).

Medications with demonstrated NMPDU includes prescription opioids (e.g. methadone, buprenorphine, oxycodone, tramadol) (Allen & Harocopos, 2016; Dertadian, Iversen, Dixon, Sotiropoulos, & Maher, 2017; Inciardi, Surratt, Cicero, & Beard, 2009), benzodiazepines (e.g. alprazolam, diazepam), (Mateu-Gelabert et al., 2017; Weaver, 2015) and prescription stimulants (e.g. amphetamine, methylphenidate) (McCabe, Veliz, Wilens, & Schulenberg, 2017; Weyandt et al., 2016). Motivations for NMPDU often relate to self-medication (Bennett & Holloway, 2017; Rigg & Ibanez, 2010), to prolong the intensity and duration of other substances (Jones, Mogali, & Comer, 2012; Silva, Kecojevic, & Lankenau, 2013) or to alleviate the severity of withdrawal symptoms or adverse effects of other substances (Chen et al., 2011; Mateu-Gelabert et al., 2017).

Prevalence of NMPDU among the general population

There is some evidence to suggest that NMPDU now exceeds the use of most illicit drugs in some countries (UNODC, 2019). For example, among the general population in the United States, the nonmedical use of prescription painkillers and tranquillisers are behind only the illicit use of cannabis, with 3.3 and 2.0 million people aged 12 or older currently using them non-medically (SAMHSA, 2017). In England and Wales, 6.4% of adults aged 16 to 59 (approximately 2.2 million people) reported that they had used prescription painkillers that had not been prescribed to them in the last year (Home Office, 2019).

These trends are a concern due to the unintended health and social consequences that are often associated with the practice, including rapid tolerance, dependence and fatal and non-fatal overdose, particularly when used in combination with other substances (Hulme et al., 2018; Lyndon et al., 2017; Macleod et al., 2019; Mateu-Gelabert et al., 2017; Schepis, 2018). Indeed, mortality rates linked to prescription medication used either alone or as a component of poly-drug use have increased over the last decade in Australia, Canada, the United States and the United Kingdom (Bennett et al., 2018; Hulme et al., 2018). In England and Wales, noticeable increases in drug-related deaths have occurred in relation to prescription opioids, benzodiazepines, antidepressants and gabapentinoids (ONS, 2019). Given the potential health and social harms associated with the practice, NMPDU is now an

important public health issue worldwide (ACMD, 2016; EMCDDA, 2018; UNODC, 2019).

Prevalence of NMPDU among people who use opioids

NMPDU is particularly widespread among people who use illicit opioids (Jones et al., 2012; Lyndon et al., 2017). For example, data on those in specialised drug treatment in Europe found that 12% of entrants for opioid-related problems reported benzodiazepines as a secondary problem drug (EMCDDA, 2018)[1]. Higher figures for the concomitant use of benzodiazepines among individuals in receipt of methadone have been found elsewhere, ranging from 39.8% in the United States (Chen et al. (2011) to 70% in Germany (Specka, Bonnet, Heilmann, Schifano, & Scherbaum, 2011). Similarly high prevalence rates have been found among individuals in receipt of buprenorphine (46%) (Lavie, Fatséas, Denis, & Auriacombe, 2009), whilst Darke and colleagues have consistently identified the nonmedical use of benzodiazepines alongside heroin (Darke & Hall, 1995; Darke et al., 2010; Ross & Darke, 2000); in one study, 2 out of 3 people who inject heroin reported nonmedical benzodiazepine use within the last year (Ross & Darke, 2000).

Harms and responses to NMPDU

NMPDU is particularly problematic among this population as medications such as benzodiazepines and gabapentinoids can potentiate the harmful effects of opioids - including respiratory depression - thereby increasing the likelihood and lethality of overdose (Jones et al., 2012; Lyndon et al., 2017; Macleod et al., 2019). In many European countries, benzodiazepines are commonly implicated in overdose deaths attributed to the use of opioids (EMCDDA, 2019), whilst between 2004 and 2015 opioids were involved in 79% of gabapentinoid deaths in England and Wales (Lyndon et al., 2017).

The harms associated with NMPDU are one influence on current prescription medication regulations worldwide (Harris & Rhodes, 2013; Mateu-Gelabert et al., 2017; McNeil et al., 2015). The daily consumption of opioid substitution therapy (OST)

[1] Figure based on treatment data from 22 EU countries (Austria, Belgium, Cyprus, Czech Republic, Denmark, Finland, France, Greece, Ireland, Italy, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Turkey, United Kingdom). Figure is considered an underestimate as problems with secondary drugs are not always recorded or reported (EMCDDA, 2018).

medications (methadone, Subutex, Espranor) under the supervision of a pharmacist or healthcare professional remains the recommended best practice for reducing the nonmedical use of these medications (Strang, Hall, Hickman, & Bird, 2010)[2]. Prescription Drug Monitoring Programs (PDMPs) have also been introduced in the United States to collect, analyse and monitor practitioner and patient habits in order to detect the inappropriate or illegal prescribing of medications (Pardo, 2017). In England and Wales, the Advisory Council on the Misuse of Drugs (ACMD) (2016) has recommended that medical practices establish data collection systems to identify patients who are, or are suspected of being, dependent on prescription drugs, and there have been recent calls for doctors to avoid co-prescribing benzodiazepines to opioid dependent patients due to the increased risk of overdose mortality (Macleod et al., 2019).

Report overview

In this first chapter (1.0) we have provided general information about the aims of the study as well as background information to put the research into context.

In the second chapter that follows (2.0), we present a rapid evidence assessment of the literature on prescription drug misuse to show the current state of knowledge on the topic.

Chapter 3.0 provides information about the design of the study, its strategy and the methods of data collection that were used to gather data. This chapter also provides an overview of the methods of analysis as well information about the characteristics of the samples recruited.

Chapter 4.0 is the first of the results chapters, focusing on findings from the interviews undertaken with people with lived experience of NMPDU.

[2] The need for supervised consumption can be relaxed, however, should individuals in receipt of OST show evidence of clinical progress, including compliance with treatment and recovery care plans, changes in drug-taking behaviours (e.g. cessation of injecting) and abstinence (Clinical Guidelines on Drug Misuse and Dependence Update 2017 Independent Expert Working Group, 2017).

This is followed by the second results chapter (chapter 5.0 which presents findings from the online questionnaire survey of professionals with experience of commissioning, managing or delivering OST in Wales.

Chapter 6.0 is the discussion chapter where we reflect on both sets of findings in light of the literature reviewed in Chapter 2.0.

The report ends with a concluding chapter (7.0) in which we summarise the key points and make a series of recommendations for policy (Chapter 8.0), practice and future research.

Followed by Chapter 9.0 for all references including Chapter 10.0 as Appendix A.

2.0 Literature review

In this chapter we present findings from a rapid evidence review of the literature on NMPDU. Our aim is to provide readers with a summary of the current state of knowledge on the topic of NMPDU. The chapter begins with details of the systematic review methods used to identify relevant studies and then moves on to discuss the findings, which have been grouped in key themes.

Methods

The rapid evidence review was undertaken to identify publications relating to the misuse of prescription medication. To this end, searches were undertaken of one bibliographic database, ASSIA. The search term used for the database searches was:

ti(Prescription only medication) AND ti(misuse OR abuse OR diver*)

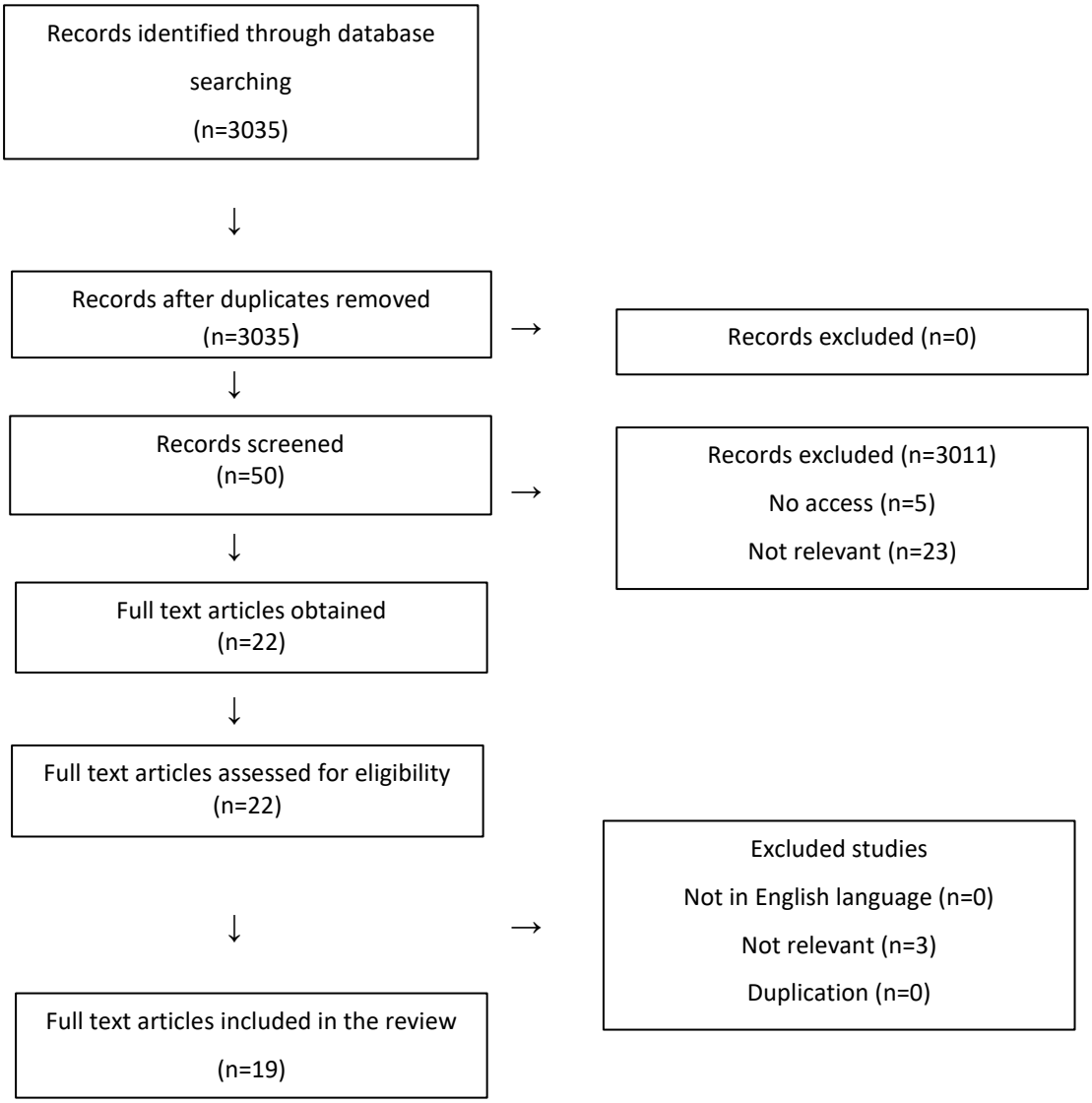
To be eligible for selection, the study had to present the results of study that maintained: (1) a focus on a prescribed medication, and (2) a focus on the misuse of this prescribed medication in some way.

The initial search of the data produced a total of 3036 studies. Based on the large quantity of this search, it was decided that the initial screening would focus on the 50 most relevant studies according to titles, which would then be supplemented by searches of Google Scholar using the same search algorithm. The titles and abstracts of these studies were then reviewed and the full publications obtained when they appeared to match our research interest. The papers from the database search and the references from the published papers were then read and those that met our selection criteria were included in the review.

After excluding five studies (due to them not being accessible) from the fifty most relevant studies, 45 studies were screened based on their title and abstract to determine whether they fit the inclusion criteria. At this point, 23 studies were excluded due to their relevance or based on them missing a part of the inclusion criteria. From this, the remaining publications were then examined more thoroughly to determine

whether they were indeed suitable to include. Another three studies were then excluded due to their relevance, meaning that 19 studies were deemed eligible of meeting the criteria. These searches were supplemented by four more relevant studies found during google scholar searches. Below is a Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow chart (Fig. 1.) detailing the search process.

Figure 2: PRISMA Flow chart of studies identified through the systematic literature search



Thematic coding and summary of key points

The main themes to emerge from the searches related to the following two themes: (1) Motivations and reasons for POM misuse, and (2) sources and methods of POM for misuse. These themes, along with their relevant subthemes, will be discussed in turn below.

Motivations/reasons for misuse

Recreational motives

Recreational motives were found to be a common motive for NMPDU. In all studies suggesting this, it was found that NMPDU frequently occurred in attempts to 'get high', often as a way to take away any boredom that the individual may have felt prior (Alam & Barker, 2014; Carretta et al., 2018; Desantis et al., 2008; Green, 2017; Tete et al., 2005; Quintero, 2009; White et al, 2006). Most papers discussing recreational NMPDU involved student samples, however (Desantis et al., 2008). Quintero's (2009) study on recreational NMPDU among college students for example, suggested that prescription medications were routinely used to experience pleasure and facilitate socio-recreational activities.

Self medication

A small body of research has also acknowledged how NMPDU is used to self-medicate and alleviate legitimate medical concerns. (Harris & Rhodes, 2013; Koester, Anderson, & Hoffer, 1999; Mateu-Gelabert et al., 2017; Richert & Johnson, 2015). Foe example, Harris and Rhodes (2013) detailed how the strategic stockpiling of doses of methadone was used to safeguard against withdrawal. Diverted methadone thus functioned as an 'indigenous harm reduction strategy' that enabled participants to manage their drug use, avoid withdrawal and cement social relationships with other drug users (more information in relation to self medication can be found on page 49).

Similarly, Mateu-Gelabert et al. (2017) noted how the risks associated with concomitant benzodiazepine use were often rationalised and offset by the more immediate priorities experienced by people who use drugs on a daily basis. This included enhancing the effects of one's high or managing withdrawal in situations where opioids were unobtainable. Finally, Richert and Johnson (2015) examined the motives for non-prescribed methadone and buprenorphine use among people with

opioid dependence. It was found that self-treatment with non-prescribed OST medications began as a result of barriers to legitimate OST treatment, including difficulties in accessing and remaining in treatment and a reluctance to engage in OST due to fear of stigmatisation or disciplinary action (for example, involuntary discharge). The findings led the authors to recommend the expansion of OST provision to reduce the illicit demand for these substances.

Existing substance misuse or psychiatric issues:

Among the papers looking at populations likely to engage in NMPDU, histories of substance misuse or psychiatric disorders were often noted (Allen et al., 2014; Carretta et al., 2018). Links between the two were often found in relation to opioid-based prescriptions. For example, Weigel et al (2007) suggested that there was a strong link between psychiatric conditions (including major depressive disorder) suicide attempts and childhood sexual abuse and NMPDU. Further, Bastiaens et al (2016) reported that 26% of their sample of opiate addicted patients reported illegally obtaining, overusing, or malingering to obtain gabapentin.

Attention/grades:

One of the main motivations given for NMPDU was to enhance attention and concentration. This was particularly true for those within academically stressful situations (Desantis et al., 2008). Teter et al (2005) suggested that students used prescription drugs “to help concentrate”; which accounted for the majority of motives given by their sample. Further, Desantis et al (2008) found that 34% of students reported the NMPDU of Attention deficit hyperactivity disorder (ADHD) stimulants. Most participants reported using ADHD stimulants assisted in periods of high academic stress, and found them to reduce fatigue while increasing reading comprehension, interest, cognition and memory.

Sources of POM for misuse

Inappropriate prescribing practices

Inappropriate prescription practices were found to be one of the leading source of medications for NMPDU (Alam & Barker, 2014; Allen et al., 2014; Green, 2017; Ratycz et al., 2018; Schmidt et al., 2015; Worley, 2014). Mack et al (2015) found that 30% of

opioid prescriptions overlapped with other opioid prescriptions. Within the sample, patients obtained an average of 6.3 opioid prescriptions, even with 40% of this sample having at least one indicator of potential misuse. It was also evident that there was a lack of knowledge by both healthcare professionals and the general population in relation to prescription medication, including what is deemed appropriate prescribing practice and how to appropriately assess and manage patients (Green, 2017; Allen et al., 2014; Schmidt et al., 2015; Mayhew, 2010).

