Interventions for Smoking Cessation in Substance Use Treatment Services in the UK: A Mixed Methods Study and Behavioural Change Synthesis

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Abstract

Smoking prevalence in people accessing substance use treatment services is high, yet much of the existing evidence on behavioural interventions for smoking cessation is of limited utility in this setting. This is due to the specific needs and challenges that this population present, and a lack of evidence specific to this context. This thesis uses a concurrent, embedded, mixed methods design to examine the existing evidence on this subject and assess its applicability to the context of substance use treatment. It is underpinned by a pragmatic paradigm, and uses a recoverist perspective, which supports a person-centred, holistic approach to substance use treatment, reframing addiction through a cultural lens and focusing on the people affected.

Three studies each explore a different type of evidence: Study 1 explore reporting guidelines for smoking cessation trials, using both deductive framework analysis and a generic thematic approach to examine meeting transcripts from an expert consensus meeting and the associated reporting guidelines for behavioural trials for smoking cessation. This study concluded that established forms of evidence such as systematic reviews, randomised control trials (RCTs) and Delphi studies are not appropriate methods for defining the evidence base for this population. In addition, 5 Behavioural Change Techniques (BCTs) were identified as being recommended for inclusion in a potential intervention (1.1, 2.5, 8.2, 10.2, 11.1). Other key intervention aspects for consideration include: fidelity, mode of delivery, outcome types and measures, and concepts of agency and autonomy.

Study 2 presents quantitative secondary data analysis on the components of smoking cessation interventions, comparing the behaviour change techniques and other aspects of smoking cessation interventions received by people who use drugs or alcohol, when compared with the general population. This was done using a large dataset made of up variables extracted from RCTs. This study found that there were significant differences in many aspects of interventions delivered to people who use drugs and / or alcohol (PWUD/A) and those who did not; specifically, PWUD/A were more likely to receive pharmacotherapy, more likely to receive an intervention delivered by a counsellor of health educator, and less likely to receive group-based interventions. In addition, 12 BCTS demonstrated a significant difference between the likelihood of being delivered to PWUD/A when compared with people who did not. Overall, this study shows that there are significant differences in the content and delivery of interventions received by PWUD/A and people who do not.

The third Study presents the findings of a qualitative, reflexive thematic analysis of semi structured interviews conducted with staff (N=9) and people accessing substance use treatment services (N=18). Key themes were identified: the importance of choice, autonomy and acceptability; risk perception

and prioritisation; organisation and policy; and recovery. Barriers and facilitators to implementing smoking cessation in this setting, across different levels (individual, organisational, system wide) are identified as well as ways to address these. This study also emphasised the importance of the acceptability of interventions to all stakeholders.

The findings from these three studies were synthesised using a behavioural change approach, following the framework of the Behaviour Change Wheel. This examines both the ethos and specific components of behavioural interventions for smoking cessation in this context to present recommendations for intervention development which are both acceptable and effective, as well as tailored for this population and setting. APEASE criteria, with a specific emphasis on acceptability to PWUD/A is used to evaluate the BCTs and intervention components. Twenty-six BCTs meet the acceptability criteria, and recommendations include a group based mode of delivery; the appropriateness of substance use treatment as a setting for smoking cessation; delivery by staff within the treatment service, supported by a peer; enhanced training and education for staff; outcomes used to include harm reduction approaches and outcome measures to be self-reported.

The findings were also integrated to explore broader concepts of acceptability of smoking cessation, and the relevance and applicability of existing evidence to the context of substance use treatment services within a UK setting. Ten recommendations are laid out which make suggestions for design and implementation of a smoking cessation intervention. These are all underpinned by key concepts of choice and recovery. The recoverist lens is used to offer a person centred perspective which embodies the values of recovery, and puts PWUD/A at the heart of research and healthcare, and challenges the hierarchy within research which excludes or marginalises lived experience and the perspectives of PWUD/A.

In conclusion, more contextualised research is needed for PWUD/A to address their specific needs and wants. This research offers an alternative approach which challenges many of the preexisting assumptions about this population and how smoking cessation should be delivered, whilst making recommendations for ways in which a recoverist informed approach can be used to design and implement smoking cessation interventions which are contextualised and tailored for this group. This approach aims to reduce stigma and the health inequalities faced by PWUD/A, by increasing the availability and suitability of smoking cessation programmes, as well as empowering people to have greater agency and autonomy and promoting the values of a recoverist approach.

Declaration

No portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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Abbreviations and definitions

AA	Alcoholics Anonymous
BCS	Behaviour Change Synthesis
BCT	Behaviour Change Technique
COM-B	Capability, Opportunity, Motivation – Behaviour
CPD	Cigarettes (smoked) Per Day
DHSC	Department for Health and Social Care
FTND	Fagerstrom Test for Nicotine Dependence
NA	Narcotics Anonymous
NCSCT	National Centre for Smoking Cessation and Training
NRT	Nicotine Replacement Therapy
OHID	Office for Health Improvement and Disparities
PHE	Public Health England
PROMs	Patient Reported Outcome Measures
PWLE	People (or Person) With Lived Experience
PWUD/A	People Who Use Drugs/Alcohol
Rehab	Residential Rehabilitation Treatment Service
TDF	Theoretical Domains Framework
UKHSA	United Kingdom Health Security Agency
VNP	Vaporised Nicotine Product
WHO	World Health Organization

Chapter 1 Introduction

Tobacco kills more than 8 million people annually. The World Health Organization (WHO) confirms that it is largest preventable cause of death (WHO, 2023). Over 7 million of these deaths are due to direct tobacco use, with 1.2 million non-smokers dying from second-hand smoke each year.

Although smoking prevalence in the UK has reduced significantly in the last decade, with the Office for National Statistics (ONS) reporting prevalence at 20.2% in 2011, and down to 13.3% in the latest figures released in September 2023 (ONS, 2023), some subpopulations still smoke at much higher rates than the wider population. Action on Smoking and Health (ASH) highlight higher prevalence in groups such as people with a mental health condition, people experiencing homelessness and people in contact with the criminal justice system (ASH, 2019), as well as People Who Use Drugs or Alcohol (PWUD/A). This puts them at a much greater risk of developing tobacco related illness and of premature morbidity. In fact, smoking is one of the greatest preventable causes of inequalities in health in the UK.

Health inequalities are "avoidable, unfair and systematic differences in health between different groups of people" (King's Fund, 2022). Smoking is a key driver of health inequalities, due to its harmful nature and the differences in prevalence between and across populations. These differences in smoking prevalence translate to different rates of morbidity and premature mortality. Higher smoking prevalence is associated with almost every indicator of deprivation or marginalisation, including unemployment, homelessness, presence of a mental health condition, incarceration or lack of academic qualifications (ASH, 2019).

People who use drugs or alcohol are far more likely to smoke than the wider population. Although estimates vary, some research suggests that 80-90% of adults in substance use treatment smoke (Guydish et al., 2015), putting them at a much greater risk of smoking related death or associated health conditions (WHO, 2023). It has also been suggested that alcohol dependent adults are more likely to die from smoking related illnesses than from alcohol related ones (Hurt et al., 1995). Despite this, the problem goes largely ignored and untreated (Williams and Ziedonis, 2004), with little smoking cessation being carried out in substance use treatment services or tailored to this population globally. The 2017 UK Government Drugs Strategy recognises the significance of smoking in drug and alcohol using populations and suggests that treatment providers should work with smoking cessation services to offer cessation and harm reduction (HM Government, 2017). Recent UK Government reports, including those from the Department of Health and Social Care (DHSC) emphasise the importance of recovery (DHSC, 2021a), as an essential consideration in substance use treatment services and the

wider sector. The concept of recovery is explored in more detail later in this chapter, but the working definition of USA's Substance Abuse and Mental Health Services Administration (SAMHSA) defines recovery as: "a process of change through which individuals improve their health and wellness, live self-directed lives, and strive to reach their full potential" (SAMHSA, 2012).

Despite positive and wide-reaching recovery being an aspirational concept, services are not commissioned to provide additional support for improving lifestyle, these often fall to third sector organisations or mutual aid organisations such as Alcoholics Anonymous (AA), who may not have training or expertise in specific aspects of healthier living. Smokers often request nicotine replacement therapy (NRT) or similar, which have to be prescribed by a health professional. It is not always clear whose remit smoking falls under; substance use services are not commissioned to provide it, services aimed at the general population do not offer tailored support, and mutual aid organisations and the like often do not have the expertise. People who use drugs or alcohol and wish to quit smoking are often left to their own devices, despite evidence to suggest that this population are motivated to quit (Swithenbank, Harrison and Porcellato, 2022), and the positive impact it can have on multiple outcomes (McKelvey, Thrul and Ramo, 2017).

Substance use can be argued to be both a cause and effect of health inequalities. The Center for Disease Control and Prevention (CDC) define substance use as 'the use of selected substances, including alcohol, tobacco products, drugs, inhalants, and other substances that can be consumed, inhaled, injected, or otherwise absorbed into the body with possible dependence and other detrimental effects' (CDC, 2023). For the purposes of this thesis, substance use refers to the use of substances other than tobacco, including alcohol or other psychoactive drugs. The term 'smoking' refers (in this thesis) to the smoking of tobacco products, not smoking as a method of consuming other drugs such as crack cocaine or heroin.

The effects of long term and/or significant substance use are associated with reduced income or capacity for employment, marginalisation and stigma, poor physical and mental health, homelessness and incarceration. For example, the alcohol harm paradox is a result of research which suggests that despite lower socioeconomic groups consuming less alcohol than higher socioeconomic groups, they experience greater alcohol-related harm (Bloomfield, 2020), suggesting that there are more complicated relationships between alcohol consumption and the harms associated with health inequalities.

1.1 Researcher reflexivity and positionality

This section describes the evolution of this PhD research and my role within it, beginning with some background about where the journey began, and followed by my positionality statement. Finally, the study on which this PhD was based is explained, along with a brief description of how the data gathered during that study has been incorporated into this thesis.

1.1.1 Reflexivity

This research began as an idea that I had several years ago when working and volunteering in a local service offering treatment for drug and alcohol use. The organisation had been asked to attend a local Recovery Walk and help with a public health initiative to try and engage people in recovery with advice and information about smoking cessation. It did not go well. Walking around the stadium, especially in the smoking areas, and asking people if they'd like to test their lung health or visit the public health smoking van to learn more was not well received. Most were good natured about it but being politely told to "sod off" so many times was a little disheartening.

That day made me think more about something I already saw at work – everyone in treatment services smoked, both staff and people accessing the service. It was an integral part of what we did; a cigarette break was a convenient break in a stressful group session, a breather from the paperwork we had to do, a way to bond with other service users or staff. Personally, I smoked more in the period when I was receiving treatment than I ever have done in my life, before or since. There were many reasons for this; I was incredibly anxious and uncomfortable. I was having to face a situation which was new to me, and I didn't know how to be. Anything that took my mind off how I was feeling, or helped me to fit in, was a welcome distraction. I was living in the moment, getting through each day, hour, minute at a time and didn't have the mental capacity to think too far ahead. I desperately wanted to fit in.

As I progressed in my treatment 'journey' from receiving treatment to doing training and becoming a volunteer, before I was offered jobs working in both the community service where I was a service user, and the rehab in the same locality run by the same service provider my smoking behaviours were already established. I didn't suddenly start a new job or a go to a new place, it was a smooth transition and I continued with my smoking at much the same level.

I began studying for an MSc in Public Health (Addictions) whilst I was working at the two services, and the topic of smoking became the subject of my dissertation, which eventually became the foundation of this thesis. I tried to make sense of my multiple roles and perspectives as I embarked on my academic career, trying to find a voice which includes all of those aspects of myself and my

experiences. I believe that my own experiences have both shaped and enhanced the research, and I offer some reflections throughout the thesis from my research journal, in the form of reflective boxes.

My experiences are mine alone, there are aspects which will be consistent between others' experiences, and aspects which are unique to me. With all research, the lens through which we view our work and our own positionality are important to acknowledge. This thesis explores multiple aspects of smoking cessation in substance use treatment services. One chapter uses qualitative interviews with both staff and clients of these services, and I myself have been both. These experiences make me sensitive to some of the nuances and challenges of being in these roles and gives me a different understanding of those perspectives. It also means that I am emotionally invested in this research, it came from something I lived through and continue to live with.

The services from where I recruited were, for the most part, services I had either worked in, volunteered on or received treatment from. Many of the staff and clients knew or at least recognised me, either from the service or from my involvement with local recovery communities and groups. Although I think this made recruitment easier, it undoubtedly led to some subjectivity in the responses I received. I tried to remain open and non-judgemental, and the fact that many of the participants knew me as a smoker helped to remove some of the barriers to discussing the issues around smoking cessation. When I went to a different service, many were reluctant to talk to me, thinking I was there to offer cessation advice. After joining them in the garden for a cigarette, several were happy to take part in an interview. In doing this, I was of course supporting the idea of the therapeutic relationship being enhanced through the sharing of a semi-illicit activity, and the prevalence of staff smoking is one of the issues which perpetuates the normalisation of smoking in these services. Upon reflection, I was doing something that I would have done anyway, not simply to prove myself as 'one of them' and feel that part of doing research with this group involved a degree of vulnerability and honesty about myself. That's not to say I share much, if anything about my personal experiences in research interviews, but most of my participants knew that I was a smoker, and that I had been a client of a substance use treatment service at some point. For the most part, I found that this helped to address some of the power imbalance that is inherent to the research process. It acted as a leveller, and reassured my participants that I had an understanding of their perspectives and facilitated more open discussions.

My positionality statement is presented below, and throughout this thesis, reflections from my research journal are included. These are taken from notes I made throughout the process of this PhD research and document my evolving perspectives on my positionality.