Lack of care/monitoring:

Similar to the above, studies suggested that there was a lack of monitoring and care within many healthcare settings for people engaged in NMPDU (Mayhew, 2010). Improvements in this area are suggested by almost all of the papers analysed (Alam and Barker, 2014; Carretta et al., 2018; Mack et al., 2015; Mayhew, 2010; Worley, 2014; Weigel et al., 2007). As such, it was recommended that care and monitoring should be paired with an improvements in prescribing knowledge. This included pain/risk assessments and appropriate duty of care measures (i.e. substance misuse red flags, full attention to diagnoses, and personalised monitoring plans) (Alam & Barker, 2014; Weigel et al., 2007; Worley, 2014).

Doctor shopping/forging prescriptions:

Doctor shopping (requesting specific doctors who participants knew would be more willing to prescribe them medication) and forging prescriptions was found to be a large problem within health care settings and a consistent source of medication for NMPDU (Mayhew, 2010; Schmidt et al., 2015; Weigel et al., 2007; Worley, 2014). Papers tended to focus on doctor shopping and forging from a healthcare perspective, and the ways in which practitioners could alter practice to prevent such use from occurring. They suggest that more care in prescribing practices and increased monitoring need to be utilised in order to reduce or prevent this issue (Mayhew, 2010; Schmidt et al., 2015; Weigel et al., 2007; Worley, 2014).

Peers/family:

Finally, many studies cited peers and family members as a key source of medications for non-medical use (Desantis et al., 2008; White et al., 2006). Rhoades et al (2014) suggested that within the homeless youth population, one-quarter of the population

had obtained free prescription drugs from friends and families. Similarly, Harris and Rhodes (2013) noted that the sharing and giving of methadone to alleviate a peer's withdrawal is a common practice among people who use drugs. The sharing of prescription medication system – which has been referred to as a 'moral economy of sharing' (Bourgois, 1998; Bourgois & Schonberg, 2009) – is often underpinned by an altruistic and emphatic bond between peers: peer groups are often willing to share and support any other person engaged in NMPDU, but there is an expectation that reciprocity occurs if the sharer was ever in future need (Bourgois & Schonberg, 2009; Harris & Rhodes, 2013). Similarly, Alam & Barker (2014) suggested that 30% of their sample who received a medication legitimately frequently diverted it to another person.

Summary

Understanding the use and motives for concomitant NMPDU is an important step in creating pragmatic harm reduction solutions. Yet, despite these studies producing several important findings, there is still more to be learned on this topic (Mateu-Gelabert et al., 2017). Prior research has focused on the nonmedical use of individual medications such as methadone (Harris & Rhodes, 2013) and benzodiazepines (Mateu-Gelabert et al., 2017) alongside opioids, meaning the various functions and motives for the nonmedical use of other medications are less well understood. Additionally, much of the existing research on the NMPDU and its relationship with opioid use has been conducted in the United States (Koester et al., 1999; Mateu-Gelabert et al., 2017; Rigg & Ibanez, 2010), a country where localised prescription regulations and controls have contributed to unique prescription drug use trends among its population (Bennett et al., 2018). Accordingly, there is a need to produce more general research on the motivations for NMPDU among people who use opioids in the UK, particularly in prison settings where it is considered a major concern (Bi-Mohammed, Wright, Hearty, King, & Gavin, 2017).

To conclude, this study aimed to investigate qualitatively the motivations for NMPDU, including its harm reduction and therapeutic potential, among people who use opioids in Wales, UK. Understanding the motivations has the potential to optimise treatment and service provision, including improving access to services and encouraging engagement, and establishing harm reduction interventions for this population.

3.0 Methods

In this chapter we describe the methods that were used to conduct the research. We begin with an overview of the aims and objectives of the study as well as details of the funding arrangements and the timescales involved. The next section focuses on the research design and strategy that underpin the research. This is followed by a description of the choice of methods of data collection and details of how in practice the data was gathered and analysed.

In the next paragraph, details of the ethical approval processes undertaken are presented along with a brief summary of how we adhered to the key ethical principles. The chapter ends with a section in which characteristics of the two samples are presented. The overarching aim of the chapter is to provide readers with a clear appreciation of how the research was conducted, why the chosen approach was adopted and the type of people who participated.

Aims and objectives

The research was commissioned in early 2017 and funded by the Welsh Government (WG) with additional financial support from the University of South Wales[3]. Initially, the brief was to conduct qualitative research on the misuse and diversion of opioid substitution treatment (OST), which had been flagged up in an Advisory Council for the Misuse of Drugs report on drug-related death and in the WG's Substance Misuse Delivery Plan 2016-18 as an area for further investigation. A few months later, WG issued a further amount of funding to extend the research to include the misuse of prescription-only and over-the-counter medicines, which were also highlighted within the 2016-18 Delivery plan.

The original aims of the research were fairly broad. For clarity the research team, in collaboration with WG, narrowed the overarching aims down to the following key objectives:

[3] A significant delay was experienced in starting the research due to the need to obtain NHS ethical approval for including NHS patients. The process obtaining this approval took more than a year to negotiate. This delay, coupled with the project manager's five-month period of maternity leave, meant that the research did not get fully underway until well into 2018.

- To investigate motivations for POM/OTC misuse
- To examine patterns of POM/OTC misuse
- To consider the consequences of POM/OTC misuse
- To investigate motivations for the diversion of POM (including OST)
- To examine patterns of diversion of POM (including OST)
- To consider the consequences of diverting POM (including OST)
- To provide Welsh Government with a report summarising the research findings

As stated in the introduction, it was agreed at an early point in the study period that the research would include two samples: (1) people with lived experience of POM/OTC misuse, and (2) people involved in the commissioning, managing or delivery of substance misuse services. It was also agreed that the samples would differ in terms of the research focus. For those with lived experience of POM/OTC misuse, the research would investigate the misuse of a range of prescription-only and over-the-counter medications, including opioid substitute treatment (OST). However, for those working as professionals in the field, the research would focus on one particular kind of prescription-only medication, namely, OST.

The need to focus the research in this way was driven largely by financial constraints. Funding for the project was limited and conducting, transcribing and analysing interview data is often costly. In consultation with WG, we therefore prioritised conducting interviews with people who had lived experience of the different kinds of drug misuse and opted for a cheaper, but nonetheless useful, online questionnaire survey to investigate the views and experiences of professionals working in the field. In an effort to maximise the response rate, we kept the survey as short as possible, which necessitated a focus on just one type of medication (OST) rather than the exploration of many types. As a result, there is a slight imbalance in that we have more data (from two different perspectives) on the misuse and diversion of OST than on POM/OTC.

Research design and strategy

The study was based on a cross-sectional design in which participants were interviewed or surveyed at a point in time about their experience and understanding of issues relating to the misuse of POM/OTC/OST and the diversion of POM/OST. The strategy adopted was largely qualitative although some quantitative data were

also collected (e.g. demographic details, number of treatment episodes, drug use patterns, professional role, etc.). The focus on qualitative data collection enabled us to gather detailed information about our participants' experience and understanding of the key issues (Bryman 2016).

Research methods

As noted above, the methods of data collection differed by sample. Those with lived experience were interviewed about their experiences while those working in the field were asked to complete an online survey. Further details of each method are outlined below.

Interview study

Semi-structured interviews with people with lived experience of the issues were conducted in statutory and third sector drug treatment organisations operating in five towns and cities across Wales, including two Welsh prisons. The use of semi-structured interviews enabled the collection of in-depth data on personal experiences of NMPDU from the service users' perspective (Bryman, 2016).

Convenience sampling was used to recruit eligible participants. In practice, this involved a combination of methods including: advertising the research via bespoke posters and fliers within agency and prison settings; using key stakeholders working in the field to promote the research to eligible participants on our behalf; and members of the research team promoting the research verbally to potential interviewees in OST dispensing settings. Eligibility was based primarily on whether the person was currently (or previously) a user of illegal drugs and had recent experience of NMPDU.

Interviews were conducted in rooms within the treatment facility or prison using a pre-prepared interview schedule that posed questions about the participant's drug use history and experiences of using prescription medications. The semi-structured nature of the interview allowed for the ordering of questions on the schedule to vary depending on the priority given to each topic by the participant (Barbour, 2007). Data collection concluded once the theoretical saturation of themes occurred, in other words, where instances of data emerged consistently and led to the conclusion that no further data would develop new properties, categories or findings (Strauss, 1999).

Online survey

An online questionnaire survey was used to gather data from professionals with experience of commissioning, managing or delivery OST in Wales. As noted above, the decision to use an online questionnaire survey was made for financial reasons. While we would have preferred to investigate and discuss the issues in some depth with key stakeholders, we did not have sufficient funding to support the conduct, transcription and analysis of any more qualitative interviews. We therefore opted to use questionnaires but ensured that we included a good range of open-ended questions that would generate qualitative data.

A link to the survey was disseminated by email and through social media (i.e. Twitter) using our networks of contacts in the field. The sampling approach was therefore a combination of convenience and snowballing methods. Eligibility was based primarily on whether the person was working in the field and had experience of either commissioning, managing or delivering OST in Wales.

Ethical issues

Ethical approval was obtained from the following three organisations:

(1) The Faculty of Business and Society Research Ethics Committee at the University of South Wales,

(2) Her Majesty's Prisons and Probation Service (HMPPS), and

(3) The NHS Research and Development Committees of participating Health Boards in Wales (following centralised NHS Research Ethics Committee (REC) approval).

Participation in the research was voluntary and all participants were provided with details verbally and/or in writing about the nature and purpose of the research and what their participation would involve. Interviewees were advised that their responses would be kept confidential, unless they expressed an intent to harm themselves and/or someone else. Survey respondents were informed that the survey was anonymous and that their responses could not be linked back to them. Nevertheless, they were advised to avoid mentioning any names or identifying information in their questionnaire responses.

While all interviewees were asked to sign a consent form to indicate their agreement to participate, survey respondents were informed at the start of the survey that completing the survey implied that they had consented to take part. Interviewees were advised that they could stop the interview at any point and withdraw from the study at any point up until the point of starting the data analysis. Survey respondents were advised that they could leave the survey at any point up until they had clicked FINISH at the end. At this point, their survey responses would be submitted and, given the anonymous nature of the survey, it would no longer be possible to withdraw their data.

Methods of analysis

Interview study

With the permission of participants, interviews were digitally recorded and subsequently transcribed securely by Avonlea Services Ltd. Audio recordings were deleted once this process was completed. Written transcripts were printed out for each member of the research team and electronic versions were uploaded to NVivo version 12 software to enable computerised data analysis. Initially, the hard copy transcripts were read independently by the four researchers, who highlighted and discussed emerging open codes of potential significance to the research objectives. A preliminary coding framework was subsequently developed and this was used to guide the coding of the electronic transcripts in NVivo.

During the second stage of the data analysis, one member of the research team (TM) used the preliminary framework to code the transcripts electronically. The coding process was quality assured by two other members of the team (KH and MB). Any new themes emerging from the second stage of data analysis were discussed among the four team members and new codes were subsequently developed and utilised. This process helped to ensure that the final extracted themes were not just the personal interpretation of one team member but borne out of the data. Hence, the themes were generated without prior hypothesis (although we were guided by previous research) and instead relied on the inductive emergence of theory from the empirical data to support conclusions, in the context of a grounded theory approach (Glaser & Strauss, 1967).

Survey data

The survey was designed in Online Surveys[4], which is GDPR compliant, and at the end of the study the data was exported directly into Statistical Package for the Social Sciences (SPSS) for analysis. The quantitative data was analysed using simple frequency counts and cross-tabulations where appropriate. The qualitative data was analysed by sorting the responses for each question alphabetically (to begin the coding process) and reading them through carefully before finalising the codes.

Similar ideas and concepts were subsequently coded into new quantitative variables. This fairly time consuming method facilitated the researchers to gauge the general weight of opinion on particular issues but more importantly to categorise the responses and identify different examples suitable for discussion. Verbatim quotations were subsequently extracted from the original variables and used to illustrate key points within the text of the report.

Sample characteristics

In this section we provide information about the characteristics of the people who participated in the study. We begin with a summary of the interview sample and end with a more detailed description of the survey respondents[5]. Our goal here is to demonstrate that our samples are credible and that we recruited the right kind of people with the right kind of experience (professional and/or personal) to help us answer our research questions.

Interview sample

Interviews were conducted with 60 people during the course of the study. Most interviewees were recruited through HMPPS including 29 prisoners and nine offenders under criminal justice supervision within the community. The remaining interviewees were recruited through third sector drug treatment providers (n=11) and statutory NHS services (n=11). The number of NHS patients included in the sample is disappointing, particularly given the lengthy process of securing National Health Service (NHS)

[4] https://www.onlinesurveys.ac.uk/

[5] The survey was able to ask a wide range of questions about the survey respondents whereas the interviews had to be more focused on the key issues in order to maximise efficiency and get the best value for money.

ethical approval. The main problem that we faced was the general reluctance of staff in statutory services to allow us the time and space to recruit interviewees directly.

Like most people engaged in substance misuse treatment in Wales, most of the interviewees were male (90%), white (90%) and in their mid-30s (Public Health Wales, 2017). All of them had histories of illegal drug use and most were currently using heroin and/or other illegal drugs. The majority of interviewees reported histories of nonmedical prescription drug use and many described current nonmedical use of prescription medicines. The most commonly used prescription drugs were mirtazapine, gabapentin and pregabalin and diazepam.

Survey sample

The majority of survey respondents were female (69%) and most were White British (92%) (See Table 1). Just over half described their nationality as Welsh (53%) while just over one third described themselves as British (36%).

Table 1 Demographic characteristics of the survey sample

Characteristic	**N**	**%**
Sex		
Male	22	31
Female	49	69
Ethnic group		
White British	67	92
Other	6	8
Nationality		
Welsh	39	53
British	26	36
English	6	8
Other	2	3

The survey respondents were varied in terms of the professional roles that they played in relation to OST (see Table 2). The largest proportion were drug workers (37%) followed by managers (22%), pharmacists (11%) and nurses (11%). However, the sample also included commissioners (5%), social workers (4%) and consultant psychiatrists (3%). The diversity of roles played by respondents enabled us to explore

the issues from a variety of perspectives and subsequently enable us to draw a more complete picture of the misuse and diversion of OST in Wales.

Table 2 Primary professional role of the survey sample

Characteristic	N	%
Commissioner	4	5
Consultant psychiatrist	2	3
Drug worker [1]	27	37
Manager	16	22
Nurse - prescribing	2	3
Nurse - other	6	8
Pharmacist/Pharmacy technician	8	11
Social worker	3	4
Other [2]	6	8
Total	74	100

Notes: [1] Included: drug workers, outreach workers, community rehabilitation workers, recovery workers, peer recovery workers, substance misuse healthcare support worker. [2] Included: unspecified roles such as 'third sector', deliverers of 'cessation courses'.

Perhaps unsurprisingly given the mixture of roles played by respondents, there was also considerable diversity in terms of the type of organisation that survey respondents worked for (see Table 3). More than half (57%) worked in the third sector for voluntary organisations, while one-fifth were employed by the NHS and one-tenth by HM Prison Service. The remainder were employed by either a Local Authority (including Area Planning Boards), Social Services or pharmacies.

Table 3 Type of organisation

Characteristic	N	%
NHS	15	20
Prison	7	10
Probation	0	0
Community Rehabilitation Company	2	3
Third sector	42	57
Pharmacy	2	3
Social Services	4	5
Area Planning Board/Local Authority	5	7
Other		
Total	74	100

Notes: Some missing cases. Multiple responses possible.

While respondents were recruited from all seven Health Board areas in Wales, the Health Board areas were not equally represented in the research. Caution must therefore be taken when extrapolating the findings across all areas of Wales. The largest proportions of respondents were based in Aneurin Bevan University Health Board (38%) and Cardiff and Vale University Health Board (27%). The smallest proportion of respondents were based in Hywel Dda University Health Board (1%). This disparity may in part be explained by the fact that despite obtaining NHS Research Ethics Comitee approval we were unable to obtain NHS Research & Development approval in some areas. This subsequently hindered the wider dissemination of the survey to non-NHS staff working in those areas.

Table 4 Health Board Area(s) in which survey respondents worked

Characteristic	N	%
Abertawe Bro Morgannwg University Health Board	5	7
Aneurin Bevan University Health Board	28	38
Betsi Cadwaladr University Health Board	10	14
Cardiff and Vale University Health Board	20	27
Cwm Taf University Health Board [1]	12	16
Hywel Dda University Health Board	1	1
Powys Teaching Health Board	6	8
Other [2]	2	3
Total	74	100

Notes: Multiple responses possible as some respondents worked in more than one health board area. Some missing cases. [1] On 1 April 2019 Cwm Taf University Health Board changed its name to Cwm Taf Morgannwg University Health Board (UHB) as it took responsibility for providing healthcare services for the people in the Bridgend County Borough area. [2] No further details were provided for these two 'other' responses.

The survey respondents had been in their professional roles for an average of just over eight years [6] ranging from 6 months to 24 years. Most respondents had experienced at least one year in the role while one-third had at least 10 years of experience. The sample can therefore be viewed as a credible one with considerable experience to draw upon when completing the survey questionnaire.

[6] N=68, range 0.5-24 years, standard deviation of 6.4 years.

Table 5 Length of time in professional role

Characteristic	N	%
<1 year	4	6
1-4 years	20	29
5-9 years	19	28
10-19 years	18	24
20+ years	7	10
Total	74	100

Notes: Some missing cases.

At the start of the survey respondents were informed that the research was targeting people working in the field of substance misuse in Wales. It also advised them that the research was seeking the experiences of as many people as possible with regard to the use, misuse and diversion of OST. Most respondents were involved in providing professional support to be people in receipt of OST (70%) and approximately one-third (34%) of respondents were directly involved in the decision to prescribe OST to patients. However, some respondents were not involved directly in either prescribing or supporting patients (e.g. they were commissioners or managers) but they nevertheless had views on issues relating to OST that they were willing to share.

The majority of respondents (n=33, 45%) who provided support to OST patients described themselves as some kind of support worker (e.g. case worker, key worker, support worker, recovery worker, peer worker, criminal justice worker, harm reduction worker). Other support roles included: nurses, prescribers, managers, supervisors, pharmacists, and social workers. Interestingly, when asked about the size of their caseload, a wide variety of answers were provided. Among those with a caseload who gave a clear answer, the size ranged from 1 to “350+” with most clustering around the 30-50 level. Less clear answers included comments such as: “I work in a tier 2 drop in so it varies”, “XXX workers do not have caseloads. We have lots (tens) of members receiving OST.”

Table 6 Role in relation to OST

Characteristic	N	%
Prescribing and supporting	24	32
Supporting only	28	38
Other [1]	22	30
Prescribing	25	34
Supporting	52	70
Other	21	28
Total	74	100

Notes: Some missing cases. [1] Including one manager who was involved in prescribing OST but not supporting patients in receipt of OST.

Summary

To conclude we have provided an overview of the methods used to answer the key research questions. For clarity, we described each of the two main methods (interviews and questionnaires) separately and provided details of how the data generated by each method were analysed. We then ended by presenting information about the characteristics of the two samples of participants that both methods generated. In the next part of the report we present the results. First, we present findings from the interviews that were conducted with 60 people who had recent lived experience of POM/OTC/OST misuse and diversion. After this we focus on the online questionnaire survey and summarise the data provided by the 74 professionals involved in the commissioning, managing and delivery of OST in Wales.

4.0 Results – qualitative interview study

In this chapter we present the results of our analysis of the 60 interviews conducted with people with lived experience of NMPDU. The interviews covered a range of issues including: the sources of prescription medication, patterns of NMPDU, motivations for NMPDU, and the methods of (and motives for) prescription drug diversion. The results are therefore structured as follows: sources of prescription medication for nonmedical use, patterns of NMPDU, motivations for NMPDU, methods of prescription drug diversion, and motivations for prescription drug diversion. The chapter ends with a short section that examines the misuse of over-the-counter (OTC) medication. The imbalance in the presentation of data on prescription medications compared with OTC reflects the fact that few interviewees engaged in OTC misuse and hence there was comparatively little data to analyse and discuss.

Sources of Prescription Medication for Nonmedical Use

Our data revealed two different sources that were commonly used to obtain prescription-only medication for nonmedical use. These included (1) the medical route, and (2) the social route. These will be discussed in turn below, with reference to relevant quotations.

Medical route

The first route through which participants sourced medication for nonmedical use was the medical route. This involved participants obtaining medication illegitimately from the medical system. Within this source, it was possible to identify three common techniques through which medication could be obtained.

The first was **faking symptoms, or malingering**. This involved presenting to a medical professional with an invented or exaggerated injury/illness, or relaying symptoms learned from others. This was by far the most widespread technique within this route. The following examples demonstrate how participants were able to fabricate certain injuries or convey symptoms gathered from others to doctors, in attempts to obtain medication:

> *"Yeah, I could go over health tomorrow and just say, look I'm feeling a bit down or someone can tell me what their symptoms are, and then say, I'm a bit down, a bit anxious, a bit this and that, and they'd prescribe them to me (Prison 7)"*

> *"Yes, some people I can see doing that but sometimes healthcare can clock on to it, it depends on what you mention in the appointments. So they clock on to certain key words like I'm suffering with this and this and this, I've got pain in this, and this, and this. Is there any chance you can put me on something like this? They'll be right, that's triggered off all these red flags and their alarms, so we'll put you on the other end of spectrum which you can't abuse and misuse. Yeah. (Prison 4)"*

The second method involved **requesting specific doctors** who participants knew would be more willing to prescribe them medication. Commonly known as 'doctor shopping', participants detailed how they would seek out doctors who they had either previously established rapport with (and were therefore known to prescribe medication) or who they knew would be more lenient in their assessment of symptoms:

> *"Yeah, some doctors would question more than others, but I knew which doctors I could, I had better rapport with shall I say? (Prison 8)"*

> *"The ones which I knew that I could go in, and, they'd say, right, what's the matter with you? Blah, blah, blah, here you go (Prison 8)"*

The final technique – although far from common – was a reliance on **corrupt or unscrupulous doctors**. This included doctors who knew a patient was malingering, or doctors who would provide prescription pads to that a participant could obtain any medication they required:

> *"I know people in big cities, like Cardiff and Swansea**, I know doctors that'll give you a prescription pad. You can write your own prescription out.** … I've seen a doctor in a dealer's house, same as me, because he's on heroin as well (Prison 9)"*

Social route

The second route – termed the social route – involved obtaining medication though friends, family and other people who use drugs. This was found to be the most common technique through which participants sourced medication for nonmedical use. Indeed, there were multiple comments from participants about the ease through

which medication could be obtained through these social networks. This was because for many participants it was unethical to leave a peer stranded or unattended in situations where they required medication (for example, withdrawal). It was therefore relatively simple to attain any medication, at any time, from friends and other people who use drugs. Fellow peers therefore made up a network of care and support that could be drawn upon in times of need:

> *"(We take care of each other. We try to. If they know I'm bad, they won't leave me out' (Prison 10)."*

> *"If I can't sleep,* ***I'll get on the phone and I'll be like, listen boys, have you got any spare tablets for sale? Do you want to sell me some Valium? Do you want to sell me some?*** *(Community 12)"*

Interestingly, the internet was rarely mentioned as a source, possibly because participants did not have the resources or time to access or source medication online. Furthermore, the ease through which participants could obtain medication from a friend or family member was often more convenient, and even quicker. In this example, obtaining medication from the internet was done so only because access to a legitimate supply had been restricted:

> *"I had a prescription right at the beginning but because I abused the trust of the doctor, he went no****. So then I started buying them off the internet*** *and then just buying them off the streets. It just spiralled from there then (Prison 5)"*

Patterns of NMPDU

Once medication was sourced, we were interested to investigate the multiple ways in which medication might be nonmedical use. This included how it was consumed in a way other than directed by a health care professional. Here, we identified four common forms of consumption

The **first related to quantity of the medication consumed**. This form of nonmedical use involved consuming more than the recommended dose. In the example below, the participant has obtained two weeks worth of diazepam. Rather than adhering to the prescribed dosage, he has chosen to consume well above the recommended dose upon receiving the medication:

A … he gave me 84 Diazepam. It's meant to last me two weeks.
Q Okay. … How long did it last you?
*A About three days**. I ate them all! I ate 15 as soon as I walked out the chemist!** (Community 2)*

The second form of nonmedical use **related to how the medication was actually consumed.** It was common for participants to crush and either sniff or inject the substance to achieve a more rapid onset of effect. This practice was particularly widespread among those who nonmedically used prescription opioids, as this example here refers to:

*… "The Espranors yes, because they're quick, dissolve on the tongue. Yes, they're being sold as well, and sniffed. … a lot of people who have subbies … Yes, **they crush it like you're doing a line of coke, crush it down with the tablet, chop it up with the card and sniff it as a line"** (Community 11)*

Some participants also **combined their medication with other substances**. This was done for either one of two reasons. This first was t**o enhance the effects of an illicit substance,** perhaps if the quality of it was not good enough to achieve a sufficient high. For example, some interviewees referred to occasional occurrences of poor-quality heroin that would either prolong withdrawal symptoms or increase the risk of them occurring. Sedatives and tranquillisers were often used to potentiate the effects of heroin in these scenarios. It was not uncommon, for example, for benzodiazepines to be used alongside quality heroin in such situations to enhance its effect and reduce withdrawal symptoms throughout the day:

"In London I wouldn't have done more than a 0.2….Then when I came here it weren't doing it, I was having to eat Valium's on top." (Community 2)

A small number of participants noted how they would combine certain medications to enhance their effects. Pregablin and gabapentin were often used alongside OST medications, particularly in prison settings, to achieve a psychoactive effect:

Q Did you mix it [espranor] with any other drugs?
A Gabbies, yes, gabapentin.
Q What effect does that have, mixing the two?

*A It just gives you more… **you don't get no high off it, just more energy I suppose**.* (Prison 10)

The final method related to if the actual **dose of legitimately obtained medication they were on was too low**. In these scenarios participants were found to use an illicit substance 'on top'. For example, methadone dosing usually begins at an initial daily dose of 10-30mg, before titration onto an optimal stabilisation dose (Clinical Guidelines on Drug Misuse and Dependence Update 2017 Independent Expert Working Group, 2017). Consequently, there is a potential for initial under-dosing which may induce withdrawal symptoms (Faggiano, Vigna-Taglianti, Versino, & Lemma, 2003). During these periods, using on top was understood to be motivated largely by the need to supplement insufficient doses of OST

> *"They work you up to whatever you feel that you need to be on. So in the beginning it was 30 and then it slowly increased. It wasn't sustaining me at all, so I had to have the heroin on top, 'cause I had such a high habit, so 30mls of methadone didn't touch the sides. When it got to an amount, 90mls, like I say, was the highest I was on, so that was comfortable for me at the time. But until I got up to that point it was a case of having to take the heroin as well." (Community 3)*

<u>Motivations for NMPDU</u>

The third part of our analysis related to the motivations for NMPDU. Here, two broad motivations/justifications emerged that can help us understand why people may nonmedically use prescription medication.

The first of these related to **recreational motives**. The number of accounts from participants specifying that they had used prescription medications for these purposes, however, was limited. Indeed, it was rare for individuals to state that their primary motivation was to 'get high' from any prescription medication. Nevertheless, a small number of prisoners we interviewed did report that they used for recreational purposes, often as a way to escape reality or pass time while imprisoned.

> *"I do buy prescription medication every now and then, it's not abusing it, it's just every now and then I feel like I fancy a day out from reality really. So I'll buy something like pregabalin or gabapentin, or one that I've just recently found is carbamazepine, that's a day and half out that is." (Prison 4)*

However, on the whole there was little evidence of our sample misuing for recreational purposes. Instead, participants were **far more likely to report nonmedical use for therapeutic purposes**. Often, this was for one of two reasons: (1) to relieve a legitimate injury or illness, or (2) to mitigate withdrawal symptoms, (if they were unable to obtain their primary illicit drug, such as heroin, for example)

When looking at these motivations in more detail, we found that they were often linked to difficulties in obtaining medications from healthcare professionals. For example, many participants stated how it had become increasingly difficult to obtain certain medications over the last year for legitimate medical reasons - in particular pregabalin, gabapentin and diazepam. Limited access to these medications – both in community and prison settings – often meant some interviewees sought out prescription medication through alternative routes. *('I couldn't get the Valium off a doctor, so I was buying the MSJs (diazepam)' (1 Community)*). One interviewee explained how a serious neck injury caused him persistent pain requiring medical treatment. After having his gabapentin prescription terminated by a new doctor due to his status as 'drug user', he chose to self-medicate with gabapentin obtained from the black market:

> *"Yes, I didn't have a choice really. I was prescribed them [Gabapentin], then they took me off them, so what did they want me to do? Just lie there in pain?" (Prison 1)*

Another interviewee explained how his pregablin prescription for an anxiety-related issue had been reduced and eventually terminated following entry into prison. In the absence of medication, he chose to self-medicate with alternatives. This included street tranquillisers ('MSJs') and street Xanax sourced from other people who use drugs:

> *"It was fine, prescribed. It dealt with all my anxiety issues, all the problems that I'm suffering with now, it dealt with it all. I got here on the promise that I'd be on maintained meds and inside of six weeks I was battling. I'd already been halved the dose and they slowly but surely… they've taken it from me. It's a directive by the prison, not of the national health, it's a prison, and it's a major issue. Because what that's done is forced me into self-medicating, and using all the bulls***t and all the other things that are causing major problems in the system." (Prison 2)*

Protecting oneself from opioid withdrawal was most participants' main priority. This was found to be a further motivation for nonmedical prescription drug use among this group. To mitigate the chances of withdrawal occurring, interviewees often procured and stockpiled excess doses of methadone – either from their own or a peer's weekend take-home supply

'*f*** me, they're on some giant scripts, man. It's like, why do you want anything else bar that? They're on some giant scripts, and I know for a fact they're probably not taking all that" (Community 7*).

This could then be used as a 'safeguard' in the event of withdrawal (Harris and Rhodes, 2012, p.46) participant noted that, among his peers, diverted methadone was a useful alternative if heroin was unavailable:

> *"They buy it as a backup, so days that they think they can't get anything, they can take it, or if they're ill that morning and the dealer isn't on 'til God knows what time, two o'clock, for some reason or another, then they can take that and they know they're going to be alright until they get some." (Community 7)*

Similarly, one interviewee referred to a situation where illness prevented her from leaving her house to obtain heroin from her usual dealer. Her stockpiled dose of methadone helped control her withdrawal symptoms until she had recovered from her illness and was able to source illicit heroin again:

> *"Yeah, it's like for rainy days, I see it with people, they get it for rainy days. If they can't do graft, or well they're not feeling well. We go through times where we actually don't feel well, as normal not feeling well, do you know what I mean?" (Community 8)*

Methods of diversion

The third theme that emerged from the analysis was 'diversion'. Many of our interviewees had either diverted their own medication to other people or received medication from others. Here, a range of techniques were used to generate supplies of medication ready for diversion. Our analysis found that some people were allowed to consume their medication (including OST) unsupervised and were allowed to take home supplies to consume when the need to (e.g. at weekends). Diversion of these

take-home supplies was commonly reported. It was not only OST that was diverted in this way but other medications too (e.g. gabapentin):

> *"I know someone in here who is on gabapentin and he had to pick them up once a week. So he had the first week's load and he put them in his cupboard and didn't use them, he got the second week's load and then started selling the first weeks". ... (Prison 4)*

> *Q But just quickly, methadone, how would divert that.*
> *A From here, they give you your weekend dose, you take it home... (Community 13)*

In many cases, people are supervised when they are given their medication. This is common practice in relation to OST. However, our interviewees described that poor supervisory practices meant that they were able to take away supplies that could be diverted. Indeed, we heard many times that some nurses (particularly in one of the prisons) would not supervise the process properly (e.g. they would turn their backs or not ask to see their hands or in their mouth). It was widely known who these nurses were and when they were on duty, diversion was more likely to occur:

> *"They don't check properly. … Every day, if you wanted to keep your meds, you can keep them. It all depends what nurses you can do it with and who you can't do it with." (Prison 11)*

> *"Now and then, now and then. Not every day but if you went 14 days a week, morning and afternoon, maybe nine times they might quickly ask you to open your mouth which is fine." (Prison 12)*

> *… "There's only one or two nurses who actually watch you do it, make you drink a cup of water" ... (Prison 13)*

One interviewee observed that the more experienced nurses were less rigorous, perhaps because they knew that diversion would happen regardless of them checking. This interviewee speculated that such nurses might actually be trying to do the right thing by letting them take it away to perhaps consume at a different time of day (e.g. when they're not about to go to the gym) or to swap for another medication that they were not currently getting from a doctor.