1.1.2   Positionality statement

My research reflects my own experiences and values; I have experienced problematic alcohol use, have been a service user, peer mentor, volunteer and staff member in substance use treatment. I have also been a smoker. I am involved in several recovery communities, although I don't identify as being in recovery myself. I do belief in the ethos of recovery, and the recovery journey as a process of self-development and improvement. I am aware that these experiences and perspectives bring their own biases into my research and aim to identify and reflect on these so that they can inform and develop the research rather than detracting from it. I am also aware that my experiences are not universal, and that the experiences of every individual entering substance use treatment are different. I was fortunate to have a supportive family and stable living situation throughout my time in treatment and did not face many of the multiple disadvantages that many in this position do have to deal with. I am also fortunate enough to be in the position of studying for a PhD, and all of the advantages that my education and socio-economic status bring. Whereas this is not unique in substance use treatment, it does give me a different perspective than most of my participants. I exist in the 'between state' of being neither fully immersed in one world or another. I aim to bring these multiple perspectives, roles and experiences to enhance my research and develop this work to reflect what I think is important.

1.1.3   Building on previous work

This research project builds on previous work conducted in 2017 as part of the MSc which provided the foundation for this thesis. This consisted of ten semi structured interviews with service users (or former service users) in a residential rehabilitation service for people who use drugs or alcohol and explored their smoking behaviours, factors relating to smoking and smoking cessation and the relationship between smoking and substance use. The findings from this MSc study have since been published (Swithenbank, Harrison and Porcellato 2022). Although this is explored in more detail in Chapter 6, the study found that service users agreed that residential treatment offered a suitable setting for smoking cessation, although there were concerns about jeopardising substance use outcomes and disagreements about how best to provide cessation interventions. The study also identified barriers to smoking cessation, both at individual and organisational levels, as well as highlighting the need for further research to explore the different perspectives to address these barriers. It also acted as the catalyst for this PhD, as it emphasised to me the importance of the research and the need for further work.

The data from this study (ten qualitative interview transcripts) were used in Study 3 of this PhD, to supplement original data collected as part of the new study. This was done for several reasons; firstly,

the interviews provided rich and detailed insights into the perspectives of people who had been in residential rehabilitation services. Although the original data and analysis was used to inform this thesis, there was much more to be gained from a further analysis which looked at slightly different research questions. Secondly, for pragmatic reasons: Recruitment in this population can be challenging, and it was important to gain as many perspectives as possible to answer the research questions. A key theme from the original study was the importance of time and place, so it was useful to include the voices of people who had experienced different types of treatment, and who were at different stages of the treatment journey. Ethically, using secondary data sources reduces the burden on participants whilst extracting the most useful and interesting aspects. Although several of the participants of the original study were keen to be involved in future studies, the similarity of topics covered, and methodology used in the qualitative study might have made re-interviewing the same people a second time redundant and reduced their willingness to take part in future research.

The use of this secondary data and methodology of the study will be discussed in detail in chapter 6 but involves qualitative secondary analysis in both a deductive and inductive manner, in conjunction with new, original data that was collected in the course of this PhD.

1.2 Context

1.2.1 Tobacco

Smoking damages nearly every organ of the body. It causes at least 15 types of cancer: lung, larynx, oesophagus, oral cavity, nasopharynx, pharynx, bladder, pancreas, kidney, liver, stomach, bowel, cervix, leukaemia, and ovarian cancers (Cancer Research UK, 2023). In addition to cancers, primary risks of tobacco use include pulmonary and cardiovascular diseases, as well as renal, reproductive and oral health conditions. Smoking can also worsen or prolong the symptoms of respiratory conditions or infections. In England, the Office for Health Improvement and Disparities (OHID) reports there were an estimated 506,100 smoking related hospital admissions in 2018 to 2019, an increase on the previous year, and 74,600 people in England died in 2019 from smoking related illness, a decrease from the previous year (OHID, 2022).

As discussed above, data on the prevalence of smoking in people who use substances is limited and estimates vary (Guydish et al., 2015), but some studies estimate between 80 and 90% of those accessing treatment are smokers, which is a huge difference from the 12.9% reported in 2022 for the wider population. Despite the population prevalence steadily declining, there appears to be little change amongst those using substances. Mainstream and population level approaches such as indoor smoking bans, plain packaging, tax increases and health education campaigns have had significant

success on reducing smoking prevalence in the general population, yet some populations appear resistant to these interventions. There are many reasons for this, which require further exploration. Some of these are discussed in more detail in Chapter 2: Literature Review.

Substance use treatment services in the UK have not traditionally offered smoking cessation, or other health interventions besides those targeting other substance use. This is their primary aim, and what they are commissioned (and paid) to provide. In periods of austerity and concerns about public spending, substance use treatment services are one of many services facing budgetary cuts and increasing demands for treatment. In the face of these pressures, as well as the ongoing impact of the COVID19 pandemic, substance use treatment services are overstretched and often lack the capacity to provide additional services, even if attitudes shifted towards smoking cessation (Schofield et al., 2022; DHSC, 2021b). These organisational factors are a significant barrier to integrating smoking cessation: many services and staff do not feel that it falls within their remit. This is despite many people accessing services wanting to quit smoking (Boozary et al., 2022) and the evidence to support tackling both substance use and tobacco at the same time (Baca and Yahne, 2009). For this reason, it was important that research on potential interventions or approaches for smoking cessation in this context to take into account staff perspectives and to ensure acceptability of the proposals to multiple stakeholders.

Other key barriers to changing smoking behaviours in this population include misconceptions and fears around the impact of a quit attempt on outcomes related to other substances; many clients and staff perpetuate the myth that trying to give up more than one substance or behaviour at once can jeopardise both. There is plenty of evidence (Romano et al., 2021) that this is not the case, and that quitting smoking during substance use treatment can actually improve outcomes for all substances, but this concern is often cited by both clients and staff. Smoking is often referred to as a coping mechanism, especially during the stressful and challenging period of entering substance use treatment. Many fear that removing this source of perceived support would be damaging and reinforce this by discouraging peers or clients from considering smoking cessation at this time (Kodl, Fu and Joseph, 2006).

1.2.2   Smoking cessation

The literature review chapter will discuss options for smoking cessation in more detail, but a brief overview of the different methods commonly used is presented here. Evidence for these in substance using populations is limited, so where relevant the review will explore studies in similar populations, who are also known to smoke at higher levels and face additional inequalities. Popular cessation

methods include the use of Nicotine Replacement Therapy (NRT) such a patches, inhalers or gums which offer an alternative source of nicotine which can assist with withdrawal symptoms such as irritability and cravings. Pharmacotherapy involves the use of (usually) prescribed medications. According to Public Health England (PHE), Varenicline and Bupropion are available on prescription across the UK. Varenicline works by blocking the reward and reinforcement effects of smoking in the brain and can increase quit success by 2-3 times. Bupropion assists with withdrawal symptoms and reduces cravings, much like the way that NRT does (PHE, 2019).

E-cigarettes or vapes have grown in popularity in recent years. Despite controversy surrounding their use, there is best available evidence that they are effective as a smoking cessation tool (Lindson et al., 2024). Concerns remain around their long-term usage, and around their appeal to non-smokers, especially young people, but there is a general agreement that they are less risky than continued tobacco smoking (NHS England, 2022). E-cigarettes can be effective as they offer a replacement for the behavioural aspect of tobacco smoking, as well as nicotine replacement. Many smokers find the habit of smoking hard to break, and e-cigarettes enable them to continue to engage in familiar behaviours but in a less harmful way.

Behavioural interventions are also widely used and regarded as effective for smoking cessation. A Cochrane review (Hartmann-Boyce et al., 2021) examined the effectiveness of behavioural interventions and found that they can increase quit rates at six months or longer.

Counselling, guaranteed financial incentives and text messaging were found to be effective, and tailoring or targeting interventions can further increase quit rates. Active components of behavioural interventions can be identified using the Taxonomy of Behaviour Change (Michie et al., 2015). These are discussed further later in this chapter and in Chapter 7.

UK Government guidance on smoking cessation (PHE, 2019) recommends the use of NRT or e-cigarettes to improve chances of quitting by 1.5 times. The use of pharmacotherapy can double chances of quitting, and combining these with expert support such as that available from smoking cessation services can triple quit chances. Importantly, there is no evidence of harms or adverse effects of behavioural interventions for smoking cessation. However, all of these recommendations are for the general population and may not be suitable for specific sub-populations with higher smoking prevalence and additional challenges.

1.2.3   Substance use treatment services

Alcohol and drug treatment in England is commissioned on a local level using a Public Health grant, and as such varies by locality. According to the Local Government Association (2021), each area is responsible for commissioning services and interventions which meet the local treatment needs. The conditions of the public health grants specify that:

> *"A local authority must, in using the grant: have regard to the need to improve the take up of, and outcomes from, its drug and alcohol misuse treatment services."*

The 2017 Drugs Strategy (HM Government, 2017, p.33) sets out the UK Government's strategy for drug treatment, and recognised the importance of smoking in this population:

> *"Smoking is also highly prevalent among alcohol and drug misusing populations and is a significant contributor to illness and death. Drug treatment services should work with local stop smoking services to offer smoking cessation to all, and harm reduction for people unable or unwilling to stop smoking."*

New guidance published in September 2020 on the COVID-19 outbreak also recognised this issue and recommended the introduction or increase of e-cigarette or nicotine replacement therapy provision (PHE, 2021). This is due to the increased risks of respiratory harms in this population, with particular concern around COVID-19, and the guidance document recommends that all service users be encouraged to stop or reduce their smoking.

In England, OHID (formerly PHE) also works with commissioned services and local authorities to provide them with bespoke data, guidance, tools and other support to help them commission services more effectively. This data is recorded by the National Treatment Monitoring System (NDTMS) who produce reports on the data, which is gathered from service users and staff completing forms such at the Treatment Outcomes Profile (TOP). PHE was abolished in 2020, and its functions were divided between the UK Health Security Agency (UKHSA) and OHID (Hunter, Littlejohns and Weale, 2022).

NDTMS data is collected from substance use treatment services across England, via information that is collected from everyone entering treatment for drug or alcohol use. The client's keyworker or similar will ask the client a range of questions and gain consent to share data with the NDTMS, which was held by PHE and has now migrated to the UKHSA. This data is collected using a TOP (treatment outcome profile) form (PHE, 2018a) and entered into the online system. The form includes questions

about substance use, crime, and health and social functioning. These are completed on treatment entry, at six monthly reviews and at treatment exit (PHE, 2018b).

Amongst the data collected is smoking status and referrals to smoking cessation services. Data from 2022 indicated that 46,000 people reported that they had smoked in the 28 days prior to entering treatment, 53% of those entering treatment. Percentages of smokers by primary substance used are illustrated below, using data from the 2022 UK Government report on substance use (OHID, 2023). These are still much lower than other estimates suggest, although they are much higher than the general population. Despite these high reported levels, only 4% were recorded as having been offered referrals for smoking cessation interventions (OHID, 2023).

Figure 1   Smoking prevalence at the start of treatment OHID (2023).
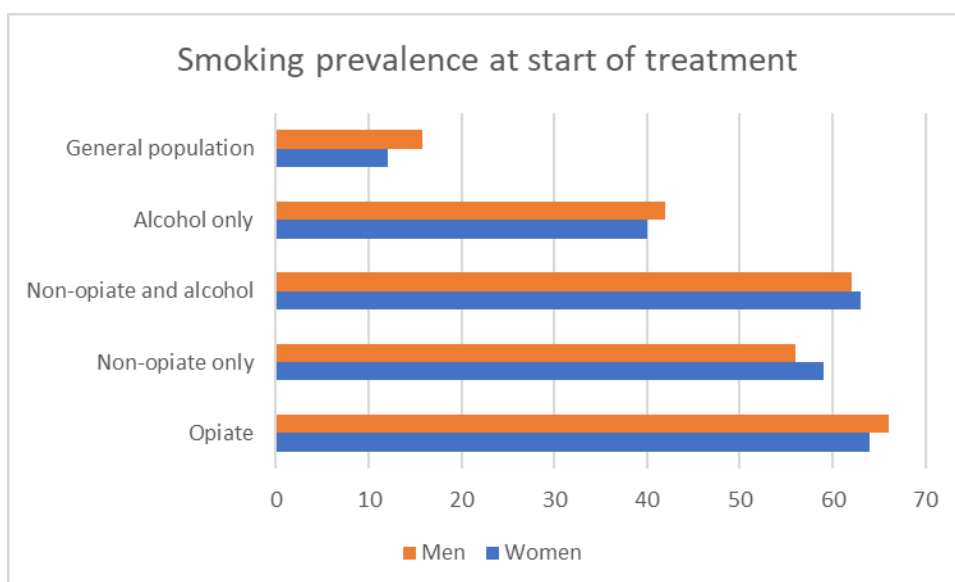
The inclusion of tobacco use in the NDTMS dataset is a relatively recent development; it was only in the 2016/17 report (PHE, 2017) on adult substance use statistics, based on the NDTMS dataset, that smoking status was included for the first time. At that time, prevalence of people in substance use treatment was between 34% and 59%, depending on primary substance being treated for. Smoking status was recorded at treatment entry, and at six-month review. The most recent version of the TOP form, which is used to compile the NDTMS dataset, includes questions on smoking status at each review, which should take place every six months, and at treatment start and exit.

However, although the TOPs and therefore NDTMS collect data on smoking status and have options to record the referral to smoking cessation services, they do not collect data on smoking interventions or outcomes beyond these questions. As smoking cessation services are not included as core

structured treatment options in NDTMS, and the outcomes are not recorded beyond smoking status (self-reported) at six monthly intervals, this dataset is of limited utility to measure or explore smoking cessation outcomes or intervention in substance use treatment services. It does offer an indication of the extent of the issue by measuring smoking status, but there are some limitations to this data.

Firstly, this data is only collected on people who are engaged with substance use treatment services, which is likely to be missing a large number of people who have a treatment need but are not in treatment (OHID, 2023). In the 2022-2023 data, OHID reported that the number of people using opiates but not in treatment was 48%. This indicates that there are large numbers of people who have a treatment need and are likely to be smokers, but are not accessing treatment, so the problem is likely to be much bigger than the available data demonstrates.

Additionally, it relies on a combination of self-reported and staff reported / observed data, which means that human error, the ways in which questions are asked and reported and subsequently inputted into the system can all present opportunities for missing or incorrect data being entered. Several studies have reported on the issues and limitations of this dataset (Roberts, 2020; Donoghue, 2021; Oerton, 2003), highlighting that all data sources are subject to errors in data entry and missing data, and that individuals within NDTMS may have an interest in providing non-accurate personal information to substance use treatment services. Self-reported data is also potentially unreliable, as it is subject to recall bias as well as deliberate under-reporting (Khalili, 2021).

The nature of substance use assessments can be challenging, and staff often focus on the essential information to begin treatment, so some questions such as smoking status may not explored in any depth. The attitudes of staff and service providers can influence reporting and the way in which conversations around tobacco use are initiated, as many do not see smoking status or cessation as relevant or the responsibility of substance use treatment (Swithenbank, Harrison and Porcellato, 2022). This is one reason that is it essential that any smoking cessation programme or intervention is seen to be acceptable by both staff and service providers, and that a cultural shift takes place to integrate smoking cessation into substance use treatment.

It is worth mentioning that although this research does not exclude anyone based on their consumption of substances beyond tobacco, the setting of substance use treatment services is important to acknowledge. In the UK at least, people entering substance use treatment do so voluntarily. Although there are varying degrees of willingness to enter treatment, this research is based on the premise that people accessing substance use treatment services have a desire to change their behaviours in some way. As discussed in more detail in Chapter 2, motivation to change can vary

greatly over time and depending on what drives the motivation; intrinsic motivation can lead to positive outcomes for health and well-being when compared to extrinsic motivation. Broadly speaking, as long as an individual entering treatment has a desire to make positive behavioural changes, then smoking cessation can and should be offered. A key premise of self-determination theory (Deci and Ryan, 2015) is that improving autonomous or intrinsic motivation by fostering competence, relatedness and autonomy can lead to positive changes in health and or well-being, and this premise underlies the entire concept of recovery and substance use treatment.

1.3 COVID-19

This research began prior to the COVID-19 pandemic, and continued long after the UK lockdowns had ended. This brought about some changes to the methodology and study designs, which are discussed more in later sections where relevant, and in some of the reflective boxes included throughout this thesis.

The COVID-19 pandemic has had serious implications for people using drugs or alcohol, especially those who smoke. As stated earlier, government guidance in September 2020 recognised the increased risk to smokers and recommended that all clients accessing drug and alcohol treatment be encouraged to reduce or stop smoking (DHSC, 2021). Evidence suggests that individuals who use drugs or alcohol are at a greater risk of infection for COVID-19 (Mallet, Dubertret and Le Strat 2021), as well as risks associated with reduced access to treatment and of the changing drug supply and potential overdose risk or withdrawal. Public health efforts to encourage smoking cessation in response to the pandemic have been somewhat effective in the wider population, although there is no current data available from substance use treatment. A study of Google trends identified no tendency towards increased interest in quitting smoking during the first months of the pandemic (Heerfordt, 2020).

The COVID-19 pandemic triggered a 'lockdown' in the UK, where face to face health services were greatly reduced and many faced challenges accessing healthcare. Although the drug and alcohol service in Cheshire West and Chester remained open, many staff worked from home and much client contact was conducted via telephone or online. It is not yet known how much impact this has had on this specific population, but it is thought that the health impacts in general could be significant, with reported mental health issues rising and access to healthcare more difficult as NHS resources are directed towards the pandemic. There are concerns that more and more people will face increased anxiety and depression due to isolation and stress, which may in turn increase substance use (Satre et al. 2020). A study by Whitfield et al. (2020) identified a significant decrease in the number of PWUD

attending needle and syringe exchange programmes, stating that this was unlikely to be due to a reduction in the number of people injecting drugs, and more likely due to reduced accessibility of NSPs during the pandemic. Another study by Kesten et al. (2021) explored the impact on the pandemic on PWUD, identifying changes in drug use as well as the negative impacts on mental health and issues around accessing services during this time. These additional barriers and challenges in accessing treatment and the exacerbation of treatment need highlight the importance of research in this population, who face additional inequalities and are often under-served in health research.

Reflections on the pandemic; challenges and adaptations:

As the pandemic dragged on, it became clear that it would not be possible to continue with my planned studies. The original plan included the co-production of an intervention, with regular face to face workshops used to develop and refine the intervention. This would not be possible in the near future. I considered adapting the methodology, switching to online meetings and workshops, but ultimately decided against this. Having worked in the services I was planning to recruit from, I was aware of their limited capacity to deliver online programmes, and many of my participants were not 'tech savvy' as they put it. I didn't want to limit their participation due to lack of resources, confidentiality concerns or costs. I still believe that the rapport you develop in person cannot be adequately replicated online.

I decided to continue with staff and client interviews, online or face to face as rules and availability dictated, but the intervention development workshops would be put on hold, indefinitely. Instead, I decided to explore other aspects of behavioural interventions for smoking cessation, things which had been in the back of my mind for a while. I would use existing data to support my theories, adding to the evidence base and exploring the ways in which different types of evidence are, or can be, used to inform policy and practice.

1.4 Language

There are many different terms used in this area, and many are considered stigmatising (Scottish Drugs Forum, 2020). For the purposes of this thesis, the language and terminology used is laid out here. Because the focus of this research is on people who are accessing substance use treatment services, they are referred to herewith as 'clients'. Although not an ideal choice, it was chosen to differentiate this group as people who are accessing services, rather than staff or people who are not accessing treatment. 'Patient' can be over medicalised and is not commonly used in UK services. 'Service user' is common but reinforces the idea of a 'user' of something, which is problematic in terms of substances and goes against the concept of 'person first' language (NADA, 2021; INPUD, 2020).

It is worth discussing the language used in this thesis. For the purposes of this document, People With Lived Experience (PWLE) refers to people who have first-hand experience of smoking and of being in substance use treatment. There are many terms which are used to describe people who use substances, but this document refers primarily to people who are in treatment for their substance use. This may be alcohol or illicit drugs, or any substance that the person in question feels their use of such substance is problematic. Some such terms, such as addict, drug (or service) user etc. are often used interchangeably, but this can directly or indirectly contribute to the stigma faced by people who use substances.

In the services I visited and spoke to people working in, drugs and alcohol were treated by the same service. The services I recruited from focused on substances only, not gambling or other problematic behaviors. There may be some different offerings or pathways depending on the problematic substance, but the basic services offered remain the same. It may be of interest to explore the difference in smoking status by primary substance used, but for the purposes of this research participants were not asked to specify which substance(s) they used. It is certainly the case that many people in treatment report polydrug use, and separating participants by their primary substance used would require a much larger sample, and may not be pragmatic in designing an intervention for services which do not generally separate people in this way. An intervention to be delivered in a general substance use service needs to be adaptable for all problematic substances.

Substance use in this context relates to any mind-altering substances apart from tobacco. Although there are important differences between substances and the treatment and recovery processes, the treatment services and evidence used in this research treat all substances, often in the same group settings. As such, the research does not differentiate or even enquire as to participant's primary substance, as it is complex and nuanced and requires a more delicate approach. Substance use rather

than 'abuse', 'misuse' or 'addiction' is used throughout this thesis, for many reasons. It is regarded as the less stigmatising of these choices and encompasses all degrees of substance use (National Institute on Drug Abuse, 2021) This includes any use that the participant themselves define as being problematic, regardless of clinical diagnosis. For the same reason, 'addict' or 'alcoholic' are not terms that will be used here, unless explicitly used by participants themselves. While some people identify as addicts or alcoholics, for example those who belong to mutual aid organisations such as AA or Narcotics Anonymous (NA), for some people this language is stigmatising (Kelly, Saitz and Wakeman, 2016).

Abstinence is used throughout, although it is important to note that this is specific to the substance being discussed and is not intended in a judgemental manner. For much research, abstinence, defined as refraining from use of the substance in question, usually tobacco in this area. As discussed in other sections, abstinence as a treatment outcome or goal has been contested (Notley et al., 2015) and there are other outcomes which may be more appropriate for the individual. Abstinence may be a temporary or a longer-term state; a treatment goal in itself or a steppingstone in the process of recovery. The term abstinence in relation to smoking is used here to differentiate between smoking cessation approaches which include a more broad and inclusive definition, such as those which allow for reduced smoking or harm reduction approaches rather than the 'not a puff' rule described by the National Centre for Smoking Cessation and Training (NCSCT) which advocates for an abrupt cessation and does not allow for a single puff (NCSCT, 2013).

1.5 Treatment Disciplines

Treatment options usually vary depending on their underlying philosophy, or treatment discipline (Comiskey, 2019). Treatment services in the UK offer a range of services aimed to support and treat PWUD/A. Different providers may have different philosophies, and may offer different additional types of support, but the basis is psychosocial interventions and/ or pharmacotherapy, depending on the individual and the substance(s) being used. Private treatment options are also available, usually in the form of residential detoxification or rehabilitation centres. The main treatment disciplines can be categorised as abstinence -based, harm reduction-based, or recovery-based, although these are not always mutually exclusive.

In addition to government funded treatment, many people access support groups, either in addition or as an alternative treatment option., many of which are run by people with lived experience Mutual aid organisations such as AA, NA and many others are based on a '12-step' approach, which provides a framework upon which the fellowships are based and are predominantly abstinence based. Other

organisations such as SMART Recovery (Beck et al., 2016) have also become more established in the UK in recent years and offer an alternative which is based on similar principles but with some key differences, such as the lack of a religious or spiritual element. Many other local and independent support groups exist across the UK, and more have become available online, especially since the pandemic. As these groups are not funded or in any way run by government organisations, they do not have to follow any set guidelines or processes beyond any legal requirements such as not smoking indoors and are not bound by a specific treatment philosophy. AA and NA are by far the most popular and widely available in the UK, and these are based on an abstinence approach, although this does not usually extend beyond 'mind altering substances' to include caffeine or nicotine.

Harm reduction is an important concept in research relating to PWUD/A. Like recovery, it is an ethos based on a non-judgemental, person-centred approach. Harm Reduction International define harm reduction as being "grounded in justice and human rights. It focuses on positive change and on working with people without judgement, coercion, discrimination, or requiring that people stop using drugs as a condition of support" (Harm Reduction International, n.d.). It has been a controversial concept but has been accepted in the UK in relation to substance use, with services such as Needle and Syringe Exchange Programmes (NSP) being long-established. In terms of substance use treatment services, treatment discipline can influence organisational stances on harm reduction. Although NSPs are an established provision in the UK, the setting of hard reduction-based treatment goals is less straightforward. This can be problematic in mutually agreeing goals for treatment outcomes.

In terms of tobacco harm reduction, this is still a controversial issue. Reducing harms from tobacco use can take the form of reducing the number of Cigarettes Smoked Per Day (CPD), changing smoking behaviours, or switching to alternatives such as e-cigarettes. Changing behaviours could involve changing puff topography (reducing the strength of the 'drag' or inhalation on the cigarette), switching to non-combustible products, such as snus or periods of temporary abstinence (American Thoracic Society, 2018). The use of e-cigarettes has been endorsed by the UK Government, the National Institute for Health and Care Excellence (NICE), the Medicines and Healthcare Products Regulatory Agency (MHRA) and organisations such as ASH as a harm reduction approach (ASH, 2024; MHRA, 2022; NICE, 2023; Wise 2023).

Although quitting all tobacco use is the best option in terms of health, harm reduction recognises that this challenging and may not be feasible for everyone. Reducing the associated harms of smoking is preferable to doing nothing and have been linked to increased quit attempts and abstinence in the long term.

1.6 Recovery

Recovery has many definitions, but can be described as a person-centred, individual phenomenon (as opposed to a service). For some people, recovery simply refers to sobriety or abstinence from using substances. For others, it is an integral part of their identity and community.

SAMHSA defines recovery as "a process of change through which people improve their health and wellness, live self-directed lives, and strive to reach their full potential" SAMHSA (2012). As Neale et al. (2016) note, recovery has moved from being almost exclusively associated with 12-step fellowships and abstinence to being part of the wider treatment and rehabilitation landscape, including housing, health, employment, offending, and relationships. In Ireland, The Reducing Harm, Supporting Recovery strategy (Department of Health, 2021; Comiskey, 2020) refers to the journey of recovery as something highly personal, with different priorities and goals for each individual. The UK's Government appointed Recovery Champion, Dr Ed Day, discusses his perspectives on recovery in his first annual report (Home Office, 2021). He suggests:

> *"Recovery is about much more than the control of problem substances and requires a gradual accumulation of positive benefits."*

He goes on to say that it can be defined as a process, through which people gain, or re-gain, their health, sense of self and improve their lives. One of the criticisms of the term is that it implies a 'recovery' of something that was previously in existence. For many in recovery, the process is not about returning to a previous way of life, but inventing a new one which is more in line with their beliefs and values. Much debate can be held over the key components of recovery, but there are some dimensions which are generally agreed upon. These include health, purpose and community.

SAMHSA's framework of 'recovery-oriented guiding principles'' (SAMHSA, 2012) include ten principles that are central to the concept of recovery. These are: hope; person-driven; many pathways; holistic; peer support; relational; culture; addresses trauma; strengths/responsibility; respect.