> *"No, there's inconsistencies, there always will be, won't there? But it wouldn't surprise me if the more experienced ones think, if they want*

to get it back, they're going to get it back. That's probably what's happening, the old school nurses, there's not even no point, 'because if he wants it back, he's going to get it back. That's the reality of it. Or, if the nurse catches the person, there's riot because he's pissed off his meds, then it causes more problems. She might be aware he's got mental health issues and she's just trying to do the right thing." (Prison 2)

While poor supervision was a good opportunity for diversion, alternative and more innovative methods were also described by participants. Several participants stated how OST medications and other prescription medications were sometimes held back in the cheeks (for oral solutions) or mouths (for tablet based formulations) or swallowed and late regurgitated. These unhygienic 'spitbacks' (Fountain et al., 2000) were then sold or shared with other people who use drugs:

"People keep it. They literally just walk off with it in their mouth. … If a Governor pursues them, if they have to they'll swallow it. Nine times out of ten they'll make it to the closest cell they can, spit it into a cup or something. It's horrible I know, it's what they do." (Community 2)

Q So with the co-codamol and the DHC's, are they getting prescribed loads of them and they can take them into their cells?
A No, no, they just, they dose, they like keep it, hiding it, and then like coughing it back up or like that way. (6)

"The potential harm that this might cause to the person who would go on to consume. Some recognised the harm this could cause. How people can do that, out of people's mouths and that, because of Hep C and that." (Prison 2)

The potential harm that this might cause to the person who would go on to consume was recognised (*How people can do that, out of people's mouths and that, because of Hep C and that.* (10)), but it was often disregarded:

… "If people are bad they'll do anything, won't they? They don't care." (Prison 1)

Motivations for diversion

Finally, we asked those who were involved in diverting medication why they did this. The motive of helping others was commonly reported and this usually involved sharing supplies rather than selling them. For example, sharing doses of take-home methadone was a relatively common tactic to reduce a fellow peer's withdrawal

symptom. In the example below, an interviewee detailed how he would take the minimum dose of his take-home supply to cover his withdrawal symptoms over a weekend. The surplus medication was than shared with his partner to cover her withdrawal symptoms over the same period:

> *"You can take it home on the weekends and some nights, if you're not using, you're on 80ml of meth, you take 80ml of meth on a Friday and they say it will cover you for 24 hours but it covers you for longer. I reckon it covers you a good 36 hours. So I could take my Friday's meth and I'm going to be alright until the Sunday so I won't have to use my Saturday's then so I give that to her. She won't take it all at once. She'd split it down to three and three or 4x20ml and add it on." (Community 11).*

Interviewees often relied on one another in a similar way to supply medication for their health care reasons. These relationships were particularly effective in prison settings where prescription medication from healthcare professionals was often hard to come by. One participant detailed how he would share his medication with his neighbour to help alleviate his medical problems:

> *"My next door neighbour does it because he's got sleeping problems as well, he's on sleepers but his aren't as affective as mine… I won't sell them to him, I'll say, here you go, hack on that because I get them every week and I can forget to take them sometimes...." (Prison 4)*

Key to these relationships was a sense of mutual obligation. Participants were open to helping someone, but usually this was only on the basis that this help was reciprocal. Maintaining a generous reputation was therefore an effective method of preventing future withdrawal, as participants were willing to assist someone who would reciprocate in future times of need ("*If I was on a script of Valium or anything like that, yes, I'd give people because they give me", (Prison 5)*). One particular method involved 'fronting' (i.e. advancing medication to someone else) or passing on surplus medication obtained from weekly pick-ups to someone else in need. This approach offered insurance against future withdrawal symptoms, as it enabled the sharing to be reciprocated at the end of the week when their medication ran out:

> *"I mean especially when I was using more than I should have been, trying to make sure I had enough for the end of the week. The best way to do it was to lend someone some, so at the end of the week*

they can lend me some, so give me back and then I knew I'd have some at the end of the week." (Prison 6)

The above examples demonstrate how social networks play an important *harm-reducing* role in a context of limited access to various prescription medications. Sharing prescription medication also had pragmatic necessity, however; in prison settings medications were valuable commodities that could be exchanged for material gain. Sharing and trading certain medications therefore played an important function in obtaining necessity goods for everyday use. This often included food, vapes, toiletries or other luxuries requiring financial resources ("*I'd trade it for other things what I needed, or if I needed like a bag of sugar or something like that from the canteen. Oh, get me a bag of coffee and a bag of sugar, I'll give you something to stop you being ill" (Community 12)*). This trading was largely driven by the limited economic resources of those within the prison system:

"Yes. It's only because we don't get enough money in here. If you haven't got family out there to look after you and all that, that's the only way you can get stuff. Shower gel, toothpaste, just essential stuff you need, otherwise you can't afford it. You've got a choice, you can either use the phone, or be able to brush your teeth or something, or have a shower." (Prison 1)

"Yeah, it's always [trading]… someone might want some canteen, someone might want a packet of vapes, some people might want spice … rivotril, gabbies, pregabs, subbies, whatever." (Prison 14)

Over-the-counter-medication

In addition to questions about prescription medications, interviewees were also asked whether they had previously misused over-the-counter medication (OTC). On the whole, misuse of OTC was limited. Our data identified two main reasons for this. The first was due to the strength of OTC medications. Most participants stated that should the need to use an OTC medication ever occur (during withdrawal situations, for example), stronger prescription medications were readily available that would have a greater effect. For example, two participants stated how OTC medications were not 'the proper thing' and would have little to no psychoactive effect. Stronger alternatives were therefore sought out:

Q Have you ever done anything like that?
A No, not codeine.
Q No co-codamol?
A What's the point? Out there, you can get heroin and all that.
Q So why would you bother…?
A [Respondent affirms]
(Prison 15)

A It's not worth it, it just doesn't do anything, there's nothing strong enough that would.
Q Not worth what?
A You wouldn't be able to get high off anything you can buy over the counter.
Q So it's a waste of money?
A Yeah, total, just doesn't happen ever.
Q Co-codamol?
A No, not strong enough.
Q Not strong enough.
(Community 14)

The second, and more common reason for the disregard of OTC medications was the potential harm they may cause. Many participants stated how they were worried about lasting damage (particularly in relation to the kidneys) from the misuse of medications containing paracetamol, particularly at large doses which were often required to achieve any therapeutic effect. As such, participants largely avoided any misuse of over the counter medications containing paracetamol, preferring instead to find alternative prescription medications from the illicit market:

"Co-codamol and any sort of strong painkiller they could buy is always paired with paracetamol, so you would just be overdosing on paracetamol. The amount of co-codamol you'd have to take to get any sort of reaction off it, you'd probably kill yourself with the paracetamol, so it just doesn't happen." (03)

"I think the biggest damage, that's going to do to you is the paracetamol. Paracetamol and kidneys don't get on, especially after about 1000mg." (Community 15)

"The paracetamol is 500 and you get a 10ml codeine. If you've got a 10 bag habit a day, you need these 240 codeine, you just think then that's like just over 10,000ml of paracetamol. It wouldn't work. You couldn't do it. You'd overdose yourself and damage your body." (Community 11)

A small number of participants, however, did state that they sometimes misused OTC medications. This use was limited to periods when their primary prescription medication was unavailable, however. For example, if a participant had a choice between an OTC medication and stronger prescription medication, they favoured the prescription medication due to its increased strength:

> *A Yes, I can get the dihydrocodeine every day, all day as it happens. But again, I've got to pay for them, and what it costs me to pay for that, I can get the same off Subutex, so I'll only get that if there's not Subutex about.*
> *Q So you've got a choice, and you're going to go for your top choice.*
> *A Yes (Prison 3)*

Even when using OTC medications, participants were wary of any potential harms. Participants often extracting the paracetamol out of Co-codamol tablets prior to use as a tactic to reduce harm:

> *because of the paracetamol. I'd do 20 dihydrocodeine. You can drain the paracetamol out of it.*
> *Q Do you do that?*
> *A I have done, but if you do too much of that, it gives you bad stomachs. (Prison 3)*

Due to the perceived harms associated with excessive paracetamol use, most participant experiences of OTC misuse were limited. As such, there is limited data from our interviews in relation to this topic. Most participants simply disregarded the idea of OTC misuse, preferring instead to use readily available prescription medications which they perceived to be stronger and less harmful. Where use did occur, this was only as a last resort, or as a replacement for prescription medications that could not be sourced. Even then, participants were found to wary of any harmful effects, and relied on methods to reduce any potential harms.

Summary

Our data revealed how motives for NMPDU were often driven by therapeutic rather than recreational motives. For example, NMPDU often occurred in response to a legitimate medical concern in the absence of medical care or attention. This included the use of certain medications to relieve a legitimate injury or illness, or to mitigate

withdrawal symptoms, (if participants were unable to obtain their primary illicit drug, such as heroin, for example).

Difficulties in accessing medication from a legitimate source – i.e. a healthcare professional – was therefore found to be a key factor in NMPDU; limited access to medications, insufficient dosing, and barriers to accessing treatment – both in community and prison settings – often meant some interviewees sought out prescription medication through alternative routes, or used innovative (and often harmful) methods to divert medication to others in need. Indeed, NMPDU was often enabled in these situations through a reliance on peers and other people who use drugs: in the absence of legitimately obtained medication, the sharing and distribution of medications among peers emerged as an alternative form of support that was used to reduce harm. Interestingly, few interviewees reported the misuse of OTC medication. The general consensus was that the potential risk of harm far outweighed any potential benefit that OTC medication would bring.

5.0 Results – online questionnaire survey

In this section we present the results of our analysis of the 74 survey responses. The results are separated into two broad sections. The first examines 'misuse' of OST, which we defined in the survey as "a patient's incorrect or improper use of their own prescribed OST (e.g. not following instructions, using a different method of administration than advised, mixing with other substances, etc.)". The second section focuses on 'diversion' of OST, which refers to the passing on (either through gifting, trading or selling) of OST medication to other people.

1. Misuse of OST

To gauge the perceived prevalence of OST misuse, we asked respondents to tell us, to the best of their knowledge, whether they thought that most, some or none of the patients receiving OST through their organisation misused their OST. The majority (90%) of respondents thought that at least some patients in their organisation misused their medication. About one-tenth (12%) thought that **most** patients misused their OST while more than three-quarters (78%) thought that **some** of them did. Only a small number of respondents thought that patients in their organisation did not misuse their OST medication.

Table 7 Prevalence of OST misuse

Characteristic	N	%
Yes, most of them	9	12%
Yes, some of them	58	78%
No, none of them	7	10%
Total	74	100

Notes: Misuse = incorrect or improper use of their own prescribed OST (e.g. not following instructions, using a different method of administration than advised, mixing with other substances, etc.).

When asked how often they thought patients misused their OST, the sample was fairly evenly split. Just over half of respondents (57%) thought that misuse occurred 'sometimes' while just under half (43%) thought that misuse occurred more frequently (either often 40% or always 3%).

Table 8 Frequency of OST misuse

Characteristic	N	%
Sometimes	38	57%
Often	27	40%
Always	2	3%
Total	67	100

Notes: Among those who thought that misuse occurred among patients within their organisation. Misuse = incorrect or improper use of their own prescribed OST (e.g. not following instructions, using a different method of administration than advised, mixing with other substances, etc.).

Types of misuse

Those respondents who indicated that patients in their organisation were involved in the misuse of OST were asked to describe the types of misuse that they believe take place. Respondents were advised that there would be separate questions on 'diversion' and to focus on types of 'misuse'. Nevertheless, nearly half of those who provided descriptions included diversion for financial gain as a type of misuse. Sometimes this was alongside other types of misuse but on other occasions it was the only type of misuse identified. A full discussion about diversion and related issues is presented later in the report.

Diversion aside, the most commonly reported type of misuse was the use of other drugs (legal or illegal) 'on top' of prescribed OST, which was mentioned by more than half of those who provided an answer. Using on top was described in simple terms by many respondents (e.g. 'on top use', 'using other substances', 'using on top'). However, some were more explicit and described the types of drugs that they believed were used on top of OST. In some cases the type of drug was generalised (e.g. 'using illicit drugs on top of prescribed medication') while in other cases the specific drug type was mentioned:

> *"Some continue to use Heroin, opiate based pain killers alongside their OST"*
>
> *"Continue to use opiates and not tell staff"*
>
> *"Abuse alongside other prescribed medicines such as pregabalin and gabapentin"*
>
> *"I also see multiple patients who are prescribed methadone but still inject heroin"*

The consumption of different dosages of OST than prescribed was another commonly reported type of misuse. For many this kind of misuse was linked to under consumption, where patients consumed less than they had been prescribed. It was understood that such behaviour enabled patients to save their supplies of OST for use at a later date. Sometimes this was described as a method for creating supplies for diversion (e.g. 'Diversion. If on take outs, not utilise the full daily dose'). On other occasions, however, using lower dosages was described either as a means of facilitating the use of illegal drugs that could not be used safely on top of full doses (e.g. 'take small amount so they can use Heroin on top') or to create reserves for use in times of short supply:

> *"People will leave their OST aside on days when they have heroin so they have a fall-back when supply is more problematic"*
>
> *"Stock pile in case of emergencies"*

For others, misuse in terms of dosing was described in terms of over consumption or use of a larger dose than recommended. This activity was often linked to unsupervised consumption of take-out supplies, which gave patients the opportunity to use more than recommended by the prescriber. For some, this was thought to involve patients consuming all of the OST that they had been prescribed earlier than planned:

> *"If on enhances pick-up e.g. twice weekly they may take their doses early."*
>
> *"Double dosing with taking away doses"*
>
> *"I have had some patients take all of their weekend methadone on the Friday and subsequently admitted to hospital."*
>
> *"Use weekend doses early"*

For others, however, patients were understood to save up their supply (take-home or diverted) in order to consume at a later point in time. One respondent described that stockpiled OST might form part of a binge on a 'cocktail' of different drugs:

> *"Some clients will stock up their OST and have a binge using it to have cocktail of drugs to take"*

Another less commonly reported type of misuse was the use of a different method of administration than had been recommended. This usually involved either injecting or snorting buprenorphine rather than swallowing it (e.g. 'break down the buprenorphine to snort', 'inject their subutex'). Only one respondent referred to misuse in terms of use for a purpose other than intended and no specific details of what this other purpose was were provided.

Reasons for misuse

When asked what they thought the reasons for misuse were, some interesting themes emerged, some more frequently than others. Particular interest of these themes were the widely-held belief that misuse (which related mainly to under consumption) was driven by the need to generate money (e.g. 'money', 'financial', 'sell for profit', 'to make money'). Several respondents explained that the need for money was to facilitate the purchase of other preferred drugs:

> *"I think the primary reason is so they can sell to get heroin which is their preferred drug."*
>
> *"Financial gain. To subsidise their heroin habit."*
>
> *"To purchase illegal substances, or to make money for personal gain."*

While many recognised the financial motivations associated with under consumption of OST, some understood that it was also a useful way of generating reserves for later use. Building 'safety stock' was seen as an important way of protecting against withdrawal symptoms in the event of limited access to OST or alternative illegal drugs in the future. Some respondents recognised that patients worried about missing appointments and being unable to collect their scripts for various reasons. Others thought that patients feared being discharged early from treatment and needed supplies to prepare for such eventualities. They therefore used less than prescribed in order to generate reserves for future use.

> *"I think some worry they may miss an appointment so in effect stock pile."*
>
> *"Planning for the future- Back up plan in case they cannot get to pharmacy"*
>
> *"…believe they have missed a collection therefore their prescription will be stopped"*

One respondent explained that stockpiling provided a back-up for those who were engaging in their own self-managed treatment programmes. This process would enable them to reduce and increase their dose on a needs basis:

> *"Reducing self as current treatment options limit your reduction and does not allow you to go back up if you feel you need to without another assessment and additional support options."*

Misuse in terms of using 'on top' was often explained in terms of pleasure seeking and the need to obtain a different or better effect than their OST script was offering. This was often expressed in terms of patients wanting a better 'high', 'hit' or 'buzz'. One respondent explained this in more detail stating that 'heroin has a better effect and they feel like having a better effect sometimes'. Another attributed the need to use on top to the qualities of OST, which sometimes made patients 'feel sick' if consumed in one go.