Although a concept originally established in the USA, recovery has grown in popularity in the UK, with the recent independent review by Dame Carol Black (Home Office, 2020) focusing heavily on the importance of recovery support. Precise definitions may be contentious, but that overarching concept is sound. The report also emphasises the importance of a holistic approach, where different systems and services work together to support people to live better lives. Recovery represents a shift from medicalised treatment which aims to 'cure' acute problems, to a broader approach which recognises

the multi-faceted phenomenon of substance use and its treatment. It recognises that substance use is often a long-term issue, and short-term treatment options are fundamentally flawed and lack in longer term efficacy. For many people, recovery is a long term, or lifelong process which requires maintenance and support.

Recovery communities can offer people a sense of belonging and support that goes beyond treatment. For many, not using substances becomes part of a new identity, and being part of a recovery community can celebrate this. Smoking is often ingrained in this identity, and many in recovery continue to smoke at high levels. It remains a part of the individual's identity which connects them to their previous sense of self, which is often challenged and changed through the process of recovery. The concept of life in recovery should be seen as a positive thing, offering new opportunities and ways of life where wellbeing is central, and non-substance related aspects should be included in this. This approach encourages people to be healthier, and should address housing, employment, education and training, social relationships and building recovery capital. Adoption of a healthier lifestyle incorporating aspects such as diet, exercise and mental health should be key areas of focus.

Recovery-focused treatment can be combined with either a harm reduction or an abstinence-based approach, or a combination of the two. There is evidence for and against both abstinence and harm reduction approaches, but recovery can offer an ethical, person-centered and holistic approach which focuses on improved health and well-being beyond the use of substances. Harm reduction can fit within this treatment philosophy, and it is underpinned by concepts of choice, agency and autonomy. Abstinence can also fit within a recovery-based approach, for the same reasons, if it is an individual choice. The concept of recovery is not an absolute, it provides a philosophy that encompasses a multitude of options. An individual can choose abstinence in relation to heroin, but still consume other substances, including tobacco in moderation or a controlled way. The flexibility of the approach provides inclusivity and autonomy.

1.6.1 Outcome measuring

Outcomes are important when exploring treatment options for substance use and for smoking cessation, but deciding which outcomes should be included or prioritised can be informed by the underlying treatment philosophy. Patient Reported Outcome Measures (PROMs) are instruments which can be used to measure patient reported outcomes. For substance use, treatment outcomes beyond survival, major morbid events and biomarkers can be collected using PROMs. Patient perspectives are not accurately captured using only traditional outcome measures, so it is important to explore other ways of measuring treatment outcomes. Unlike other outcome measures, PROMs

focus on capturing improvements to the patient's health and well-being and can assess a broader spectrum of well-being related outcomes such as mood, experiences of symptoms, functional status and health-related quality of life (Commonwealth Fund, n.d.; Kendrick et al., 2016). Research suggests that outcome measurement for substance use should go beyond measuring substance use and look at wider variables including bio- psycho- social factors (Alves, Sales and Ashworth, 2017).

Patient reported outcomes can be defined as "any report of the status of a patient's health condition that comes directly from the patient without interpretation of the patient's response by a clinician or anyone else" (Center for Devices and Radiological Health, 2016). They can provide critical information for patients and service providers and are especially useful when externally observable outcomes are not available or appropriate (Higgins et al, 2023) and can provide the only reasonable approach to treatment evaluation for emotional function. They can evaluate patients' experiences of symptoms, functional status and health-related quality of life (Johnston et al., 2023).

In tandem with the increasing acceptance and promotion of recovery (which is person-centred), the benefits of PROMS across a range of health issues have been highlighted. This is perhaps a move away from clinicians and services 'assessing' the outcomes that individuals have achieved to an approach where the individual considers their own individual outcomes.

The involvement of people with lived experience through various types of engagement and collaboration has gained support and recognition as an important aspect of research and service development, as well as delivery and evaluation. Lived experience is defined as "personal knowledge about the world gained through direct, first-hand involvement in everyday events rather than through representations constructed by other people" (Graham et al., 2019). Increasingly, this has been employed in the substance use field and when exploring recovery outcomes, and therefore it is not surprising that the use of PROMs has been considered when measuring recovery outcomes.

The recovery movement highlights the importance of a patient centred approach to both treatment and research. PROMs place the voice of the patient at the heart of any evaluation. It has been demonstrated that patient-set treatment goals and outcomes are often incongruent with those of substance use treatment providers and services (Marchand et al., 2019), highlighting the need for a reprioritisation of stakeholders and approaches to outcome measurement. Using PROMs can identify discrepancies between clinician and patient perspectives and collect more relevant data to assess the effectiveness of treatment for the individual as well as the service. Alves, Sales and Ashworth (2017) also suggest that patients in treatment for substance use have a much greater diversity of concerns

than have previously been included when designing outcome measures. Identifying these concerns may facilitate a better understanding of treatment approaches and improve outcomes.

1.6.2 A recovery informed approach

This thesis is underpinned by the concept of recovery. Although there are many varied and contradictory definitions of recovery, the key element is that it features a person-centred approach, and the belief that all people deserve a good quality of life. Substance use is not a moral failing, or a personality flaw. People who engage in such behaviours should be allowed to exercise their rights to choose how they live their lives and should be supported if and when they need or want support. Support and treatment should take a non-judgemental approach and should take into account the individual's goals and needs. Recovery is a holistic approach, which emphasises quality of life and health improvement. Smoking cessation should be included within this approach, as the huge health inequalities faced by PWUD/A need to be addressed and should be included as part of an overall health improvement approach. The recoverist approach is based on a shift in the way people who use drugs or alcohol are viewed and offers a non-judgemental and non-discriminatory way of thinking.

It is important to view recovery from a behavioural perspective. Although aspects of it can be medicalised, and physical dependency may require medical treatment, much of the process is psychological, requiring changes in ways of thinking and behaving. These changes can affect much more than the use (or cessation) of certain substances, for many the changes are much broader and can influence every area of their lives. For this reason, a behavioural approach, based on self-determination theory (Hagger et al., 2020), can have a wider influence than just on smoking behaviours. Empowering people to feel motivated, competent and giving them a sense of relatedness can have a 'ripple effect' which changes how they feel about themselves and how they interact with the world. Feeling worthwhile and having a sense of hope can act as a significant motivator for positive change in all aspects of life.

The choice of a recoverist lens rather than recovery is a distinction based on the motivations behind this research. It was based on the desire to highlight the inequalities faced by PWUD/A and to attempt to improve the evidence base and subsequent treatment options that are available for this population. The term 'recoverist' is a blending of the words 'recovery' and 'activist' and comes from the Recoverist Manifesto (Parkinson, 2015). The Manifesto is a '*powerful collective statement that unites the voices of individuals in recovery*' (Portraits of Recovery, 2023), and aims to reimagine and redefine the ways in which PWUD/A or are in recovery are represented and is defined as a form of social activism, aiming to encourage people in recovery to '*change the world and (their) place within it*'.

Recoverism is the philosophy which guides the recoverist movement, championing those in recovery and advocating for a *'transformative redefinition of addiction and identities'* (Portraits of Recovery, 2023). It seeks to *'reframe and humanise the lived experience of substance misuse and/or mental distress away from biomedical models, pathologies and criminalization'* (Ravetz and Gregory, 2018).

Recoverism also acknowledges the discrimination and stigma faced by PWUD/A and that this affects how people are treated by others and perceived by others as well as themselves. The recoverist approach attempts to challenge the hierarchical systems and power imbalance which contribute to stigma and to the health inequalities faced by PWUD/A. By offering a more holistic approach to treatment and focusing on choice, autonomy and well-being, treatment offerings can help to redress this.

This thesis embodies a recoverist approach; it is a form of activism in that it challenges established norms and expectations around research and the role of PWUD/A in it and questions the use of an evidence base that excludes this population. The recoverist lens allows for the acknowledgement and exploration of the perspectives of PWUD/A by positioning them as experts in their own experience, with valid and essential contributions to evidence base.

Reflections on recoverism

Choosing recoverism as a lens through which to approach this research came about almost by accident. I knew that the voices of people with lived experience of using drugs or alcohol was central to my understanding of treatment and research, but I was reluctant to label myself as being in recovery, or to argue that this research be viewed as the voice of someone in recovery. The process of reflection throughout allowed me to examine by role and my feelings about not being entirely comfortable in either the research or recovery worlds, coming to settle on a hybrid which more accurately reflects my own experiences and my stance. Recoverism is not just for people in recovery, it is for people who champion the recovery movement and aim to make recovery visible and attractive.

Recoverist: a person who is not necessarily in recovery from drugs and alcohol but a firm champion of the recovery movement.

All it takes to become a recoverist is a declaration stating...'I get it!'

1.7 Different perspectives and the evidence base in context

One focus of this PhD is the importance of appropriate evidence relating to PWUD/A. Much academic literature is based on studies or trials which do not necessarily reflect the needs and perspectives of any sub-groups or populations.

1.7.1   Research on PWUD/A

Service evaluations and studies which focus on treatment outcomes tend to focus on abstinence from using substances. As discussed above, there are numerous outcomes which could and should be evaluated, including patient or client reported measures and client defined goals. These may include reduction in substance use, quality of life, mental and/or physical health, social factors, housing and employment or other activities which are associated with recovery. These varying domains do pose a challenge in presenting comparisons between studies or services, defining what constitutes 'success', and as such as not usually utilised in academic literature. Much like current service models, research tends to focus on abstinence-based outcomes rather than harm reduction.

One aspect of substance use treatment which is established but not always acknowledged is that multiple attempts may be needed to establish abstinence / recovery (Kelly et al, 2019). Many smoking cessation programmes which claim to include behavioural or psychosocial support actually have a very limited scope, and strict usage requirements. Failure to engage, such as missing phone calls etc will result in discharge from the services, as will continued use of tobacco products. They do not often incorporate a harm reduction approach, taking a 'not a puff' approach, although this may be self-reported it does not encourage an open and honest relationship between client and practitioner. Outcome measures are also very specific, which makes them ideal for comparing outcomes across studies, but means that studies that take a broader approach, or a harm reduction approach, do not meet criteria for inclusion. Outcome measures are also often required to be biochemically verified in smoking cessation studies (Swithenbank et al., 2024). This can prove problematic with any population, as samples usually need to be collected in person and within a set timeframe to be eligible.

A key aspect of recovery, and of substance use treatment, is choice. Abstinence is one approach, but by no means the only one. A more person-centred approach could include individually defined outcomes, which for smoking cessation may include a reduction in the number of cigarettes smoked per day, or the switch to an alternative nicotine delivery system.

Some aspects of study design are not appropriate for use in different populations. Any aspects of an intervention which increase or ignore issues of stigma are not acceptable to the population who they

are aimed at. Clinical trials usually have strict inclusion and exclusion criteria, and often require 'healthy' participants so as to be clear on the effects of drugs or interventions without other interactions. This often excludes PWUD/A due to multiple co-morbidities. Clinical trials may be useful for testing efficacy of drugs or interventions in a clinical setting but lack real world applicability and fail to take into account the individual, social and environmental factors which influence behaviours and are beyond the scope of these trials. Outcome measures are also very specific, which makes them ideal for comparing outcomes across studies, but means that studies that take a broader approach, or a harm reduction approach, do not meet criteria for inclusion.

Retention in studies can also prove problematic with PWUD/A (Dacosta-Sanchez et al., 2022; Svendsen et al., 2017); with multimorbidities and often competing priorities, consistency in attending appointments can vary. A study on factors associated with recruitment and retention in smoking cessation trials found several factors which are associated with improved recruitment and retention in these studies, although very few of the studies included in the systematic review featured PWUD/A, so these can only be considered in the broader sense (Bricca et al., 2022).

1.7.2   Reporting guidelines

Reporting guidelines are also designed to be as broad in scope as is feasible, and do not usually take into account the additional challenges or needs of subpopulations. One example of this is the CONSORT-SPI-SMOKE, which is an adapted version of the more widely used CONSORT (Consolidated Standards of Reporting Trials) set of reporting guidelines (Moher et al., 2010). The CONSORT guidelines offer a checklist which can be used as the basis for the construction and presentation of RCTs. The CONSORT-SPI extension (Grant et al., 2018) was designed to offer guidance on how to report social and psychological interventions. A further update has since been published (Swithenbank et al., 2024) which provides an even more specialised set of guidance on the reporting of smoking cessation trials: the CONSORT-SPI-SMOKE. This set of reporting guidelines and the process by which they were developed forms the basis of Study 1 of this PhD.

The CONSORT-SPI-SMOKE is already a specific set of guidelines for a subset of social and psychological interventions, and one criticism of these guidelines is the questionable need for further specified guidelines. Many smoking intervention studies treating PWUD/A would struggle to meet the recommendations set out in these guidelines, as they are designed for trialists and to enable more comprehensive and standardised reporting of trials, so as to enable their recreation and their use in systematic reviews.

One of the issues discussed in the reporting guidelines paper (Swithenbank et al., 2024) which provides the basis for Chapter 4 is that systematic reviews and other evidence reviews rely on reported information; without the proper reporting of trials then the data cannot be included in evidence reviews. For this reason, systematic reviews cannot be used to provide a thorough overview of the available evidence on a subject. With the CONSORT-SPI-SMOKE, despite the broad range of expertise of the participants in the Delphi process, a notable absence was the involvement of PWLE of smoking. This may have provided an additional dimension and enhanced the acceptability of the guidelines to potential trial participants, even in the general population.

1.7.3   Systematic reviews

Systematic reviews, while regarded as the pinnacle of the evidence hierarchy, are not always the most appropriate approach for evaluating evidence in subpopulations. Many trials including PWUD/A are not included in systematic reviews, in part due to the fact that randomised control trials are often not the most appropriate trial methodology for this population.

The ICSmoke project (de Bruin et al., 2016) was a methodological systematic review project ICSmoke that is used in this PhD as a source of data and is described in more detail in Chapter 3. The review searches were conducted using the Cochrane Tobacco Addiction Group's database, which is part of the Cochrane organisation, an independent organisation dedicated to producing and disseminating healthcare information (Cochrane Library, 2024). Cochrane reviews are systematic reviews which aim to include all the empirical evidence that meets pre-specified criteria to answer a specific research question. They use 'explicit, systematic methods that are selected with a view aimed at minimizing bias, to produce more reliable findings to inform decision-making' (Cochrane Library, 2024), and are updated as new evidence becomes available. As such, they are widely regarded as being the pinnacle of the evidence hierarchy (Wallace et al., 2022).

The ICSmoke review only included RCTs in the systematic review, as these are considered to be the highest standard of evidence (Murad, Asi and Alsawas, 2016). This is valuable and high quality data but does exclude a lot of studies which do not meet these exacting requirements. This was done deliberately as the focus of the review was to gather a detailed and high quality evidence base and to include comprehensively described studies, which by design did not include many studies on PWUD/A.

The aim of the ICSmoke project was to explore limitations in reporting quality and differences between intervention and comparator groups, so it was appropriate for this study to utilise RCT data as it is generally high quality and comprehensive. However, this purposes of this study are quite different,

and it is not necessarily the best source of data. RCTs are less commonly done in 'hard to reach' populations due to challenges with recruitment and retention; see Bricca et al. (2022). This means that the evidence base is built on studies which exclude many populations. This is an issue as it increases health inequalities; some populations require additional support or tailored cessation programmes which are not being identified by these reviews and evidence bases.

1.8 Overview of the thesis

This thesis uses a mixed methods approach, underpinned by a recoverist paradigm to explore behavioural interventions for smoking cessation delivered in substance use treatment services in the UK. It comprises three studies (Study 1, Study 2, and Study 3), each of which uses a different approach to understand the current evidence base in this area, and how it can be used to inform future behavioural smoking cessation interventions. The next section (Chapter 7) applies a Behavioural Change Synthesis (BCS) to the combined findings from Studies 1, 2 and 3; Chapter 8 integrates all the findings in a discission.

This thesis will be presented in the following format: Chapter 1 will present the concept of the thesis, explaining the background to this approach and the researcher's positionality within the research. It will provide an understanding of the context for the research, giving an overview of the UK treatment system, tobacco use in this population and smoking cessation approaches. This chapter will also outline the contribution to knowledge that this research generates and will end with a summary and conclusion.

Chapter 2 presents a review of relevant literature, from a global perspective. It will present evidence of different smoking cessation approaches, followed by a discussion on the barriers and facilitators on providing smoking cessation intervention in substance use treatment. It will introduce some key factors which have been identified in this population, including motivation to quit, the importance of staff and organisational perspectives, and debates around the timing of cessation attempts in relation to other substances. It also offers a discussion on social norms and social identity, as well as a discussion on the issues with evidence for this population.

Chapter 3 provides a thorough outline of the methodological approach used in this thesis. As well as the pragmatic paradigm and mixed methods design, it details the multiple methods used in each study and how these come together in the later chapter to provide a synthesis of the data collected. Secondary data analysis is explored, using both qualitative and quantitative data from different sources.

The following three chapters present each of three studies in turn, providing a detailed account of the methods used and presenting the findings, before offering a discussion of these and relation to the wider literature as discussed in Chapter 2.

Chapter 4 focuses on Study 1: Reporting guidelines. Using a set of guidelines for the reporting of behavioural interventions for smoking cessation (CONSORT-SPI-SMOKE), this study examines the process for developing such guidelines, using a qualitative secondary analysis of transcripts from the modified Delphi and following consensus meeting at which a set of guidelines were produced. The CONSORT-SPI-SMOKE is described in Chapter 4, along with a critique of the methodology used in guideline development and the relevance of these to a substance use treatment service setting. Issues in using such guidelines in this context are identified and explored with recommendations for intervention design and reporting in this specific client group.

Chapter 5 focuses on Study 2: Quantitative secondary analysis. Using data from a large, methodological systematic review project (ICSmoke), key aspects of behavioural interventions for smoking cessation are explored. Comparisons are made between those elements which are generally used in a substance using population and those in a general population. These are discussed in terms of effectiveness and suitability, and recommendations of intervention elements and behavioural change techniques that should be included in future smoking cessation interventions for delivery in substance use treatment services are proposed.

Chapter 6 focuses on Study 3: Qualitative stakeholder perspectives. Semi structured interviews with both staff and clients of substance use treatment services were conducted and analysed using a reflexive thematic analysis approach. These are supplemented with data from a secondary qualitative analysis of additional interviews with clients from residential substance use treatment services which was completed as part of an MSc in Public Health and was the foundation of this research. Key themes are identified and discussed, as well as behavioural change techniques and other elements of interventions which should be included in any future interventions in this setting.

Having presented three 'traditional' chapters which generate new research findings, the following chapter synthesises the findings of Studies 1, 2 and 3 using a behavioural change approach. The first section provides an overview of the literature and the processes used in this Behavioural Change Synthesis (BCS), using the process outlined by Michie et al. (2014) in the key reference document, *The Behaviour Change Wheel: A guide to designing interventions*. This builds on the COM-B model and behaviour change theory to systematically develop the basis of an intervention.

The second section of Chapter 7 synthesises the findings of each of the three studies to produce recommendations, including a set of BCTs and a set of intervention components recommended for inclusion in future interventions. These are synthesised using the processes explained the section 1. All of the identified BCTs and intervention components are assessed using a relevant set of criteria, useful in considering interventions, known as the APEASE criteria, with APEASE standing for Affordability, Practicability, Effectiveness and cost-effectiveness, Acceptability, Side-effects and safety, Equity (PHE, 2020) This is done with an emphasis on the acceptability of each component to clients and staff of substance use treatment services, reflecting the importance of acceptability identified through the literature review, and as a consistent theme throughout the qualitative interviews.

Chapter 8 offers a discussion of the findings of all studies, as well as the behavioural change synthesis and how they relate to the context of substance use treatment services and the wider concepts discussed in this thesis. The aims and objectives are reviewed and strengths and limitations of this research are discussed. Finally, Chapter 9 presents a series of recommendations for the design and implementation of a behavioural change intervention and approach for delivery in substance use treatment services. Each recommendation is discussed in the context of existing literature and current practice, and examples of how these could be implemented are suggested.

1.8.1   Aims and objectives

This research explores smoking cessation in substance use treatment services, by examining different perspectives on this subject, as well as examining existing evidence on behavioural interventions for smoking cessation, in order to develop a set of recommendations for behavioural intervention for delivery in services.

The overall aims of this thesis are to:

1. Explore evidence on smoking cessation in people who use drugs or alcohol (Study 1, Study 2)
2. Assess the applicability of existing evidence in the context of substance use treatment, using a recoverist lens (Study 3, BCS)
3. Determine which factors need to be considered when developing smoking cessation support for people in substance use treatment from multiple perspectives (Study 3)
4. Explore the concept of acceptability in relation to smoking cessation provision in substance use treatment (Study 3, BCS)

Figure 2   **Overall aims of the thesis and which studies address them.**

- Study 1
- Study 2

Aim 1

- Study 3
- BCS

Aim 2

- Study 3

Aim 3

- Study 3
- BCS

Aim 4
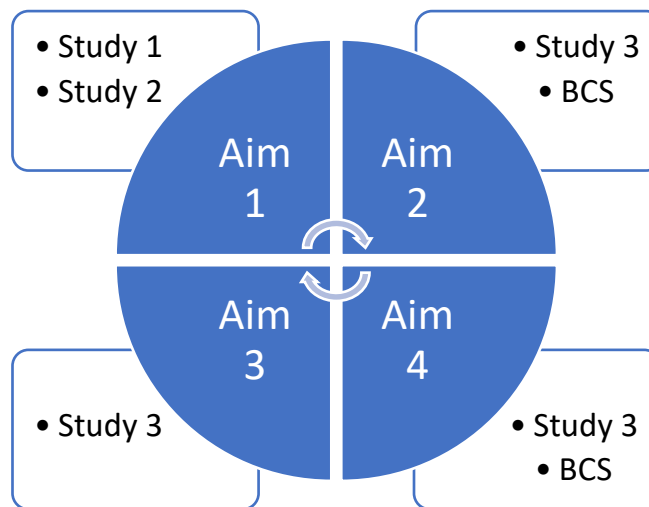
The above figure illustrates how each of the main aims of this thesis are addressed by the different studies. The induvial aims of each of the studies is presented below. In the conclusion of each Study and Synthesis (Chapters 4, 5,6 and 7), these aims are reviewed and a summary of how the study has addressed each is given. The Discussion chapter (Chapter 8) provides a more comprehensive exploration of how this thesis has addressed the overall aims and answered the research questions.

Table 1   Aim and objectives of Study 1: Reporting guidelines

Aim	Critically analyse evidence from an expert consensus meeting, using the development of the CONSORT-SPI-SMOKE guidelines as an example.
Objectives	To explore the different perspectives of multiple stakeholder on smoking cessation in this context.
	To identify issues with the existing evidence on smoking cessation and how it relates to this setting.
	To identify effective and acceptable behavioural techniques for inclusion in a future intervention in this population.
	To identify effective and acceptable aspects that should be included in a future intervention.

Table 2   Aim and objectives of Study 2: Quantitative analysis of intervention components

Aim	Critically analyse evidence from a dataset that summarises the key behavioural and outcome data from a comprehensive review of randomised control trials
Objectives	Consider the characteristics which are more or less likely to be present within evidence on smoking cessation in substance use.
	Explore the implications of this, and how this relates to acceptability.
	Examine the characteristics of studies which meet agreed quality criteria for systematic reviews.
	Explore studies in terms of the behaviour change taxonomy.

Table 3   Aim and objectives of Study 3: Qualitative multi-stakeholder analysis

Aim	To examine the perspectives of staff and people accessing substance use treatment services about smoking cessation in substance use treatment services.
Objectives	To explore what staff and people accessing substance use treatment services think is acceptable in terms of smoking cessation.
	To determine which factors need to be considered when developing smoking cessation support for people in substance use treatment.
	To identify barriers and facilitators to the implementation of and engagement with smoking cessation in substance use treatment services.

Table 4   Aims and objectives of Chapter 7: The Behavioural Change Synthesis (BCS)

Aim	To synthesise findings relating to BCTs from earlier studies.
	To synthesise findings relating to intervention components and characteristics from earlier studies.
Objectives	To put these findings into the context of substance use treatment services.
	To evaluate these BCTs, intervention components and characteristics using APEASE criteria.
	To make recommendations which meet APEASE criteria and should be included in smoking cessation interventions in substance use treatment services.

1.8.2   Contribution to knowledge

This study uses a novel approach to explore smoking cessation interventions in substance use treatment services using a variety of evidence types and analyses to inform a more comprehensive understanding of the complex needs and challenges of this population. It is also the first to use a recoverist approach to bring a person-centred, cultural lens to the issue of smoking cessation in substance use treatment services. The use of this lens to frame the research, and the findings, offers an alternative way of exploring the issue, and bridges the gap between existing evidence on what is effective for smoking cessation and what is acceptable to a range of stakeholders, but primarily to those accessing substance use treatment. The recoverist approach challenges the traditional hierarchies in both research and treatment in a way which has not been done previously and has implications for both policy and practice. By offering a way to address the needs of this population which takes into account the specific context and barriers that exist currently, interventions can be developed which can have a significant impact on both morbidity and mortality, as well as addressing this from a more holistic approach. There is a dearth of evidence specific to the context of smoking cessation in substance use treatment services, especially in the UK. What evidence there is focuses on broader smoking cessation trials, often in 'healthy' populations, which by their nature exclude these people from taking part and are not tailored to the needs of people accessing substance use treatment services and the associated challenges of smoking cessation for people who also use drugs or alcohol (PWUD/A). Other evidence types, including randomised control trials, systematic reviews and

reporting guidelines also follow this approach, and do not include or contextualise their research to the needs of PWUD/A.

In contrast, this thesis uses a variety of evidence types and assesses their relevance to the context of substance use treatment services, acknowledging their limitations and synthesising their findings to produce a set of tailored and contextually appropriate recommendations for smoking cessation approaches in substance use treatment services. In addition, this thesis is the first to bring a recoverist lens to smoking cessation interventions, taking a person centred approach which places key concepts including autonomy, agency and choice at the heart of any substance use treatment service, highlighting the limitations of the existing evidence base for this population.

Three studies comprise this thesis; one uses secondary data from an existing dataset on the behavioural change techniques used in smoking cessation interventions and compares these between groups (or study arms) of PWUD/A and those who do not. This is a novel approach as it utilises a large dataset with detailed coding of BCTs across all study arms for 172 randomised control trials and uses it to explore the differences in the content of interventions received by PWUD/A when compared with the general population.

The second study also utilises secondary data, this time from an expert consensus meeting for reporting guidelines for smoking cessation studies. The full day meeting transcripts have been analysed to explore the relevance of such guidelines for the context of substance use treatment services and which intervention components are recommended for inclusion in interventions for this population.

The third study uses a more traditional, qualitative approach, with both a reflexive thematic analysis of staff and service user interviews and a deductive analysis of the same dataset to identify intervention components for inclusion in an intervention, as well as the perceptions of both staff and people accessing services about what underlying principles should be at the core of any treatment service, and how to ensure acceptability of the approach to multiple stakeholders.