Another commonly understood explanation for misuse was linked to the effectiveness, or rather ineffectiveness, of OST treatment. For most, this was related to doses being too low and hence insufficient to stave off withdrawal symptoms (e.g. 'dose is too low to hold them', 'Not on an appropriate dose', 'not prescribed at high enough levels', 'not holding the cravings'.) However, for some respondents, the problem was less about insufficient dosages and more about the limited provision of holistic psychosocial support alongside prescribed medication. Indeed, the Clinical Guidelines (2017) state that "Treatment for drug misuse should always involve a psychosocial component to help support an individual's recovery" (p.47) and "An integrated approach using psychosocial skills and interventions along with prescribing allows care to be managed in a way that incentivises recovery, harnesses motivation, and supports harm reduction and relapse prevention" (p.57). One respondent was clearly in tune with these recommendations:

> *"OST is one treatment option to address opiate dependence and does not in itself address the social and ingrained behavioural challenges associated with substance misuse in general."*

Other respondents also flagged up the importance of providing counselling and the need address the root causes of dependence:

> *"Because the primary addictive behaviour has not been adequately treated"*
>
> *"I know that people can still use on top/ sell their OST. This happens mainly as they are not receiving the proper help to stop e.g. - psychological help. There is too much focus on medication for treatment and not enough on the counselling side of things so people get to understand why they use/ or how to stop relapsing. I say this from my own personal experience."*
>
> *"Lack of mental health/counselling support"*

Interestingly, misuse as a result of treatment failure was not always due to perceived sub-standard provision. In some cases, treatment failure was believed to be because patients were not ready or not sufficiently motivated to stop using other drugs (e.g. 'not ready to stop using opiates', 'not ready to make the change', 'not ready to make changes.)

Less commonly reported motivations for misuse were linked to the often stressful lives of patients in receipt of OST. Some respondents referred to the 'stresses of daily life' and the 'chaotic lifestyles' of OST patients. One respondent commented on the role of 'boredom' in motivating misuse of substances on top of OST. Closely linked to the lifestyle of patients, was the role of peer pressure and bullying in encouraging misuse. Several respondents flagged up that misuse was linked to the 'social circles' in which patients live and to the influence of 'drug misusing peers and pressure within their social group'. In some cases this pressure clearly related to diversion (see later in the report for further details) but it was evident that social pressure was also understood to encourage the continued use of other substances on top of OST.

Risks of misuse

After exploring the motivations for misuse, respondents were asked to comment on what they thought were the main risks of misusing OST. Of concern to most respondents was the danger of overdose and death that can result from the over consumption of substances that depress the respiratory system (e.g. 'overdose', 'OD', 'death', 'DRD', 'drug poisoning', 'fatal and non-fatal overdose', 'respiratory depression', 'fatal incidents'). Under consumption was also seen as problematic,

largely because cutting down could result in reduced tolerance, which increases the risk of overdose when larger doses are consumed (e.g. 'risk of lowered tolerance if not taking medication as prescribed to them', 'tolerance change due to misuse (missed doses)').

A range of other health harms including fairly general concerns (e.g. 'impact on physical health', 'effect on health') as well as some more specific harms (e.g. 'damage to circulation') were noted. Of particular concern were the health harms associated with intravenous injecting (e.g. 'injecting wounds', 'increase in BBVs'). Social harms were also recognised as potential risks (e.g. 'loss of jobs/family', 'getting caught') but the primary concern noted by respondents was the risk of physical harm to the OST patient. That said, our survey respondents also recognised the potential risk to third parties to whom diverted medication might be sold. As previously noted, issues relating to diversion are explored in more depth later in the report.

The potential for misuse of OST to jeopardise the success of treatment was noted by several respondents (e.g. 'removing the potential benefit of OST', 'not benefiting from treatment, not being able to stabilise and take advantage of the OST programme', 'not allowing themselves to be on a good stabilisation dose'). The main risk of failing to comply was that patients would not receive the proper support from workers (who 'feel you are wasting their time') and end up either 'dropping out' or being discharged from treatment and 'taken off [their] script'[7]. Misuse was described by one respondent as part of the 'revolving door' phenomenon where people return to treatment on multiple occasions after failed attempts to achieve stability or abstinence.

Minimising misuse

When asked what methods they use to minimise the opportunity for misuse, the most commonly reported method was supervised consumption, which involves patients being watched as they consume their OST. This method was closely followed by the use of voluntary or mandatory drug testing to check that the OST has been consumed and/or that other substances are not being used on top. The use of 'behaviour contracts', the threat of discharge were also noted as methods although these were mentioned by only a few respondents. Interestingly, one respondent noted the value

[7] Issues relating to premature discharge from treatment are discussed later in the report.

of ‘time-limited’ OST treatment and ‘planned agreed cessation dates’. However, it was not clear how such measures would serve to minimise misuse.

Less draconian methods seemed to be more popular with clear recognition of the need to improve and optimise treatment in order to fulfil patients’ needs and prevent the need for misuse. This included the importance of: ‘optimum prescribing’, ‘maintaining regular reviews’, ‘regular therapeutic and clinical appointments with clients’, ‘good communication with pharmacies’, creating good therapeutic relationships and sharing information about misuse with partner organisations (e.g. between prescribers and dispensers).

> *“Create an environment that isn't punitive so that patients feel they can be open and honest and discuss their misuse. In this way the named nurse and patient can search for a solution themselves. Occasionally we need to return people to supervised doses and we only relax these in the first place if there is good reason.”*
>
> *“Good relationship with client. Good communication with pharmacies. Regular therapeutic and clinical appointments with clients. Proactive public information / health promotion within the community”*
>
> *“As soon as information reaches the GDAS team about someone possibly misusing their OST, it is given to the clinical team and a discussion is had around the service user and on the plan of action which can range to return to supervised consumption to quick detox off the script.”*

The importance of extending treatment to include the provision of diversionary activities to alleviate boredom was mentioned by several respondents as too was the need to provide psychosocial treatment such as counselling to address the root causes of the problem. The need for ‘support and perseverance’ was also recognised as critical.

While many described measures for preventing misuse from occurring in the first place, some referred to specific harm reduction methods that might help to minimise the harm associated with the misuse of OST. This included providing information about how best to respond to overdoses as well as the provision of naloxone kits that would reverse an opioid overdose. Finally, one respondent’s answer suggested that he/she did not try to minimise misuse because of the benefits that it brings:

"Personally, I think the black market in methadone is useful and important'."

Summary

In this section we have explored professional views on the misuse of OST. Most respondents recognised that misuse occurred among patients in their organisation and many thought that this happened regularly. The main types of misuse identified were the use of other drugs on top of OST and taking more or less OST than had been prescribed to them. Using on top was understood to be motivated largely by the need to supplement insufficient doses of OST and ineffective treatment or by the need to experience pleasure and a different kind of buzz or high. Over consumption was often facilitated by take-home supplies of OST and was understood to be motivated principally by the need to stave off withdrawal symptoms. Under consumption was thought by many to be motivated by the need to make money, usually in order to purchase their drug of choice. However, it was also understood that under consumption was useful in that it would enable patients to build up reserve supplies of OST that could be used in the future when access to OST or preferred substances might not be possible.

The potential health and social harms were widely recognised with most fearing that patients would overdose and die either as a result of over consumption (including using on top) or from under consumption and the subsequent reduction in tolerance. Respondents described a range of methods for minimising the risk of misuse the most popular of which was supervising consumption although the value of drug testing was also recognised. While some fairly draconian methods were noted (e.g. threatening discharge) respondents noted the importance of optimising treatment both in terms of dosing and the provision of non-punitive therapeutic support.

6.0 Diversion of OST medication

In this section of the report we now turn our attention to a particular kind of misuse of OST, namely diversion. In this report we have defined diversion as the giving, sharing, trading or selling of OST to others. We noted earlier in the report that some respondents referred to diversion within their answers relating to misuse. However, for clarity, we have reserved our discussion about these issues until now.

To gauge the perceived prevalence of OST diversion, we asked respondents to tell us, to the best of their knowledge, whether they thought that most, some or none of the patients receiving OST through their organisation diverted their OST. More than three-quarters (78%) of respondents thought that their patients were involved in diverting their OST medication. In most cases, it was felt that diversion occurred among 'some' patients with only a small proportion indicating that it occurred among 'most' patients. Roughly, one-quarter of respondents did not think that patients in their organisation diverted their OST mediation.

Table 9 Prevalence of OST diversion

Characteristic	N	%
Yes, most of them	2	3
Yes, some of them	53	75
No, none of them	16	23
Total	71	100

Notes: Some missing cases.

Among those who did believe that diversion of OST occurred among their patients, most (76%) thought that diversion occurred 'sometimes' while just under one-quarter (24%) thought that it 'often' occurred. No respondents thought that patients diverted their OST medication all of the time.

Table 10 Frequency of OST diversion

Characteristic	N	%
Sometimes	42	76
Often	13	24
Always	0	0
Total	55	100

Notes: Among those who thought that diversion occurred among patients in their organisation (n=55).

Methods of diversion

Respondents who believed that patients in their organisation were involved in diverting their OST medication were asked to describe how, in practice, they thought that supplies were being diverted. For the most part, diversionary practices were understood to involve patients obtaining their medication from a pharmacy or dispensing treatment provider and then passing it on to others through various means. Two main methods of diversion were identified. The first, and most commonly reported method, was the diversion of take-home supplies of medication. Depending on clinical need, some patients are permitted to take their medication on an unsupervised basis (at weekends or weekly in some cases)[8]. Patients given take-home doses therefore have ready supplies available for diverting on to others should they wish to do so[9].

The physical process of diverting take-home supplies was thought to involve patients taking reduced doses of medication and either diverting the surplus or stockpiling the leftovers ready for passing on to others.

> *"Often on a take home dose of medication they reduce themselves and build dose up to sell on to others."*
>
> *"With take home doses, taking less than prescribed each day then selling or giving away the surplus."*
>
> *"Often on a take home dose of medication they reduce themselves and build dose up to sell on to others"*

[8] See: Clinical Guidelines on Drug Misuse and Dependence Update 2017 Independent Expert Working Group (2017) Drug misuse and dependence: UK guidelines on clinical management. London: Department of Health: "ultimately, the responsibility for the level of supervision for any prescription lies with the prescriber …".

[9] Take-home supplies can be lucrative (see next section for details) and some patients were understood to cheat the system by submitting false urine samples in order to achieve the status necessary to be allowed take-home supplies: 'false urine so get take outs'.

The second method of diversion described by respondents was utilised by OST patients who were prescribed medication for immediate 'supervised' consumption. In such cases, diversion was facilitated by inadequate supervisory practices either in pharmacies or dispensing clinics.

> *"I think if medication is not supervised properly it is fairly easy, this is certainly the case for non-liquid OSTs."*
>
> *"Lack of supervision at pharmacy."*

One respondent explained that poor supervision was sometimes the result of patients, taking advantage of less experienced professionals who had come to trust them after developing a rapport.

> *"…poor supervision after patient builds rapport with pharmacist. Young pharmacists."*

The methods of physically concealing OST medication were reported to vary by the type of medication. While it was understood to be far simpler to conceal OST in tablet form (i.e. buprenorphine) it was nevertheless believed possible, and common, for liquid medication (i.e. methadone) to be concealed too. 'Palming' tablets, which involves sticking tablets to the palm of your hand while pretending to swallow them, was described by many survey respondents (e.g. 'palming subutex', 'palming of Espranor', 'palming of buprenorphine').

> *"Palming of their buprenorphine - so the medication either never actually goes into the mouth, or if it does it is removed before it has been swallowed."*

Respondents also described how some patients would spit tablets out after pretending to swallow them. In practice, this involved hiding the tablet somewhere within their mouth whilst making sure that it was dry enough to stop the medicine from dissolving:

> *"Hide tablet up inside the gum area"*
>
> *"Dry their mouth prior to being given OST in chemist."*

Spitting was also identified as a method of obtaining supplies of liquid methadone for diversion.

"Pretend to swallow Methadone liquid or buprenorphine tablets before spitting out"

"Keep fluids in mouth and spit into bottle outside pharmacy"

"Hold methadone in mouth to spit out soon after leaving pharmacy."

It is important to note that for both liquid and tablet OST, diversion through spitting would only be possible if the 'supervisor' did not check the patient's mouth properly before allowing him/her to leave. Inadequate supervision can therefore serve to facilitate diversion. However, even apparently adequate supervision, where the patient's mouth is checked thoroughly, is not sufficient to prevent diversion entirely. Indeed, many respondents described how some patients would regurgitate swallowed OST medication to generate supplies for diversion.

"Spitting out or regurgitating liquid methadone."

"Regurgitation. palming."

"regurgitate methadone into a cup / handkerchief"

Most respondents described diversionary practices that occurred after the OST medication had been dispensed to the patient. However, one respondent noted that diversion could also occur at the point of dispensing if medication was collected by someone who had not been prescribed the OST (e.g. 'someone else may collect their script')[10]. Presumably, diversion using this method would only be possible if the identity of the collector was not checked properly by the dispenser.

Motives for diversion

When asked to explain the reasons why they thought that patients diverted their OST medication, a variety of motives were given. Some respondents provided a list of several possible reasons, while others limited their response to just one. The most commonly reported motive was understood to be the need to make money. A few respondents provided only brief answers such as: 'money', 'to sell for money', 'finances', 'extra cash and profit'. Other respondents elaborated and explained why

[10] See Clinical Guidelines S.A.4.5.2, which states that patients will usually be asked to show identification to the dispensing pharmacist

extra money was needed. Paying off debts was mentioned by several respondents as a key motivating factor.

“Debts owed while in prison, debts owed in the community”

“The currency value it holds for debt and to make money.”

The need for other drugs was also frequently cited as a motivator for diversion of OST. In some cases it was understood that illegal drugs were purchased with the proceeds of diverted OST. In other cases it was thought that diverted medication was exchanged directly for other illegal substances.

“They want to buy the drugs of their choice”

“Sometimes to make money so that they can buy illicit substances.”

“Money to buy drugs”

“Exchange for other substances”

“T*o make money/ swap for other substances for on top use.”*

“Sell / swap for illicit substances.”

Interestingly, several respondents referred to the need to obtain other medications, including other forms of OST, that they were otherwise unable to obtain.

“If not on their preferred OST they may sell or swap to received desired substance”

“To obtain other medication”

Financial motivation aside, other more altruistic explanations were also described. Respondents believed that sometimes patients would divert their medication in order to share with someone, often a partner, who was not receiving OST.

“To share with partners not on a script - Sometimes to help someone out such as partner who is not yet receiving OST”

“Give to partner who isn't prescribed”

“To support other who are dependent and not in treatment”

"Not realising how dangerous it can be to do this and not realising it can only be prescribed by a doctor. They may be thinking it will help them [others] *with illnesses such as chronic pain."*

"Give to a drug using partner or friend trying to help them out"

While diversion was clearly understood to be a choice for many patients, it was also recognised that diversion could sometimes be motivated by fear, bullying, intimidation and pressure from others, including partners. Diversion was therefore not always willingly undertaken by patients as some were coerced into doing so. The implication was that any failure to comply with bullies would result in painful consequences (perhaps more painful than the consequences of withdrawing from their OST medication).

"If they are bullied into it, intimidation"

"Forced to share their OST with partners"

"Sometimes they are forced to do this by abusive partners."

"They are under some sort of intimidation from a partner, or dealer."

"Hassled outside pharmacies."

"Pressure from others to sell OST."

While most motivating factors were focused on the here and now, some respondents noted that patients sometimes diverted medication in order to prepare for future difficult situations. One respondent explained that patients might hold onto their diverted supply ready to sell at a time when they had no money available to pay for illegal drugs (*Keep for when they have no money to buy illicit substances*). Such actions are indicative of careful planning and organisational skills that are not typically associated with this client group [need to add something on stereotyping and stigma.]

For others, however, it was understood that diversion might sometimes be due to patients not being ready, able or willing to engage in treatment fully:

"Not wanting to consume OST."

"Not fully believing that the dose will hold them or that they can become clean"

“Unable to fully commit to recovery.”

“They are not ready to change their lifestyle.”

“Not ready to stop using”

Risks of diversion

Most respondents identified overdose and death as the main risk associated with the diversion of OST. For the most part, the risk was viewed in terms of danger to the third party who consumed the diverted medication. Their principal concern was that the third party would overdose either due to low tolerance or due to unfavourable interactions with other medications and drugs that they were knowingly or unknowingly consuming.