Using a behavioural approach, the recommendations from each of three studies are appraised to assess the acceptability to all stakeholders, but with a specific focus on acceptability to those who would be receiving the intervention. In this way, PWUD/A are central to all aspects of intervention design in a way that has not been developed for smoking cessation before. These recommendations provide a basis to inform the development and implementation of any smoking cessation intervention

for PWUD/A, using a recover-informed approach which priorities the needs and perspectives of this population.

This approach can be used to inform interventions which are underpinned by a relevant and appropriate evidence base, thereby enhancing acceptability, which can improve engagement and effectiveness of interventions. Is can also contribute to a more holistic and recovery-informed approach to substance use treatment, which puts the voices of PWUD/A at its centre, providing effective and acceptable person-centred healthcare. This can also contribute to challenging stigma. Both intrinsic and extrinsic, by promoting a recoverist approach which reassesses research culture and hierarchies by acknowledging and celebrating the role of PUWD/A within research and health care design and implementation.

This research has highlighted a bigger issue in terms of the lack of appropriate and applicable evidence on smoking cessation for PWUD/A, and that this can have negative implications for effective policy and practice. Enhancing the evidence base with more relevant, tailored research would help to promote a more effective and ethical approach to treating PWUD/A and enhancing quality of life.

1.9 Summary and conclusions

This chapter has presented the background and key concepts which underpin this thesis. The context of substance use treatment services has been explained and the issue of smoking in this population discussed. This chapter also explains the rationale for this research, building on earlier work and the lived experience of the researcher. It also explored the different types of evidence which will be drawn upon, and how these relate to the context of substance use treatment services. It closes with an explanation of the contribution to knowledge that this research makes. The next chapter presents a review of available literature on smoking cessation in relation to substance use treatment services.

Chapter 2 Literature review

2.1 Introduction

This review will consider existing literature on smoking cessation in substance use treatment services. It will include background information on tobacco use in this context, and the comparison with other populations with similarly high smoking prevalence. A range of interventions will be discussed, followed by an examination of the barriers and facilitators to integrating smoking cessation provision in substance use treatment services, which include social norms, staff perspectives and organisational factors. A discussion of some key issues in this area will follow, including the issues of timing of quit attempts, concerns about simultaneously quitting multiple substances, challenges to motivation and engagement, and tobacco as a facet of an individual's identity. This section will conclude with an exploration of the issues surrounding evidence in this population, and a summary of the chapter.

2.2.1 Methods

For this literature review, CINAHL, Medline and APA PsycINFO were searched for all papers including the terms: smok* OR tobacco OR nicotine AND drug OR alcohol OR substance AND treatment OR service OR intervention OR manag*. Related terms were also included. Searches were initially conducted during the first year of this PhD (2019) and were re-run in late 2023 to check for recently published studies and to check for any studies that were not included in the original searches. A search was also conducted as part of the MSc study which formed the basis of this work (Swithenbank, Harrison and Porcellato, 2022). Key papers were identified, such as systematic reviews on the subject or any that were deemed particularly relevant to the research questions of this PhD, and references were hand searched to identify any of relevance to the research question. A grey literature search was also conducted to identify additional papers or studies. Papers including published journal articles, editorials, commentaries, theses and conference abstracts were included, if they were accessible in English.

Studies from any global region were included due to the limited number of studies relevant to this population, although there are unique factors which influence the provision of smoking cessation services in UK substance use treatment services. For example, cost is presented as a significant barrier to many international populations accessing services or pharmacotherapy, whereas UK health services are free at point of use for most people. There may be costs associated with prescription drugs (or buying e-cigarettes), but these are waived for people on many government benefits or capped at around £10 per prescription item, which is very different from other healthcare systems such as the USA. Despite these issues, much of the literature explores aspects which are relevant to the UK

population, and as such literature from a global context is included in this review. In addition, related articles which focused on smoking cessation in similar populations such as people experiencing homelessness or those with mental health conditions were included in this review. Although they are different and distinct populations, there are similarities in terms of high smoking prevalence and barriers to accessing smoking cessation support, which may be relevant, especially to those who may experience multiple conditions or have complex needs.

Once the searches were completed, all retrieved abstracts were assessed for suitability using the inclusion and exclusion criteria, to identify those studies relevant to this review. Following this, full texts were screened and any not meeting inclusion criteria or deemed not relevant were removed. From the final list of studies, data was extracted including publication date and location, study design, population and key findings. From this, a summary table of the selected literature was created which highlighted the main issues and themes arising from the literature. This was used to group the studies into relevant sections, which are used below to structure the review.

2.1.2   Background

Smoking rates are very high in people who use drugs or alcohol (PWUD/A). Estimates vary, Heffner and Anthenelli (2009) suggested the prevalence is 3-4 times that of the general population, whereas Guydish et al., (2011) found median smoking rates in PWUD/A of 76%. Ward et al., (2012) found 63% of their study population to be nicotine dependent, and this was more likely to be the case in older participants, those with poorer overall (self-rated) health, earlier age of initiation of both smoking and substance use, single substance use and recent self-reported depression. This co-morbidity of mood disorders highlights the need to address these in smoking cessation interventions. Walitzer et al., (2015) also found that tobacco smoking was associated with a range of clinical complexities, including criminal justice involvement and polysubstance use. Gershon Grand et al., (2007) found that smoking cessation rates in adults with substance use mental health issues varied by diagnosis. Those with a history of alcohol use issues, schizophrenia or schizoaffective disorder had poorer quit rates, indicating that those with these conditions may require specialised treatment. Sonne et al., (2010) also found a significant associated between measures of depression and difficulty in quitting smoking.

In addition, people who use drugs or alcohol (PWUD/A) are more likely to start smoking at an earlier age, become more dependent on nicotine (Apollonio, Philipps and Bero, 2012) and are susceptible to certain types of cancer secondary to the combined use of alcohol and tobacco (for example, cancers of the head and neck) (Heffner and Anthenelli, 2009).

Eastwood et al., (2021) explored reciprocal influences of tobacco use on illicit opioid and alcohol use during the first six months on substance use treatment in UK adults, using data from the NDTMS database. Findings from this study suggest that higher tobacco use at admission is associated with higher alcohol or opioid consumption at six month follow up. This highlights the importance of tobacco in treating substance use as part of routine and integrated services. Interestingly, Rohsenow et al., (2017) found that adults with substance use disorders who had been in substance use treatment services in their lifetime were less likely to quit smoking than those who had never received treatment. This was true across all types of substance use and warrants further exploration to address this issue and the missed opportunities for smoking cessation within substance use treatment services.

Kalman et al., (2010) also found a synergistic relationship between tobacco and heavy alcohol use, suggesting that smoking slows down the cognitive recovery process which follows stopping alcohol use. Durazzo and Meyerhoff (2020) confirmed that smoking status influenced the rate and extend of neurocognitive recovery between 1 and 8 months of abstinence in a cohort of alcohol dependent participants. Despite concerns about the high prevalence of smoking in this population, and the evidence that PWUD/A are more likely to die from tobacco related causes than alcohol related ones (Hurt et al., 1995), smoking cessation provision remains inconsistent and underutilised.

2.1.3 Other populations

Although PWUD/A are not a homogenous group, some subsections of the population face additional challenges and have complex needs. Socio Economic Status (SES) is also associated with increased smoking prevalence, and some of the potential reasons for this apply across different sub-populations within this group. For example, Paul et al., (2010) proposed that social norms may be different for different populations, so social pressures not to smoke, which play a significant role in the reduction of smoking prevalence in the wider population, may not have the same effect on all sub-groups. Tobacco policy has 'de-normalised' the use of tobacco, but this has had the adverse effect for some groups of making smoking more appealing, as it increases the sense of belonging to a sub-culture who see themselves as autonomous and risk takers.

People who experience homelessness also have high rates of substance use, and tobacco use. One estimate suggests that around 80% of homeless people in the USA smoke (Pratt et al., 2022). Some of these challenges should be considered when designing a smoking cessation intervention for implantation in substance use treatment services. For example, Pratt et al. found that the unique challenges associated with this include: pro-smoking norms in this population, and in environments such as homeless shelters; and a discord between personal goals of reduction and study or service

goals of abstinence. This issue highlights the problem of using traditional methods for interventions or studies in atypical populations such as these. Whereas trials may demand total abstinence to be considered a success, this may look very different for the individual themselves. This debate around harm reduction as a valid method for addressing the harms associated with smoking is ongoing, as some researchers believe that reduction in cigarettes smoked per day, for example, is not an outcome that should be promoted, due to the harms of smoking at any level. However, it can be argued reduction in smoking levels is still a positive outcome and may lead to abstinence at a later date (Pratt et al., 2022). Garner and Ratschen (2013) also identified additional risk behaviours and social interplays in homeless smokers. The social role of tobacco related to the sharing of tobacco, and the social hierarchies that this represents.

The behaviour of sharing cigarettes and the collecting of discarded cigarette butts to make into rollies carry increased health risks, as do the purchase of 'under the counter' tobacco products, which are generally significantly cheaper than other tobacco products (Cox, 2020).

2.2 Behaviour change

Intervention development strategies are not always underpinned by a theory or framework, but these can be useful in developing effective interventions which target the desired behaviours. The COM-B system can be used as a starting point for systematic and theory-driven approach to intervention design. Chapter 7 describes the process of intervention development using the behavioural change approach based on the Behaviour Change Wheel (Michie, van Stralen and West, 2011) and described the models and the processes in more detail.

There are many models of addiction which can be used to understand the drivers and processes of addiction or problematic substance use. The behavioural model proposes that addiction involves behaviour, and as such behaviour lies at the heart of any model (West 2013). What causes these behaviours can be understood through the interplay between the individual and the environment. Individual behaviours are influenced by a combination of capability and motivation, and external factors may influence the opportunity to perform these behaviours. These three factors make up the COM-B model, which states that capability, motivation and opportunity all interact to influence behaviour, and must be present for any behaviour to occur (West and Michie, 2020). Capability refers to the 'physical or psychological capacity to engage in the behaviour in question'. This may also include the capability to resist engaging in behaviours (such as resisting urges or desires to smoke). Opportunity refers to the physical or social environmental factors which allow a behaviour to occur, which may include the availability of cigarettes, or social norms which allow smoking in certain places.

Motivation refers to the mental process which 'energise or direct behaviours'. These may be automatic or reflective. Behaviour occurs (or does not) as a result of these influences. A behavioural approach to understanding addiction takes into account individual, social and environmental factors, all of which influence both substance use and smoking behaviours. This can provide a comprehensive and holistic approach to changing behaviours that moved beyond a simplistic, medically driven model.

2.3 Interventions for smoking cessation

There are a range of smoking cessations available, including pharmacological and behavioural support. A recent Cochrane review (Hartmann-Boyce et al., 2021) examined the evidence for behavioural interventions for smoking cessation in the general population and found some types of behavioural support to be effective. Evidence on which types was not always clear, although the use of incentives was effective as was counselling, and the use of text messages was more beneficial than no support. Also compared with no support, tailored support and showing people how to stop were beneficial in reducing smoking. Increasing the intensity of the available support (including the frequency of interactions and the length of each interaction) had a small effect on increasing cessation.

Another systematic review project, ICSMOKE (de Bruin et al., 2016), identified RCTs of adult smokers which utilised behavioural support for smoking cessation, with or without the use of pharmacotherapy. The inclusion criteria for this review was the use of biochemical verification of smoking status at a minimum of six months. Of the 172 studies identified for this review, 11 targeted adults who used drugs or alcohol. The dataset from this systematic review is utilised in Studies 1 and 2 to further explore the content of behavioural interventions for smoking cessation.

Despite sometimes poor outcomes for smoking abstinence, many of these trials reported successes when they measured other outcomes, such as the number of cigarettes smoked per day (Mueller, Petitjean and Wiesbeck 2012; Reid et al, 2011; Rohsenow et al., 2014; Stein et al., 2016) or motivation or self-efficacy (Alessi and Petry 2014; Rohsenow et al., 2014). Some trials who did not see successful long term outcomes (Carmody et al., 2012; Mueller, Petitjean and Wiesbeck 2012), did see an increase in abstinence during the earlier months of the trial, indicating that the interventions were successful in increasing motivation and in changing behaviours, but that more work is needed to maintain those changes. These interventions and mechanisms for change can also be useful from a harm reduction perspective.

Outcomes related to the use of non-nicotine substances were also often improved over the course of the trial, with several reporting significant decreases in the use of drugs of alcohol (Alessi and Petry

2014; Bobo et al., 1998) and several reporting no or limited change, also refuting the misconception that treating smoking in conjunction with other substances is detrimental to both outcomes (Mueller, Petitjean and Wiesbeck 2012; Reid et al., 2008, Rohsenow et al., 2014, Winhusen et al., 2014).

A later systematic review (Thurgood, 2016) evaluated the effectiveness of smoking interventions for adults with substance use disorders. This review included adults who were currently or had recently been receiving either inpatient or outpatient treatment for substance use disorders. The trials reviewed were all randomised control trials using biochemical verification at 6 or 12 month follow ups, and included pharmacological and non-pharmacological intervention, in any setting using any mode of delivery. The results of this systematic review found that NRT, behavioural support or combination approaches appear to increase smoking abstinence.

Healy et al. (2019) examined the cost-effectiveness of smoking cessation interventions in substance use treatment services, and found them to be cost-effective overall, especially the use of group-based behavioural support in conjunction with pharmacological support.

A study conducted in Brazil which included participants with mental health and substance use issues compared treatment success of interventions incorporating group CBT or pharmacotherapy. Variables that were associated with treatment success included: years smoking; Heaviness of Smoking Index (HSI); and use of nicotine patches or bupropion. Cessation rates were comparable between participants with and without mental health or substance use issues (Castadelli-Maia et al., 2018). Santa Ana et al. (2017) also identified the benefits of group-based interventions in their study in group motivational interviewing. They found that overall substance use declined in both the insertion and control groups, and engagement in the group arm of the study improved.