“Selling to somebody who has a lower tolerance.”

“Overdose in opiate naïve people.”

“People not seen by clinicians having a prescription therefore overdose and death.”

“Interactions with other meds as people potentially using it have not had appropriate assessment.”

“Overdose, street methadone or subutex which has been augmented with an unknown sedative.”

The risk of diverted supplies being consumed by children was flagged up as a specific concern by a small number of respondents (e.g. ‘children/vulnerable groups could take it’, ‘risk to children’)

Other health harms were also identified as possible consequences. This included the possibility of third parties using drugs for the first time and some becoming addicted or dependent on OST medication (e.g. ‘May bring people into drug use who haven't previously’, ‘third parties becoming addicted to OST’). Of particular concern was the potential for the spread of blood borne viruses, which could occur if the diverted medication had been spat out or regurgitated by an infected patient (e.g. ‘Possibility of passing on BBVs’).

While harm to third parties was of particular importance to survey respondents, risk to the diverter was also recognised as critical. Here, the main concern was that the patient would experience a drop in tolerance and become increasingly vulnerable to overdose. There was also concern that patients would use illegal drugs (of unknown strength) in the absence of their prescribed OST.

> *"Overdose, if giving away their OST and then taking a full dose."*
>
> *"Risk to person taking the medication. Risk to patient not having the benefit of treatment and associated risks."*
>
> *"Overdose of both parties."*
>
> *"Lowered tolerance. Will then use heroin as they don't have their dose of OST."*

The risk of being removed from treatment programmes and losing their prescriptions was also identified as a matter of concern (e.g. 'Loss of prescription', 'discharge from treatment').

Some respondents were worried that patients would become even more vulnerable as a result of not gaining the benefit of treatment. One respondent flagged up the possibility of vulnerable patients being exploited by third parties.

> *"People are not getting the help they need and become even more vulnerable than they already were."*
>
> *"Risk to patient not having the benefit of treatment and associated risks. Risks of additional vulnerabilities of patient being highlighted to exploitative individual."*
>
> *"Irregular dosage of medication which can lead to physical health issues."*

The risk of patients getting caught for diverting their medication was highlighted by several respondents as too was the risk being arrested and entering the criminal justice system (e.g. 'arrest', 'overdose and criminal', 'getting caught', 'criminality').

> *"Criminal/offending behaviour - should they or those they sell it to be prosecuted."*

Minimising diversion

All respondents were asked to describe the measures they take to minimise the risk of diversion among OST patients in their organisation. Sixty-one respondents provided an answer[11]. Some respondents described how they would respond to patients caught diverting their medication, while others described their routine practice for preventing diversion in the first place. For both, the main methods used were: supervised consumption, drug testing, awareness and education, information sharing, prescribing different kinds of OST, and maximising the quality of treatment (i.e. optimum dosages). In the paragraphs below, we flag up some examples of these methods. As before, some respondents described using multiple techniques while others described just one.

The provision of supervised consumption, whereby OST medication is consumed in front of the dispenser, was the most commonly reported method through which respondents tried to minimise diversion. Most respondents described the nature of the supervision in fairly general terms (e.g. 'Watching everyone closely', 'CCTV Supervised consumption', 'Supervision of treatment hatches', '… supervised dispensing', 'Daily supervised consumption').

However, one was more specific in how he/she thought consumption should be supervised to minimise the risk of diversion (e.g. 'ensuring that a full glass of water is drunk after issuing medication'). Several described the importance of engaging in conversation with patients and asking questions about their treatment to establish the likelihood of diversion occurring:

> *"Engaging in conversation, careful supervision."*
>
> *"Daily supervised consumption, asking if people are taking their full doses."*
>
> *"At each meeting, asking questions around their using behaviour and their script use. … If they complain of withdrawal symptoms or say the dose is not holding them, ask questions about why this might be."*
>
> *"… Keeping in touch with clients"*

[11] The non-respondents included: 8 drug workers, 1 manager, 1 pharmacist and 3 'other'.

While communication with patients was viewed as important by some respondents, others also recognised the value of communicating regularly with partner organisations, particularly with pharmacists involved in dispensing OST to patients. Sharing information is critical to ensuring that prescribing regimens are followed and that any concerns about patients are investigated fully.

> *"Good communication with other agencies and pharmacies."*
>
> *"Liaise with pharmacy for close supervision"*
>
> *"Liaison with pharmacies"*
>
> *"Discuss with chemist"*

The value of urine and other forms of drug testing were flagged up by some respondents as a key method used to try to minimise diversion (e.g. 'regular testing', 'random drug screening', 'urine screening'). Testing facilitates both the detection of treatment compliance (i.e. determining if service users have consumed their scripted medication) and also the use of other non-prescribed drugs (i.e. illegal drugs such as heroin)[12].

> *"Monitor DSUs for presence of prescribed OST metabolites!*
>
> *"Test frequently to make sure they have the scripted drug in their system as well as for opiates."*
>
> *"EDDP[13] testing. Urine test validation. Oral swab testing"*

When test results suggest that the patient is not complying with treatment, they risk being placed under tighter supervision, being suspended or, in rare cases, being discharged from treatment. Testing can therefore act as a strong deterrent for misuse and diversion.

Educating patients about the consequences of diversion and the potential dangers of sharing their OST with others, was another key strategy identified by respondents.

[12] Clinical Guidelines on Drug Misuse and Dependence Update 2017 Independent Expert Working Group (2017) Drug misuse and dependence: UK guidelines on clinical management. London: Department of Health.

[13] The test allows to screen for the effective intake of methadone by detecting its metabolite, the EDDP.

Some referred specifically to harm reduction while others were more general in their comments referring simply to the need to ‘educate’ or to provide ‘education’:

“Supplying info/harm reduction”

“Harm minimisation advice. Discussion of risks involved if it is suspected.”

“Always discuss harm reduction”

“Explain consequences of diversion”

Interestingly, one respondent mentioned naloxone (‘naloxone and education’), suggesting acceptance of the likelihood of diversion and the importance of preparing for an overdose event that this might create.

A small number of respondents described methods involving the OST treatment itself as a means of minimising the risk of diversion. Several mentioned switching from one kind of OST to another. This included switching from methadone to a less easily diverted substitute such as Espranor and switching to Suboxone which contains naloxone and is a less attractive OST for misuse and diversion:

“Consider products that minimise risk. I.e. suboxone”

“Using espranor instead of buprenorphine methadone instead of buprenorphine”

“espranor - dissolves quicker.”

One respondent referred to the importance of maintaining optimum dosages of OST to hold patients more effectively and hence discourage both diversion and the use of other substances on top (‘maintain optimum dosage for individuals’). Another considered regular reviews of treatment plans as critical in helping to minimise the risk of diversion (‘review treatment plans’). Interestingly, just one respondent commented on the value of diversion itself for people who use drugs. This respondent highlighted the issue of waiting lists for OST treatment (which remain high in parts of Wales) and

explained that ‘my personal view is that diversion helps those waiting for prescribing’ (Welsh Government, 2019)[14].

Finally, several respondents suggested that they minimised diversion by using or threatening to use tough sanctions, such reintroducing supervised consumption, reducing doses of OST or removing or discharging patients from treatment.

> *“As previous, removing prescribing where on review it appears it's being abused treatment consequences (discharge)”*
>
> *“Discharge if not compliant with treatment, this is rare mostly try to support client.”*
>
> *… “Advice that patient should diversion be seen that prescription will reduce and OST be stopped due to the dangers not only to the patient but to those receiving the medication illicitly.”*
>
> *“Any concerns then the patient goes to 7 day supervised consumption of prescription (SCOP).”*

Using discharge as a punishment is contrary to National Institute for Health and Care (NICE) Guidance, which states in Section 4.5.1 that: “The principal reason for using supervision is to ensure the safety of the patient and to minimise the risk of toxicity. It should not be used or viewed as a punishment.”

Furthermore, early discharge from treatment puts patients at an increased risk of overdose death, contracting a Blood Born Viruses (BBV) and offending (Clinical Guidelines, 2017, S.4.6.5). The Clinical Guidelines therefore recommend that any such decision be made by the prescriber in consultation with the multidisciplinary team and that patients are forewarned of the potential actions that might be taken when treatment goals are not achieved (Clinical Guidelines 2017, S.4.6.5).

One respondent provided a useful description of the delicate balance needed to minimise the risk of diversion while maximising progress towards positive treatment outcomes.

[14] Welsh Government (2019) *Treatment Data: Substance Misuse in Wales 2018-19*. Accessed on 22 November 2019 at: https://gov.wales/sites/default/files/publications/2019-10/treatment-data-substance-misuse-in-wales-2018-19.pdf

"You have to weigh up risk of diversion (and evidence of DRDs [drug-related deaths] from these) against reward to engagement and progress. A lot of service user's work towards being able to reduce their collection days and it can be a useful tool, with service users positively marking this as progression into stability and normal routine. Some service users view supervision as demeaning and embarrassing, especially in a busy pharmacy setting. Daily supervision consumption is not a legal requirement. It can be noted on the prescription for the pharmacist to follow the dispensing instructions but it's actually not legal."

Other issues relating to misuse and diversion

At the end of the survey, all respondents were given the chance to tell us anything else about misuse and diversion of OST that had not been covered in the questionnaire. Twenty respondents took the opportunity to provide additional information, although one of these was a negative comment about the survey itself rather than about issues relating to misuse and diversion. Nevertheless, even this respondent recognised that it was an 'important survey'.

The additional comments made by respondents were varied and covered a range of important issues, some of which re-emphasised points made within the questionnaire. For example, several comments were made about the extent of misuse and diversion ('90% of OST recipients use on top, with a significant amount of methadone being bought and sold on the black market; many patients who attend clinic can get hold of OST at most times from the street if needed').

Waiting lists and difficulties accessing treatment outside of working hours, were also identified as factors contributing to misuse and diversion of OST ('Often, lengthy waiting lists for OST is the reason why many individuals sell on prescriptions that they do not really want or need, for financial gain'). One respondent suggested that access to pharmacies be increased, presumably to reduce the amount of unsupervised take-out supplies being issued ('7 day pharmacies are needed throughout. mobile pharmacy dispensing needed').

Some respondents used the opportunity to flag up new and important issues. One, for example, highlighted the 'financial implications' of misuse and diversion:

£Financial implications of medication must be considered as buprenorphine (generic) or espranor is now extremely expensive. Where prescribing services have a limited budget and it costs £5000 per year per place for a service user, you can see how this will add up and be unsustainable."

Another respondent highlighted the complexity of achieving a consensus among healthcare providers when different organisations with different philosophies are involved in delivering OST to patients. This respondent also noted the importance of assessing and managing risk properly and having proper plans in place to reduce the risk of misuse and diversion.

"Hard to get an agreement on an approach with different organisations/philosophy of approach. It is important when people start on OST programmes that there will be some misuse as people continue to use on top but this should be risk assessed and proactively managed and when the evidence says that the risk is no longer acceptable mechanisms should be put in place to reduce the risk which in this case is the prescription. The challenge is in getting agreement on the limits. Seeing individuals on a monthly basis for planned appointments means non random drug tests which are very easy to subvert."

Interestingly, one respondent felt that drug treatment services were well aware of the risks of misuse and diversion and therefore had processes in place to minimise any risks. This respondent felt that misuse and diversion was more likely to occur when OST is prescribed within Primacy Care settings outside of Shared Care arrangements.

"Where we have come across this in our area it generally hasn't been the commissioned drug treatment services, who tend to be aware of the problem and so have processes in place to minimise it. We have seen it instead where individual patients appear to have been able to access OST within Primary Care, outside of formal Shared Care arrangements."

For one respondent, diversion of OST was seen as a positive thing that could prove useful in several different circumstances, including cases where patients have been unable to collect their prescription for some reason:

"I have seen many patients benefit from purchasing illicit methadone over the years; whether it's clients in work who didn't get back in time to get to their pharmacy, or clients falling through services due to overly strict rules; or clients having a treatment break and needing something to hold them longer than heroin. I am very confident that illicit methadone does more good than harm."

Another respondent questioned the evidence of the harm of diversion of OST. For this respondent, of greater concern was the misuse and diversion of General Practitioner (GP) prescribed medication such as gabapentinoids and analgesics:

> *"It would be interesting to see the evidence where diverted doses have posed such a large and continuous risk. Generally, the largest most hazardous issue remains GP prescribed medication and not OST. There are large numbers of service users diverting their GP prescribed medications, all the gabapentoids, anxioytics and pain medications."*

This same respondent also raised a particularly interesting point about finding a balance between reducing risk and facilitating recovery:

> *"Although, clinically, supervision remains the best way to reduce risks, it is not always a useful tool when trying to build recovery. It interrupts the building of a different daily routine, limits job prospects and for some [it's] humiliating."*

In a similar vein, another respondent noted the importance of making the OST process more 'patient led' to ensure that patients are empowered and encouraged to engage in treatment and achieve positive outcomes.

> *"I believe that OST is an essential tool in the treatment of substance misuse but I do not believe that it is the place of prescribing services to be the drink and drug police. The process needs to be more patient led, even at the risk of increasing the misuse and diversion of opioid substitution treatment. A change in culture to be more empowering to the patients involved will see greater numbers engage in treatment and an eventual fall in the misuse and diversion of opioid substitution treatment."*

Summary

In this section we have examined professionals' views on the diversion of OST. More than three-quarters of respondents understood that at least some of their patients were involved in diversion but few thought that this happened very often. Two main methods of diversion were noted, which included the diversion of OST medication that should have been consumed under supervision (i.e. through concealment) and the diversion of take-home supplies that were supplied for unsupervised consumption at a later date. The primary motive for diversion was understood to be for financial gain, although some respondents recognised that diversion facilitated the consumption of

other preferred substances including other forms of OST and prescribed drugs as well as illegal drugs.

Altruistic motivations were also reported, which involved patients sharing their OST but sometimes this was not always a matter of choice as some patients were known to be bullied and intimated into sharing their OST. Most respondents were concerned about the potential harm to a third party who would go on to consume the diverted medication. The biggest fear was that this person would overdose due to low tolerance or unfavourable interactions with other drugs. Concern over the welfare of those diverting their medication was also expressed and this was often related to worries about increased vulnerability to overdose following consumption of lower doses. Efforts to minimise diversion were focused primarily on supervision but also included drug testing, education, information sharing and optimising treatment both in terms of dosage and additional psychosocial support.

7.0 Discussion

In this report we have presented findings from a qualitative study investigating the motives, patterns and consequences for the misuse and diversion of POM/OTC (including OST) among people who use illegal drugs in Wales. When drawing conclusions, however, it is important to recognise the limitations of the research. Like most cross-sectional studies that rely on self-report surveys of people who use drugs, the research is limited by issues of accuracy of recall and honesty (Neale & Robertson, 2005). Accuracy of recall is particularly problematic in scenarios where respondents may be intoxicated (Bennett & Higgins, 1999). Nevertheless, in spite of these weaknesses, self-report is widely used in research on people who use drugs and there is evidence to suggest that it can produce reliable results (Dietze, Jolley, Fry, & Bammer, 2005). This study is also limited by the fact that the sample is biased in favour of participants who were willing to participate. It is possible that unwilling and unavailable participants engaged in the misuse of these substances do so in different and potentially more harmful ways that are not documented in this study. This includes overdose and death. Generalising the findings beyond the current sample therefore needs to be done with caution.

Accepting these limitations, the current study provides new evidence on the motivations for nonmedical prescription drug use (including sourcing, consumption and diversion) among people who use illegal drugs in Wales, UK. This includes the identification of a number of motives for the misuse and diversion of a range of prescription medications in this specific context. It is hoped these findings will help to inform policy and practice and contribute to relevant harm reduction guidelines for people who continue to use prescription medications alongside other illegal drugs.

Our data revealed a range of prescription medications that were commonly misused. The most commonly used prescription drugs were found to be mirtazapine, gabapentin and pregabalin and diazepam, all of which played different functions in different scenarios.

Benzodiazepines and gabapentinoids, for example, were sought after medications that could be used to enhance the effects of poor-quality heroin. OST medications and other prescription opioids were found to be useful in relieving withdrawal symptoms,

or scenarios where heroin could not be sourced. Similarly, both interviewees and respondents detailed how methadone was used as a strategic 'backup' to safeguard against future withdrawal. Interestingly, participant experiences of OTC misuse were limited in our data. This is perhaps because most participants did not engage in OTC misuse, preferring instead to use the easily available prescription medications above which they perceived to be stronger and less harmful. As such, OTC misuse was not found to be a widespread issue among our sample.

Perhaps the most important finding from our research however, is that the motivations for misuse and diversion were largely for therapeutic rather than recreational purposes. This was confirmed in both interviews with people with lived experience and in surveys with healthcare professionals. Misuse was found to be primarily to self-medicate in the absence of certain prescription medications and treatment. Indeed, we found that when access to certain medications was restricted – both in the community and prison settings - participants sought out medication through different routes. This included sourcing and consuming alternatives (such as MSJs and street Xanax, which have become readily available in Wales in recent years) from friends and other people who use drugs.

For some, the misuse and diversion of prescription drugs can therefore be explained by the need to alleviate health and social needs in the absence of legitimately prescribed medication, a finding confirmed by similar studies in this field in different geographical settings and political contexts (Harris & Rhodes, 2013; Koester et al., 1999; Mateu-Gelabert et al., 2017; Richert & Johnson, 2015). This includes how limited access to medication can act as barriers to treatment and motivate some drug users to engage in nonmedical prescription drug use. Our data revealed how these certain barriers (including dosing protocols, stigma and rigid protocols on prescribing certain medications to people who use drugs) often led to self-medication with illicit alternatives. For example, many survey respondents detailed how 'using on top' was motivated largely by the need to supplement insufficient doses of OST and ineffective treatment. Hence, over consumption was often facilitated by take-home supplies of OST and was understood to be often motivated by the need to stave off withdrawal symptoms

Our findings are therefore illustrative of the well-versed point that restrictive prescribing and treatment regimens are key forces driving the black market for these substances (Beletsky & Davis, 2017; Mars, Bourgois, Karandinos, Montero, & Ciccarone, 2014). Rather than prohibiting and reducing access to certain medications and treatments, tailoring treatment to individuals and improving access to healthcare might reduce the need for drug users to misuse and divert medication in the first instance. Lowering barriers to treatments and certain prescribed medications, may reduce the demand for prescription drugs on the black market and limit the harms associated with NMPDU (Johnson & Richert, 2019; Richert & Johnson, 2015)

Nevertheless, the findings from this research should not detract from the risk of harm posed by concomitant nonmedical prescription drug use (Macleod et al., 2019; ONS, 2019), and we recognise that proponents of more restrictive prescribing protocols may question calls for greater flexibility, particularly as a large evidence base currently exists reporting the benefits of such regimes. The supervised consumption of methadone, for example, has been associated with reductions in overdose mortality occurring as a result of methadone diversion (Strang et al., 2010). Meanwhile, US states with more robust Prescription Drug Monitoring Programmes (PDMP's) were found to have fewer prescription opioid overdose deaths than states with weaker PDMPs (Pardo, 2017). Balancing legitimate patient demands with the need to prevent misuse could therefore prove challenging and requires further consideration before we can find a solution that is both safe and acceptable.

Similarly, the diversion of medication among this group was primarily to help others. Hence, although healthcare professionals largely attributed the misuse and diversion of medications to financial motives, this suggestion was generally refuted in interviews with those with lived experience who described the POM market as being distinct from other illicit drug markets driven by profit. Instead, it resembled a 'social supply' group, where medication is often shared or traded for other supplies, rather than for financial gain. In our study, there were many examples of people sharing prescription medications with peers who were in legitimate medical need. This system was underpinned by an altruistic and emphatic bond between peers: most drug users had experienced withdrawal, knew how painful the experience was, and would therefore be willing to assist a fellow peer in need.

Nevertheless, there was often the expectation that reciprocity would occur if the sharer was ever in future need (Bourgois & Schonberg, 2009; Harris & Rhodes, 2013). Maintaining a generous reputation was therefore an effective precautionary tactic against withdrawal. Our findings further contribute to these arguments by uncovering how prescription medications can operate as a form of currency for many people who use drugs. This was particularly evident in prison settings, where the cashless trading of prescription medication enabled commodities – such as toothpaste, shower gel and mouthwash – to be obtained. The sharing of prescription medications therefore generated a number of important social and everyday benefits for this group.

The complexity of prescription drug misuse and diversion underscores the importance of drawing on innovative and evidenced-based approaches to reducing drug-related harms related to prescription drug misuse.

As stated above, our findings affirm the value of prescription drugs as a social resource among drug users (Bourgois, 1998; Bourgois & Schonberg, 2009; Harris & Rhodes, 2013). Given that people who use drugs groups have the capacity to respond and act effectively in the event of drug-related harm (Holloway, Hills, & May, 2018), drawing on the knowledge and relationships within these networks can be instrumental in producing 'cultures of care' that 'enhance resiliency and reduce the experience of harm' (Duff, 2009: 207). This includes the peer delivery of relevant harm reduction messages and services (including the provision of take-home naloxone and overdose response training) that have the potential to reduce harm at both individual and community level within these networks (Wagner et al., 2014).

8.0 Conclusions and recommendations

In this report we have presented findings from a qualitative study drawing on the experiences and views of people with lived experience as well as professionals working in the substance misuse field in Wales. The research provides new evidence on the motivations for nonmedical prescription drug use among people who use illegal drugs in Wales. This includes the identification of a number of motives for the misuse of a range of prescription medications in this specific context. These motives were found to be consistent with previous research exploring the misuse of individual medications, including methadone (Harris & Rhodes, 2013) and benzodiazepines (Mateu-Gelabert et al., 2017) alongside illegal drugs such as heroin.

We affirm the position of these scholars on the need to understand and acknowledge an alternative side of nonmedical prescription drug use that is rarely investigated in the literature. This includes how, (1) rigid protocols can act as barriers to treatment and motivate some drug users to engage in nonmedical prescription drug use, (2) nonmedical prescription drug use offers protective potential from many of the everyday risks illegal drug users are exposed to.

An understanding and acknowledgement of these issues can enable the insertion of pragmatic solutions into treatment that attend to the immediate needs and priorities of some individuals engaged in nonmedical prescription drug use. This includes harnessing the support and knowledge of people who use drugs and members of their social networks who have the capacity to respond and act effectively in the event of drug-related harm. Whilst these measures may go some way to optimising treatment and service provision, we also emphasise the need for additional policy measures that attend to the inequities and social-structural factors that produce and maintain the need to consume prescription medications in ways that are not intended. This includes the provision of accessible, stigma-free and holistic interventions that seek to address the root causes of nonmedical prescription drug use.

Recommendations:

The following sections provide a number of recommendations based on the findings of this piece of research. This includes both recommendations for clinical practice and harm reduction in general.

Recommendations for Clinical Policy

- Given the potential for harm associated with concurrent benzodiazepine use, co-prescribing benzodiazepines to opioid-dependent patients during OST should be carefully considered on an individual basis. Recent studies have advised against the co-prescribing of benzodiazepines to patients in receipt of OST due to elevated risks of overdose (MacLoed et al., 2019). Conversely, our findings support the notion that individuals may transition to illicit benzodiazepines and medications in response to restrictive prescribing regimes (Richert and Johnson, 2015). We therefore urge careful assessment of the patient during consultation (including an assessment of whether the patient is using/intends to use the prescription medication for recreational or therapeutic purposes) and the need for appropriate monitoring and review of patients at elevated risk of harm from concurrent use.
- To prevent malingering, coordinate care with other services to ensure an awareness of patients who are prone to the use of prescription medications for recreational purposes.
- Options for the safe detox from prescription medications should be introduced and offered to patients with concurrent opioid dependence at regular intervals.
- Clinicians should be aware of and provide relevant harm reduction advice to opioid-dependent patients about the harms associated with concomitant prescription drug use (see below).
- Develop strategies to manage the use of benzodiazepines or other central nervous system depressants when patients begin opioid substitution therapy treatment. Discuss with patients how they may control and reduce their benzodiazepine use.
- Ensure timely access to treatment (i.e. reduce waiting times for OST)

- Consider involuntary discharge from treatment as a last resort (and not to be used as a punishment).
- Ensure more realistic and pragmatic rules that relate to the everyday complexities of opioid use (e.g. not losing access to services if late or ill).
- Deliver messages regarding the therapeutic rather than recreational motivations of NMPDU outlined in this research to help eliminate stigma and improve treatment experiences.
- Provision of holistic package of care alongside prescription drugs as per the Orange guidelines. This includes the need for additional policy measures that attend to the factors that produce and maintain the need to consume prescription medications (housing instability, homelessness, mental health unemployment etc.)

Where individuals express a desire to continue NMPDU, general harm reduction principles are appropriate to NMPDU and should be relayed.

Harm reduction

- Provide education about the risks of NMPDU, including overdose and death, both when used as prescribed and when obtained illicitly. Harms associated with concomitant opioid and alcohol use should also be relayed.
- Provide people who use drugs with advice on how best to taper use of prescription medications. The harms associated with sudden benzodiazepine cessation should also be reinforced.
- Capitalise on the helping culture evidenced in this report and encourage peer-to-peer harm reduction advice/methods. This includes the delivery of education and harm reduction methods (including overdose management training), ownership of take-home naloxone kits, and the promotion of pro-social behaviour that is evident among drug-using networks. In effect, this will create safer, *peer-led* drug using spaces that have the potential to reach those at most risk of harm.
- To ensure that all trained prisoners receive Take Home Naloxone (THN) kits on release from prison.

- To incorporate NMPDU advice within generic harm reduction advice provided by a range of services (including drug, alcohol, mental health and homelessness services).

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10.0 Appendix

Appendix A

For the purpose of Appendix A, please refer to the link below that will display the following document:

'***Drug misuse and dependence UK guidelines on clinical management'***

Document title and information 'Clinical Guidelines on Drug Misuse and Dependence' this document was published in 2017 by the Independent Expert Working Group, Department of Health, London.

Link to the above mentioned document - https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/673978/clinical_guidelines_2017.pdf

The chapters below are in relation to some of the key themes listed throughout 'Drug misuse and dependence UK guidelines clinical management' document.

Chapter 4: Pharmacological Interventions

Please refer to Chapter 4 **'Supervised Consumption'** (Page 101)

The first section under this chapter to note is point **'4.5.1 When and how to use supervised consumption'**

Supervision of consumption by an appropriate professional provides the best guarantee that a medicine is being taken as prescribed. Following the introduction of supervised consumption in England and Scotland, methadone related deaths reduced fourfold (Strang et al 2010).

The General Medical Council guidance on consent (2013) highlights that "for a relationship between doctor and patient to be effective, it should be a partnership

based on openness, trust and good communication. Each person has a role to play in making decisions about treatment or care". The patient is a key partner in decisions on the appropriate level of supervision. Supervised consumption should be viewed as a situation where therapeutic relationships can be built with patients. The principal reason for using supervision is to ensure the safety of the patient and to minimise the risk of toxicity. It should not be used or viewed as a punishment.

Levels of supervision should be based on an individual risk assessment for, and with, each patient. Clinicians and treatment providers should be familiar with opening hours of pharmacies that are accessible to the patient. For many on daily supervised consumption, providing a take-home dose for Sundays is the only practical option, but for others it may be feasible to access a pharmacy that opens seven days a week. Patients who are working can often take advantage of pharmacies that are late opening. It is important to consider the best option for each patient.

For most cases, it will be appropriate for new patients being prescribed methadone or buprenorphine to be required to take their daily doses under the direct supervision of a professional for a period of time to allow monitoring of progress and an ongoing risk assessment. The risk assessment should include a review of compliance and individual circumstances, including whether the home environment is suitable for safe storage of medications. In some cases, following this, the supervision will be needed for an extended period while for others it may be assessed as only being needed for a short period. Duration of supervision should be dependent on assessed clinical need and should not be applied in an arbitrary way.

The clinical need for supervised consumption should be reviewed regularly by the prescriber. Although, ultimately, the responsibility for the level of supervision for any prescription lies with the prescriber, decisions on when to relax or increase the requirement for supervised consumption should include consultation with the multidisciplinary team, the patient and liaison with the dispensing pharmacist. For example, long-term, daily supervised consumption would probably not be appropriate for a patient in regular, full-time work or education where supervision would be a clear barrier to retention in treatment and recovery. When a patient restarts methadone or buprenorphine after a break, receives a significant increase in the dose or during

periods of instability when tolerance may be reduced, daily dispensing – ideally with supervised consumption – should be reinstated for a period of time and reviewed at regular intervals.

In patients whose treatment is failing, a period in supervised consumption can improve observation of progress and can be used alongside an increase in interventions to improve outcomes.

The level of supervision and the frequency of collection should be based on individual assessment of patient needs, including the risk assessment, and should be sufficiently flexible to respond to changing circumstances.

Particular issues arise when patients currently on supervised dispensing request special or exceptional arrangements for travel, holidays or family events. Patients should be advised at the outset of treatment that they will need to give advance notice of holiday, travel or other events that require altered prescribing or dispensing arrangements. Urgent requests will inevitably arise and services need processes to assess and respond to such requests. In some circumstances, even with advance notice, and especially for those early in treatment or significantly unstable, the prescriber may not feel able to safely provide a supply of medication to cover the event. The clinical rationale for this decision should be clearly explained to the patient.

More information in relation to legal arrangements relating to travelling abroad with controlled drugs can be found at annexe A6 (Page 303) within the document.

In most cases, the person supervising consumption will be a community pharmacist, although some specialist services and dispensing doctors may employ their own pharmacy or nursing staff to provide on-site supervised consumption. There should be multi-agency protocols in place to ensure a consistent high standard of service is provided. As part of the service, there should be systems to ensure information about patients can be fed to and from the prescriber and keyworker, as well as agreement from the patient that confidential information can be shared between the pharmacist and named members of the multidisciplinary team.

The aims of a community pharmacy based supervised consumption service include:

- ensuring the patient receives the prescribed dose
- reducing diversion of prescribed doses
- providing an opportunity for the pharmacist to make a regular assessment of patient
- compliance with treatment and of their general health and wellbeing
- providing an opportunity for the pharmacist to build a therapeutic relationship with the
- patient that is beneficial to promote heath and harm reduction
- reducing the risks of drug related overdose and deaths
- Minimising the risk of accidental consumption by children.

Pharmacies have expanded their services in recent years and pharmacy contracts have developed. Pharmacists have unrivalled expertise in the use and interaction of medicines and they should be used to support OST patients. Pharmacists should contribute to the treatment and care of patients through liaison with prescribers in the assessment of appropriate levels of supervised consumption.

There are no universally agreed standards for supervised consumption in community pharmacy. However, the Pharmaceutical Care for Patients Prescribed Opioid Replacement Therapy standards document, introduced in Scotland in 2015, provides a useful template for local services (NHS Scotland 2015). These principles are based on the General Pharmaceutical Council (GPhC) standards for registered pharmacies, which apply in England, Wales and Scotland. In Northern Ireland, the pharmacy regulator is the Pharmaceutical Society of Northern Ireland (PSNI).

The second chapter to note under the Supervised Consumption section is **4.5.2 ‘Stopping supervision’ (Page 103)**

Relaxation of supervised consumption and instalment dispensing should be a stepped process in which a patient normally remains on daily dispensing with reduction or cessation of supervision and progression to less frequent instalment collection. The relaxation of supervision and collection is an important component of supporting

further recovery in stable patients. It is recommended that no more than one week of take-home doses is supplied as a single instalment.

Supervised consumption should only be relaxed once the prescriber has good reason to believe that compliance will be maintained. The assessment of compliance and clinical progress is covered in the document and in depth information in relation to this can be found at section 4.6 (Assessing and responding to progress and failure to benefit). In general, the assessment should cover:

- compliance with prescribed drug treatment
- abstinence from or significant change in heroin or other drug misuse
- changes in drug-taking behaviours (such as cessation of injecting)
- compliance with other elements of the treatment and recovery care plan, for example,
- attendance at appointments.

Arrangements for daily consumption through instalment prescribing and, where appropriate, supervised consumption of other medicines, can be made.

To protect patient and community safety, take-home doses should not normally be prescribed where:

- the patient has not reached a stable dose
- the patient shows a continued and unstable pattern of drug misuse, including a significant
- excessive level of alcohol intake, the use of illicit drugs and/or misuse of benzodiazepines
- or other tranquillisers
- the patient has a significant, unstable psychiatric illness or is threatening self-harm
- there is continuing concern that the prescribed medicine is being, or may be, diverted or
- used inappropriately
- there are concerns about the safety of medicines stored in the home and possible risk
- to children.