Contingency management is one intervention which has been implemented in substance use treatment services, with varying degrees of success. Martin et al., (2015) supplemented NRT with vouchers which were either contingent on smoking abstinence or for submitting a breath sample, regardless of smoking status, where all participants also received counselling. Although the results were favourable during the intervention period, with 20% demonstrating total abstinence, longer term results showed lesser effects, although follow ups at 1, 3, 6, and 12 months did show a significant overall reduction in CPD.

Cooney et al. (2017) also found promising initial results from integrating contingency management into an evidence-based intervention which included both pharmacotherapy and behavioural counselling. Contingency management doubled quit rates by treatment end, although linger term

effects were not clear. A randomised control trial by Secades-Vila, Aonso-Diego and Gonzalez-Roz (2022) also explored the impact of contingency management in this population, finding that it was effective in facilitating early abstinence in smokers with substance use issues, but that these effects subsided after treatment end. Drummond et al., (2014) also found that contingency management was associated with short term abstinence and reduced nicotine dependence.

Alessi and Petry (2014) found that contingency management in residential substance use treatment services increased abstinence rates, reduced CPD and improved abstinence self-efficacy. A study by Baca and Yahne (2009) found that adding contingency management to a group based smoking cessation intervention in substance use treatment services but found no significant impact. They did, however, find that engagement rates were higher in those of older age, who were given a prescription for smoking cessation medication, and those with longer duration in substance use treatment. They study authors encourage the use of group-based interventions in conjunction with pharmacotherapy to maximise resources.

A systematic review by Guo et al., (2021) examined the effect of pharmacotherapies in people with alcohol problems, and found that Varenicline may promote smoking cessation, although Naltrexone, Topiramate and Bupropion had no clear effect. However, the small number of studies and low certainty of evidence mean that these findings should be treated with caution.

Jaehne et al., (2012) sought to assess the quantity of therapy required to instigate behavioural changes, but their study found little evidence that more intensive therapy improved outcomes in non-responders, although a greater difference between the intensity of interventions offered at each stage may improve outcomes. Banducci, Lejuez and MacPherson (2013) found that adding brief advice to smoking cessation interventions improved quit rates and reduced relapse rates, and were especially beneficial at four weeks post-quit, a time that clients are at their most vulnerable to relapse (Prochaska, Delucchi and Hall, 2004), despite co-occurring depressive symptoms in the sample population.

Digital interventions are proving successful in some populations, but these are still being explored in PWUD/A. There have been barriers to any form of digital interventions based on concerns about accessibility, costs, poor digital literacy and lack of engagement. However, there are promising studies looking text messaging interventions for people accessing substance use treatment services (Shankar et al., 2022). Although a fairly small sample size, this study demonstrated that text messaging was feasible in this population, reporting that their participants (adults in the USA with co-morbid opioid and tobacco use issues) owned cell phones, had unlimited message plans and frequently sent and

received text messages. Even in those who reported changing phones frequently, they retained their phone number. The study also found that messages which focused on the health benefits of quitting were the most favoured, although most said they would be interested in receiving such text messages, and almost every participant said the messages would improve motivation to quit.

2.3.1   E-cigarettes

Lum et al. (2022) explored the perspectives of Vaporised Nicotine Products (VNPs) of people in substance use treatment services and found that their unique ability to satisfy both nicotine cravings and behavioural habits made VNPs a promising and widely acceptable method of smoking cessation. They did find multiple barriers however, including accessibility, maintenance, costs and the challenges of reducing multiple substances at the same time, which are all areas which need further research. This study only included 13 participants from a single site, so these findings should be further explored.

Another study, by Masson et al. (2021) explored the prevalence and correlates of the use of e-cigarettes for smoking cessation in substance use treatment services in the USA. Almost half of the sample of 332 clients had ever used e-cigarettes for smoking cessation. These clients were likely to be younger, had more than a high school education, had sought treatment for both a substance use and a mental health disorder, and perceived e-cigarettes to be equally or less harmful than tobacco. Although most studies on VNPs or e-cigarettes do not limit the levels of use age, Skelton et al. (2022) examined the use of VNPs with gradual or abrupt cessation. Participants found that using VNPs was satisfying and helpful in terms of smoking cessation, although there were no differences in effectiveness between abrupt or gradual quits. Larger scale trials are needed to further explore this issue.

2.4 Barriers to smoking cessation

There are a number of Individual, cultural and organisational barriers to implementing smoking cessation in substance use treatment services. As discussed earlier, the processes and treatment pathways associated with recovery can be confusing and involve multiple services. Even within services, the re-tendering process happens as frequently as every three years and services often change treatment provider. This has been highlighted as a challenge (DHSC, 2021b) and can introduce a period of instability during the transitional periods, with the recent independent review of drugs recommending that these process be extended so that tender periods are at least five years long.

As well as these treatment provider transitions, clients of substance use treatment services do not receive support from a single source (Apollonio, Philipps and Bero, 2012). These services might include

inpatient detox or rehab facilities, community based substance use treatment services, mutual aid or other peer led support, and other health providers such as General Practitioners (GPs). For example, pharmacotherapy can be prescribed by a GP, not usually by the substance use treatment service, which may pose and additional challenge. Being treated my multiple services simultaneously can be problematic, with the client having to repeat their stories or concerns, lack of communication between services and prescription interactions. This is particularly prominent when dealing with multimorbidity or other social issues, such as homelessness. The chaotic setting and transitions between shelters or services provide additional barriers to stability and smoking cessation. For this reason, it may be important to offer smoking cessation at any available opportunity, rather than waiting for a period of stability (Pratt et al., 2022).

McClure et al. (2014) also identified some significant barriers into the implementation and integration of smoking cessation into substance use treatment services: lack of staff knowledge and confidence in appropriate techniques; limited financial resources; resistance from staff; beliefs that smoking cessation would hinder recovery from other substances, a perceived lack of interest from clients; and the smoking status of staff which makes some reluctant to address smoking cessation with their clients.

Fallin-Bennet et al. (2018) explored the role smoking played in the lives of women in residential substance use treatment services using a qualitative approach. They also found several key themes, relating to both smoking as a coping mechanism and smoking as a social facilitator. Foster et al. (2016) found that coping-oriented motives for using one substance may present difficulties in abstaining from another (such as tobacco). They also highlighted the interplay between social anxiety and depressive symptoms in smoking cessation for PWUD/A.

Martinez et al. (2023) also identified barriers to smoking cessation in PWUD/A, including: the social context of smoking; challenges of findings better support and better coping mechanisms; addressing underlying conditions; building inner and outer supportive environments; and sustaining support. Clinicians reported the lack of organisational support and misconceptions about tobacco as the main barriers to treating nicotine dependence. This study recommended that future interventions address these issues and offer tailored interventions which include the replacement of smoking with healthy coping strategies, incorporate a supportive, non-judgemental approach and the inclusion of NRT.

Attitudes of smokers in substance use treatment can present multiple barriers to smoking cessation. Hughes (2009) found that beliefs about an inability to stop smoking due to habit, addiction, stress and a lack of perceived willpower were all cited as reasons for continuing smoking, although most of the

participants in their sample endorsed the integration of smoking cessation treatment in substance use treatment services. Holt, Litt and Cooney (2012) also found that lower confidence to resist smoking preceded relapse to alcohol use in recent smokers, suggesting that concurrent treatment for alcohol and tobacco should focus on improving self-efficacy, positive mood and coping with urges to use either substance.

Tobacco is different from other drugs in that its use will not manifest in the immediate harms – physical, psychological, social, or legal that other drugs would. This makes it easier to continue to use, as the delayed costs can't compete with the perceived benefits of smoking (Grigsby, Forster and Sussman 2015).

2.5 Staff

Staff in substance use treatment services are in a unique position to influence the health beliefs and behaviours of their clients. As Kelly et al. (2019) point out, many staff working in substance use treatment services are themselves in recovery, and as such can offer a lived experience perspective. In some cases, using their own experiences can reinforce negative patterns of behaviour. Many of these staff smoke and may be perceived as role models. Guydish et al. (2023) examined this relationship between staff smoking and client smoking. They found that staff tobacco use varied hugely, from 0% to 100% by service. Higher staff smoking rates were associated with higher rates of client tobacco use, and fewer clients receiving smoking cessation support. High staff smoking was also associated with a belief that smoking should not be addressed in substance use treatment services, and less self-efficacy to address client smoking behaviours. Hunt et al. (2014) also found that staff who smoked were less likely to endorse smoking cessation interventions in their services.

Staff acceptance is a key factor and changing staff attitudes is a first major step towards eventually changing staff behaviour (Hurt et al., 1995). Related to this, Walsh, Duaso and McNeill (2018) also found that despite interest and enthusiasm in smoking cessation among clients, staff did little to promote or encourage this.

Le et al. (2021a) also suggested that lack of staff training and knowledge may be responsible for the poor provision of smoking cessation in substance use treatment services, finding that increasing knowledge through training increased change efficacy, valence and commitment. A second study by the same authors (Le et al., 2021b) also found that staff education in the 5As (asking about tobacco use, advising to quit, assessing willingness to quit, assisting with quitting, arranging follow up) resulted in significant increase in the delivery of the 5As. An earlier study by Daws, Egan and Allsop (2013)

reported the effectiveness of brief intervention training on smoking cessation for staff in substance use treatment services, which despite staff reporting increased confidence and willingness to offer smoking cessation advice, not result in increased motivation.

LoParco et al. (2022) also assessed how staff beliefs affected the provision of smoking cessation in substance use treatment services and the delivery of the 5As. substance use treatment services where staff had lower agreement that tobacco use should be addressed in substance use treatment services, and who reported lower self-efficacy, had greater improvements in the delivery of the 5As after an educational intervention. Services which reported more barriers to the delivery of smoking cessation at baseline also saw a greater reduction in these barriers. Unsurprisingly, the services which had the most room for improvement reported the most improvement in the provision of the 5As and smoking cessation interventions.

Hunt et al. (2014) conducted a survey of staff in leadership positions in drug treatment facilities in the USA, using the validated Tobacco Treatment Commitment Scale (TTCS). Analysis of their findings identified three key factors which influenced staff commitment to providing smoking cessation within treatment services: the perception that tobacco is less harmful than other drugs; it not being their role to provide smoking cessation; and the belief that providing such treatment would harm clients. These core constructs provide insights into the reasons behind commitment, or lack thereof, to proving smoking cessation in this setting. Staff who believed that smoking cessation would assist with recovery were more likely to promote it within their services. This illustrates the importance of staff perspectives in the delivery of smoking cessation interventions. Staff attitudes and beliefs are key determinants of whether or not organisations integrate changes, including the adoption of smoking cessation practices (Knudsen et al., 2010).

Teater and Hammond (2010) also surveyed 963 substance use treatment services staff about their beliefs about smoking cessation and found that a high percentage still believed the myths that clients were reluctant to quit, that smoking cessation would threaten other substance use outcomes, and while they were supportive of offering smoking cessation in substance use treatment services, they did not support the introduction of smoke free policy.

A later study by Britton et al. (2023) explored these myths further and found similar findings as earlier studies. Staff and service providers still believed that clients needed to smoke as a coping mechanism; were not interested in quitting smoking; and that quitting smoking would jeopardise other substance use outcomes. Despite evidence to the contrary, these beliefs are perpetuated in substance use treatment services and act as significant barriers to offering smoking cessation. Increased training and

education to build capacity and challenge the myths are needed to improve the provision and integration of smoking cessation in substance use treatment services.

2.6 Facilitators to smoking cessation

Despite the many barriers discussed above, several studies have identified key facilitators to improving smoking cessation in substance use treatment services. Martinez et al. (2015) investigated past year quit attempts in smokers in substance use treatment services in the USA and found several facilitators to making a quit attempt. These include: addressing patient attitudes to quitting; having clinicians address smoking during the course of treatment; and offering interventions to increase motivation and readiness to quit. Staff played a crucial role in supporting and promoting quit attempts and influencing attitudes towards quitting smoking. For example, Martinez et al. (2023) found that whilst half of the clinicians they surveyed believed they had the skills to help clients quit smoking, only a third of clients believed the clinicians had these skills. Staff support and encouragement for the use of NRT was also associated with increased quit attempts.

Predictors of smoking cessation have also been identified by Reid et al. (2011), and include: younger age, employment status, lower CPD at baseline, lowered severity of the primary substance problem at baseline, and higher methadone doses (among those clients receiving methadone treatment). This might suggest that reducing severity of substance use problem, as well as CPD, may increase smoking cessation rates, and that interventions should be tailored and targeted to address these differences.

2.7 Timing

A key concern around smoking cessation in substance use treatment services is that smoking cessation offered simultaneously with quitting other substances can jeopardise all outcomes. This remains uncertain (Apollonio, Philipps and Bero, 2012), although numerous studies have disputed this, reporting that substance use outcomes are either not impacted by smoking cessation interventions, or are improved (Thurgood et al., 2016; Britton et al., 2023). van Amsterdam and van den Brink (2022) found that being a non-smoker, or decreased tobacco consumption is associated with positive alcohol-related outcomes, including reduced alcohol consumption, later relapse and prolonged abstinence.

This is true whether the smoking cessation intervention is successful or not (Guillaumier et al., 2020). Reid et al. (2011) also found that smoking cessation compared with treatment as usual did not impact on retention in treatment, abstinence or cravings for substances, although engagement with smoking cessation treatment did improve smoking cessation outcomes, particularly on CPD. It is worth noting that this study focused on established clients of substance use treatment services.

Heffner and Anthenelli (2009) pointed out that treatment providers and mutual aid organisations or groups are likely to reinforce these beliefs about smoking cessation putting sobriety at risk, and that it is important to address the organisational issues that contribute to these beliefs, rather than assuming that individuals are using these fears as excuses not to address their smoking. This may explain the findings from the Kelly et al. (2020) study in which those involved in mutual aid organisations had less favourable attitudes to incorporating smoking cessation into substance use treatment services.