The third section to note under the Supervised Consumption chapter is **4.5.3** '**Issues in supervised consumption'**

A range of different medications can be supervised. Oral methadone solution consumption can most easily be observed. Buprenorphine sublingual tablets can be more difficult to supervise because of the length of time taken for the tablet to dissolve. Some pharmacists have been crushing buprenorphine tablets before consumption to make the supervision process more straightforward. This practice, while technically off-licence, may sometimes be undertaken with appropriate clinical governance approval and protocols.

More information in relation to 'Issues in supervised consumption' can be found at annexe A3 (Page 271) within the document.

Buprenorphine products that dissolve more rapidly will be available and may require less supervision (More information relating to this can be found at section 4.3.4 'Faster acting forms of Buprenorphine (Page 89).

Other medication such as benzodiazepines, antidepressants, antipsychotics and medication for conditions such as tuberculosis and Human Immunodeficiency Virus (HIV) can be prescribed to be dispensed in instalments and consumption supervised where local contracts are in place. The service should be delivered in a way that protects patients' privacy and dignity. Consumption should take place in a private consultation room or a suitably discreet area of the pharmacy. There should also be due regard to maintaining confidential communication with patients in the open pharmacy area before and after any supervised use.

While supervision of prescribed medication, even if directed on the prescription, is not a legal requirement, any deviation from the prescriber's intended method of supply should be documented and the justification for this recorded. Any such decision should be made in the best interests of the patient, ideally always involving the prescriber.

The third section to note under the Supervised Consumption Chapter is **4.5.4 'Competencies for supervised consumption'**

Staff supervising the consumption of medication need to be competent to do so. Such competencies are commonly specified in local service level agreements by commissioners. Standards that are required to deliver a quality OST supervised consumption service, and the training required by staff to deliver the service, are set out in the Scottish standards document, Pharmaceutical Care for Patients Prescribed Opioid Replacement Therapy (NHS Scotland 2015).

Appendix B

Initial Literature Search Table

Figure 1: Table demonstrating the inclusion and exclusion of the first 50 papers provided by ASSIA when searching for (Prescription only medication) AND (misuse OR abuse OR diver*)

No.	Article.	Include/ Exclude	Reason
1.	SEAN, E.M., TETER, C.J. and BOYD, C.J., 2006. Medical Use, Illicit Use, and Diversion of Abusable Prescription Drugs. *Journal of American College Health,* **54**(5), pp. 269-78.	Include	
2.	Barbara, P.W., Becker-Blease, K. and Grace-Bishop, K., 2006. Stimulant Medication Use, Misuse, and Abuse in an Undergraduate and Graduate Student Sample. *Journal of American College Health,* **54**(5), pp. 261-8.	Include	
3.	MORASCO, B.J., TURK, D.C., DONOVAN, D.M. and DOBSCHA, S.K., 2013. Risk for prescription opioid misuse among patients with a history of substance use disorder. *Drug and alcohol dependence,* **127**(1-3), pp. 193-199	Exclude	No access
4.	BASTIAENS, L., GALUS, J. and MAZUR, C., 2016. Abuse of Gabapentin is Associated with Opioid Addiction. *Psychiatric Quarterly,* **87**(4), pp. 763-767.	Include	
5.	VALDEZ, A., 2014. Rx for Injury: Adolescent Prescription Drug Misuse. *Journal of Emergency Nursing,* **40**(5), pp. 497-9.	Include	
6.	WEAVER, M.F., BOND, D.S., ARNOLD, B.L., WATERHOUSE, E. and TOWNE,	Exclude	No access

	A., 2006. Aberrant Drug-taking Behaviors and Headache: Patient Versus Physician Report. *American Journal of Health Behavior,* **30**(5), pp. 475-82.		
7.	ALLEN, M.A., JEWERS, H. and MCDONALD, J.S., 2014. A Framework for the Treatment of Pain and Addiction in the Emergency Department. *Journal of Emergency Nursing,* **40**(6), pp. 552-9.	Include	
8.	LEE, S., ROTHBARD, A.B., NOLL, E. and BLANK, M.B., 2011. Use of HIV and Psychotropic Medications among Persons with Serious Mental Illness and HIV/AIDS. *Administration and Policy in Mental Health and Mental Health Services Research,* **38**(5), pp. 335-44.	Exclude	Not relevant
9.	WORLEY, J., 2014. What Prescribers Can Learn From Doctor Shoppers. *The Journal for Nurse Practitioners,* **10**(2), pp. 75-82.	Include	
10.	QUINTERO, G., PHD., 2009. Rx for a Party: A Qualitative Analysis of Recreational Pharmaceutical Use in a Collegiate Setting. *Journal of American College Health,* **58**(1), pp. 64-70.	Include	
11.	MARTINS, S.S., FENTON, M.C., KEYES, K.M., BLANCO, C., ZHU, H. and STORR, C.L., 2012. Mood and anxiety disorders and their association with non-medical prescription opioid use and prescription opioid-use disorder: longitudinal evidence from the National Epidemiologic Study on Alcohol and	Exclude	Does not discuss the abuse of prescription drugs. Not relevant.

	Related Conditions. *Psychological medicine,* **42**(6), pp. 1261-72.		
12.	GREEN, J., 2017. Epidemiology of Opioid Abuse and Addiction. *Journal of Emergency Nursing,* **43**(2), pp. 106-113.	Include	
13.	FARRIS, K.B., MCCARTHY, A.M., KELLY, M.W., CLAY, D. and GROSS, J.N., 2003. Issues of Medication Administration and Control in Iowa Schools. *The Journal of school health,* **73**(9), pp. 331-7.	Exclude	Does not discuss abuse of prescription drugs. Not relevant.
14.	TETER, C.J., SEAN, E.M., CRANFORD, J.A., BOYD, C.J. and GUTHRIE, S.K., 2005. Prevalence and Motives for Illicit Use of Prescription Stimulants in an Undergraduate Student Sample. *Journal of American College Health,* **53**(6), pp. 253-62.	Include	
15.	WEIGEL, D.J., DONOVAN, K.A., KRUG, K.S. and DIXON, W.A., 2007. Prescription Opioid Abuse and Dependence: Assessment Strategies for Counselors. *Journal of Counseling and Development : JCD,* **85**(2), pp. 211-215.	Include	
16.	Implementing Evidence-Based Opioid Prescription Practices in a Primary Care Setting. 2018. *The Journal for Nurse Practitioners,* **14**(7), pp. e143-e147	Exclude	Focussed on intervention rather than misuse/ abuse of prescription opiods
17.	TOMPKINS, C.N.E., WRIGHT, N.M.J., WATERMAN, M.G. and SHEARD, L., 2009. Exploring prison buprenorphine misuse in the United Kingdom: A qualitative study of former prisoners.	Exclude	Does not discuss prescription medication

	International Journal of Prisoner Health, 5(2), pp. 71-87.		
18.	SCHMIDT, T.D., HADDOX, J.D., NIELSEN, A.E., WAKELAND, W. and FITZGERALD, J., 2015. Key Data Gaps Regarding the Public Health Issues Associated with Opioid Analgesics. The Journal of Behavioral Health Services & Research, 42(4), pp. 540-553.	include	
19.	Carrie M. Carretta PhD, APN, AHN-BC, Ann W. Burgess DSNc, RNCS, Elizabeth B. Dowdell PhD, RN, Barbara A. Caldwell PhD, APN-BC. (2018) Adolescent Suicide Cases: Toxicology Reports and Prescription Drugs. The Journal for Nurse Practitioners, 14(7), pp. 552-558.	Include	
20.	GORGELS, W.J.M.J., OUDE VOSHAAR, ,R.C., MOI, A.J.J., VAN, D.L., MULDER, J., VAN, D.H., VAN BAIKOM, A. J. L. M., BRETELER, M.H.M. and ZITMAN, F.G., 2007. Consequences of a benzodiazepine discontinuation programme in family practice on psychotropic medication prescription to the participants. Family practice, 24(5), pp. 504-510.	Exclude	Not relevant
21.	ALI, M.M., TEICH, J., LYNCH, S. and MUTTER, R., 2018. Utilization of Mental Health Services by Preschool-Aged Children with Private Insurance Coverage. Administration and Policy in Mental Health and Mental Health Services Research, 45(5), pp. 731-740.	Exclude	Not relevant

22.	HEINEMANN, A.W. and HAWKINS, D., 1995. Substance Abuse and Medical Complications Following Spinal Cord Injury. Rehabilitation Psychology [PsycARTICLES], 40(2), pp. 125.	Exclude	Not relevant
23.	SCHULTE, M.T., PHD. and HSER, Y., PHD., 2014. Substance Use and Associated Health Conditions throughout the Lifespan. Public health reviews, 35(2), pp. 1-27.	Exclude	Does not discuss the misuse of prescription medication misuse
24.	MAYHEW, M.S., 2010. Legal Aspects of Prescribing Opioids. The Journal for Nurse Practitioners, 6(9), pp. 722-723.	Include	
25.	MCCABE, S.E., BOYD, C.J. and TETER, C.J., 2009. Subtypes of nonmedical prescription drug misuse. Drug and alcohol dependence, 102(1-3), pp. 63-70.	Include	
26.	BAILEY, F. and DAVIES, A., 2008. The misuse/abuse of antihistamine antiemetic medication (cyclizine) by cancer patients. *Palliative medicine,* **22**(7), pp. 869-71.	Exclude	Mainly OTC rather than prescription?
27.	MACK, K.A., PHD., ZHANG, K., PHD., PAULOZZI, L., M.D. and JONES, C., PHARMD., 2015. Prescription Practices involving Opioid Analgesics among Americans with Medicaid, 2010. *Journal of health care for the poor and underserved,* **26**(1), pp. 182-198.	Include	
28.	WASZAK, D.L. and FENNIMORE, L.A., 2017. Achieving the Institute of Medicine's 6 Aims for Quality in the Midst of the Opioid Crisis: Considerations for	Exclude	Not relevant- does not discuss prescription drug misuse

	the Emergency Department. *Journal of Emergency Nursing,* **43**(6), pp. 512-518.		
29.	RASSOOL, G.H., 2012. Types of substance misuse and risk factors. *Nursing times,* **108**(30), pp. 12-4.	Exclude	does not discuss specific prescription drug misuse no access
30.	HUDSPETH, R.S., 2016. Safe Opioid Prescribing for Adults by Nurse Practitioners: Part 1. Patient History and Assessment Standards and Techniques. The Journal for Nurse Practitioners, 12(3), pp. 141-148.	Exclude	Not relevant- more about responsibilities of prescribing appropriately
31.	RHOADES, H., WINETROBE, H. and RICE, E., 2014. Prescription drug misuse among homeless youth. *Drug and alcohol dependence,* **138**, pp. 229-233.	Include	
32.	ALAM, F. and BARKER, P., 2014. Interruption of medication-assisted treatment for opioid dependence: insights from the UK. *Drugs and Alcohol Today,* **14**(3), pp. 114-125.	Include	
33.	GARLAND, E.L., BROWN, S.M. and HOWARD, M.O., 2016. Thought suppression as a mediator of the association between depressed mood and prescription opioid craving among chronic pain patients. *Journal of Behavioral Medicine,* **39**(1), pp. 128-138.	Exclude	Not relevant- talks more about the cognitive processes of opioid craving rather than misuse
34.	OFRAT, S., KRUEGER, R.F., EATON, N.R., KEYES, K.M., SKODOL, A.E., GRANT, B.F. and HASIN, D.S., 2014. Nonmedical Prescription Drug Use Comorbidity: Developing a Cohesive Risk	Exclude	Not relevant

	Model. *Journal of Psychopathology and Behavioral Assessment,* **36**(3), pp. 371-379.		
35.	DESANTIS, A.D., PHD., WEBB, E.M., M.A. and NOAR, S.M., PHD., 2008. Illicit Use of Prescription ADHD Medications on a College Campus: A Multimethodological Approach. *Journal of American College Health,* **57**(3), pp. 315-24.	Include	
36.	DZIEGIELEWSKI, S.F., 1998. Psychopharmacology and social work practice: Introduction. *Research on Social Work Practice,* **8**(4), pp. 371-383.	Exclude	Not relevant- more about responsibilities of prescribing appropriately
37.	HUDSPETH, R.S., 2016. Safe Opioid Prescribing for Adults by Nurse Practitioners: Part 2. Implementing and Managing Treatment. *The Journal for Nurse Practitioners,* **12**(4), pp. 213-220.	Exclude	Not relevant- more about responsibilities of prescribing appropriately
38.	RATYCZ, M.C., PAPADIMOS, T.J. and VANDERBILT, A.A., 2018. Addressing the growing opioid and heroin abuse epidemic: a call for medical school curricula. *Medical Education Online,* **23**(1), pp. 1-6.	Include	
39.	OLUYASE, A.O., RAISTRICK, D., ABBASI, Y., DALE, V. and LLOYD, C., 2013. A study of the psychotropic prescriptions of people attending an addiction service in England. *Advances in Dual Diagnosis,* **6**(2), pp. 54-65.	Exclude	Looks more at the necessity of prescriptions and what drugs are used upon on referral (prescription practise) rather than misuse

40.	MEARS, C.J., CHARLEBOIS, N.M. and HOLL, J.L., 2006. Medication Adherence Among Adolescents in a School-Based Health Center. *The Journal of school health,* **76**(2), pp. 52-6.	Exclude	No access
41.	PAULOZZI, L.J. and STIER, D.D., 2010. Prescription drug laws, drug overdoses, and drug sales in New York and Pennsylvania. *Journal of public health policy,* **31**(4), pp. 422-32.	Exclude	No access
42.	SENKER, S. and GREEN, G., 2016. Understanding recovery: the perspective of substance misusing offenders. *Drugs and Alcohol Today,* **16**(1), pp. 16-28.	Exclude	Not relevant
43.	FORD, J.A., PHD., 2008. Nonmedical Prescription Drug Use Among College Students: A Comparison Between Athletes and Nonathletes. *Journal of American College Health,* **57**(2), pp. 211-9.	Exclude	Does not really discuss misuse
44.	MUHRER, J.C., 2010. Detecting and Dealing with Substance Abuse Disorders in Primary Care. *The Journal for Nurse Practitioners,* **6**(8), pp. 597-605.	Exclude	Not relevant
45.	HOWLAND, J., WEINBERG, J., SMITH, E., LARAMIE, A. and KUPKA, M., 2002. Prevalence of allergy symptoms and associated medication use in a sample of college seniors. *Journal of American College Health,* **51**(2), pp. 67-70.	Exclude	Not relevant- does not talk about misuse
46.	LARSON, M.J., MILLER, K. and FLEMING, K.J., 2007. Treatment with Antidepressant Medications in Private Health Plans. *Administration and Policy in*	Exclude	Not relevant- does not discuss misuse

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47.	GRIFFITH, A.K., HUSCROFT-D'ANGELO, J., EPSTEIN, M.H., SINGH, N.N., HUEFNER, J.C. and PICK, R., 2010. Psychotropic Medication Use for Youth in Residential Treatment: A Comparison Between Youth with Monopharmacy Versus Polypharmacy. *Journal of Child and Family Studies,* **19**(6), pp. 795-802.	Exclude	Not related to prescription misuse
48.	AANP Forum. 2017. *The Journal for Nurse Practitioners,* **13**(8), pp. A20-A22.	Exclude	Not relevant
49.	SMITH, L.L., YAN, FENGXIA,M.D., M.S., CHARLES, M., M.P.H., MOHIUDDIN, K., M.D., TYUS, DAWN, M ED,L.P.C., N.C.C., ADEKEYE, OLUWATOYOSI, MBBS,DRP.H., M.P.H. and HOLDEN, KISHA B,PHD., M.S.C.R., 2017. Exploring the Link Between Substance Use and Mental Health Status: What Can We Learn from the Self- medication Theory? *Journal of health care for the poor and underserved,* **28**(2), pp. 113-131.	Exclude	Does not discuss specifically prescription drugs, or the misuse of them
50.	GARLAND, E.L., FROELIGER, B.E., PASSIK, S.D. and HOWARD, M.O., 2013. Attentional bias for prescription opioid cues among opioid dependent chronic pain patients. *Journal of Behavioral Medicine,* **36**(6), pp. 611-20.	Exclude	Not relevant-discusses craving in regards to opioids but does not directly discuss misuse