It is argued that smoking cessation might remove a coping mechanism (Grigsby, Forster and Sussman 2016), and as such this could be more appropriate to introduce at a later stage, once individuals have transitioned past 'the most difficult and sensitive phases of recovery and entered a more stable period' (Grigsby, Forster and Sussman 2015). This is certainly an avenue for exploration, although it is worth noting that substance use treatment is not by its nature a linear process and involves multiple transitions.

Kelly et al. (2020) sought to understand the perspectives of key stakeholders in this debate – those in recovery from substance use. He also pointed out that many staff in substance use treatment services are themselves in recovery, and so have important insights into the mechanisms of substance use treatment services and of recovery. When a sample of 1,973 adults in recovery were asked whether smoking cessation should be: excluded; available; or integrated into substance use treatment services, around half were either in favour of excluding smoking cessation or making it available, but not in offering or integrating it. This was particularly the case in those with alcohol and their primary substance of use, and those participating in mutual-aid organisations.

There is evidence to support the early integration of smoking cessation in substance use treatment services (Prochaska, Delucchi and Hall 2004; Guydish et al., 2011). Carmody et al. (2012) found that in early recovery from alcohol use, the expectations participants had about the impact of smoking and depressive symptoms were linked. Participants reported expectations that smoking would have less of an impact on substance use than substance use would have on smoking, and that smoking provides a coping mechanism to alleviate the urge to use other substances.

In support of this, Murphy et al. (2018) also found that expectations of the positive effects of smoking were also likely to reduce the chances of a successful quit attempt, as well as being associated with higher smoking levels post-treatment. For this reason, it is important to acknowledge and address the positive associations and expectations of smoking in order to improve smoking outcomes.

Studies by Grigsby, Forster and Sussman (2015) and Hughes (2009) also found that some participants favoured making a quit attempt at a later date, after the initial stressful period of entering recovery had passed. These beliefs that smoking cessation can be addressed at a later time can, however, contribute to increased smoking levels at the current period. For this reason, a hard reduction approach may be beneficial, preventing the mindset that smoking is not a problem to be addressed until further along in the treatment journey, which can give people a feeling that it is 'ok' to smoke at increased levels, as it will be addressed in the future.

Hayhurst et al. (2021) used NDTMS data to examine trends in smoking prevalence or the course of substance use treatment. They found reductions in abstinence of between 5 and 7% in those who completed treatment, but only in the final stages of treatment. However, a 5% increase was witnessed in those still in treatment.

Tsoh et al. (2011) explored longer term outcomes for smoking cessation and substance use, reporting that one year after substance use treatment services intake, 14.1% of those who smoked at intake had quit smoking, although 10.7% of the non-smokers reported starting smoking. Those who quit were also more likely to be abstinent from other substances, and nine year follow ups confirmed that stopping smoking during the first year of substance use treatment predicted better substance use outcomes. On the other hand, Ganavadiya et al. (2018) found that most of their participants reverted to previous smoking and drinking habits by the time of the first follow up, as reflected in reduced knowledge, attitude and practice (KAP) scores even after receiving an intervention. The Giorgi et al. (2017) study also supported the efficacy of integrated interventions for both alcohol and tobacco, finding that smoking cessation did not impede abstinence from alcohol, but actually supported long-term sobriety. They suggested that the longer term follow up from such interventions would add an additional dimension which would improve outcomes in this population.

In a PHE (UK) evidence review on drug treatment outcomes (PHE, 2017), participants overwhelmingly felt that 6 months was insufficient time to be able to demonstrate stable recovery and therefore the 'non-re-presentation window' in the successful completion definition for people returning to treatment should be longer than 6 months. Many participants felt that the length and speed of a recovery journey were vital factors; in addition, they said they would have welcomed much longer periods of support after treatment, with 2 and 5 years being mentioned. Many participants emphasised that recovery should be understood to consist of progress across a broad range of issues. They described the things that were important to them – not just addressing substance misuse, but also improving their housing situation, physical and mental health, their social situation and

relationships with their families, and their employment and training opportunities. One male participant noted: "You should measure use; stable accommodation; education; training and employment; if life feels good; health issues are dealt with – mental and physical; is there family contact, and money?" Many participants emphasised that improving their quality of life while remaining healthy and stable on a methadone script should be considered a successful outcome and acknowledged as such.

2.8 Social norms and setting

Organisational and environmental factors may reinforce rather than discourage smoking (Heffner and Anthenelli, 2009). Cigarette breaks and socialising over a cigarette are ingrained into the culture of many substance use treatment services, with many staff arguing that it contributes to the building of a therapeutic alliance.

A review by Knudsen (2017) identified numerous organisational barriers to the integration of smoking cessation in substance use treatment services, including limited staff training, inadequate resources and cultural norms which do not accept smoking cessation as part of the organisation's remit. Gifford et al. (2015) also identified organisation factors and cultural norms as barriers to smoking cessation provision, suggested that organisations should address the importance of leadership support in building a culture that encourages smoking cessation. They also suggest developing and enforcing policies which support smoking cessation and implementing systems to track and report tobacco related diagnoses and treatment to facilitate a systematic response. An earlier paper by Gifford et al. (2013) had highlighted the issues around the diagnosis and documentation of tobacco related issues, which may hinder the routine offering of treatment.

Matthews et al. (2022) conducted interviews with clients in substance use treatment services to better understand their views regarding smoking cessation and found that most reported that smoking cessation was an important goal, and they were open to receiving treatment. However, they also discussed the socially-reinforcing nature of smoking in this setting, and the additional barriers this presented. These are important issues that require changes to policy within the substance use treatment services and more broadly, in order to challenge accepted social norms and make smoking cessation more socially acceptable in this population. Matthews suggested that increased access to smoking cessation and client education in conjunction with policy adaptations might assist with this.

Despite numerous studies supporting the treatment setting as an ideal opportunity for introducing smoking cessation, many studies also report the missed opportunities and lack of consistency in

treatment provision (Walsh, Duaso and McNeill, 2018). Smoking cessation provisions in substance use treatment services are often minimal, inconsistent and not aligned across services. As Richter et al. (2012) reported, in the US context at least, the substance use treatment service industry is underfunded, has high staff turnover and retains ambivalence about the importance of the integration of smoking cessation. It is suggested that staff report to offer smoking cessation treatment, but actually do not provide this. Hunt et al. (2012) also examined the extent to which substance use treatment services in the USA provided smoking cessation, finding that despite many service reporting to offer smoking cessation, few actually did. Those that did tended to incorporate it into a health promotion session. Although these studies are now over a decade old, they represent a worrying trend of limited and inconsistent offering of smoking cessation in substance use treatment services, which is repeated in a review by Knudsen (2017). An earlier paper, by Knudsen, Muilenburg and Eby (2013) also found that smoking cessation interventions, when implemented, were not sustained. This was due to increased barriers such as low levels of staff interest, staff skills and competing treatment demands, all of which suggest the need for organisational support over a prolonged and sustained period to ensure that smoking cessation remains a priority.

2.9 Organisational factors

As well as individual and organisation level factors, policy level factors can influence the implantation and success of smoking cessation services. One such policy which has been received with mixed results, is tobacco free workplace policy. In parts of the USA, these have been implemented. Shi and Cummings (2015) found that providers who offered a greater number of services were more likely to delivery smoking cessation services, but less likely to implement a smoking ban.

There is hope that the impact of smoking bans in services can have longer term implications on smoking reduction, and a systematic review by Sourry et al. (2022) examined the impacts of smoking bans on people discharged from in-patient substance use, mental health or prison settings. They found that although smoking bans alone do not promote cessation, multi-component interventions in conjunction with smoking bans can significantly increase cessation rates post-discharge if they are combined with pre-and post-discharge support. As residential settings can provide part of the treatment process, is it important to examine how smoking bans in these settings can influence smoking cessation, and how transitions between service can be supported.

Another study by Campbell et al. (2022) also explored smoke free policies in substance use treatment services and found that the introduction of such policy was associated with smoking cessation training in staff and more positive beliefs towards cessations services, as well as increased delivery of these

services, demonstrating the influence of organisational level changes. Rees et al. (2008) also found that banning smoking in residential detoxification facilities did not deter patients from seeking or staying in treatment, as did Conrad et al. (2018). Smoke free policies may also improve the health of non-smokers, as there are well-documented health risks associated with passive smoking. Acquavita et al. (2014) explored the role of passive smoking in substance use treatment services and found that non-smokers in these settings may be at a higher risk of exposure. Smoking cessation interventions which challenge social norms and reduce smoking prevalence will also offer health benefits to non-smokers in substance use treatment services. Bhuiyan et al. (2017) also highlighted the importance of challenging these social norms within recovery communities, not just within substance use treatment services.

Le et al. (2020) found that the implementation of smoke free policies in substance use treatment services changes clinician attitudes, knowledge and practices in relation to smoking cessation, which facilitated client quit attempts. Carter et al. (2023) also found that the implementation of a tobacco-free workplace policy in substance use treatment services which incorporated education for staff, resulted in improved staff knowledge levels and increased delivery of smoking cessation interventions. Despite these improvements, provision of smoking cessation remined sub-optimal, suggesting that there are additional barriers to address beyond the education of the workforce.

Drach et al. (2012) surveyed residential substance use treatment services and found that only 15% had voluntarily implemented smoke free policies, although only 10% of those surveyed opposed the policy. This suggests that a more directive approach may be necessary, rather than relying on substance use treatment services to voluntarily implement smoke free policy.

Although smoke free policies can improve smoking cessation outcomes, there are some negative consequences. Eby and Laschober (2012) evaluated New York state substance use treatment services a year after a state-wide policy was brought in requiring all state funded programmes to be tobacco free. Commonly reported issues were concerns about reinforcing 'addict' behaviours, such as lying, 'dealing' cigarettes and difficulties in enforcing the ban. However, positive consequences were also reported, including reduced smoking and increased motivation to quit amongst clients, and increased awareness about smoking harms.

Fallin-Bennet et al. (2018) also identified client concerns around the introduction of smoke free policy, such as the loss of a coping mechanism, fear that the policy would drive clients away, and anticipated challenges to implementation. However, they also identified positive aspects of a smoke free policy,

including the health benefits, reduced groups up-keep, and the benefits of continued support for smoking abstinence in the case of transfer from another smoke free placement.

A systematic review by Skelton et al. (2018) examined the evidence for organisational change interventions in healthcare settings to integrate smoking cessation into service delivery. Although a large number of studies were originally identified, only seven were included in the review. Of these, the majority were low to moderate quality. Overall, this review found that organisational change interventions can reduce client smoking levels and increase smoking cessation uptake, although more, high quality studies which identify key interventions are needed.

2.10   Social identity

Smokers are more likely to rate themselves as having a greater need for autonomy, higher on risk taking, and are predisposed towards novelty (Grigsby, Forster and Sussman 2015). As the Big Book (the core reference document from AA) claims:

> *"As psychiatrists have often observed, defiance is the outstanding characteristic of many an alcoholic…"*

Source: AA (n.d.), p31

Smoking can be seen as a rebellious and may appeal to those who don't see themselves as fitting in, or desire to. Challenging this identity, which is already undergoing changes due to giving up the use of other substances, can be seen as a step too far (Grigsby, Forster and Sussman 2015). Continuing to engage in this behaviour symbolically represents the affirmation of independence and autonomy. A systematic review by Metz, Kroger and Buhringer (2005) highlighted the need for participation in smoking cessation to be voluntary, reporting that up to 12% abstinence rates are possible at one year follow up, using a combination of restrictive policies and intensive interventions, as long as client participation is voluntary.

Outsider group identity (Grigsby, Forster and Sussman, 2015) may be defined by characteristics, behaviours and values that are uncommon among one's peers – such as drug taking. This becomes the identity which carries forward on the life course and continues to influence behaviours (such as smoking) which can provide a source of bonding and affirm one's sense of belonging. This sometimes manifests as mistrust of authority or social institutions, which is reinforced by stigma and associated experiences and can make people resistant to treatment. This highlights the importance of organisation and staff level factors, and the need for positive relationships to challenge these barriers. The process of recovery from substance use is often explored from the perspective of changing

identity (Dingle, Cruwys and Frings, 2015), with individuals moving from an identity associated with substance use to one associated with recovery (Milani et al, 2020). This can be an empowering process, which for some is their first association with a positive group identity.

2.11   Treatment discipline

McClure et al. (2014) also conducted a study which compared attitudes of people receiving Opioid Replacement Therapy (ORT) with those receiving other treatments (non-ORT). They found that the ORT group smoked more heavily, had greater nicotine dependence and endorsed exposure to smoking cessation service within their treatment programmes, although both groups displayed positive attitudes to smoking cessation during treatment. The ORT group also demonstrated greater interest in trying various smoking cessation products, including pharmacotherapy. This pro-medication attitude is an interesting point, as despite a strong evidence base for pharmacotherapy as smoking cessation, there often a reluctance to try this in people who are trying to reduce their illicit substance consumption. It was suggested that the ORT group had greater contact with the treatment services, especially with medical personnel, which might facilitate a stronger relationship between clients and the services, enhancing their receptiveness to trying treatments, as well as indicating a greater availability of smoking cessation resources (Friedmann, Jiang and Richter, 2008). Walitzer et al. (2014) also found that smokers were likely to experience shorter treatment duration for substance use and were less likely to achieve their alcohol related goals, and Winheusen et al. (2014) reported that smoking cessation rates in methadone-maintained patients are low, with their intervention findings very limited quit rates with a combination of NRT and behavioural interventions. Hayhurst et al. (2021) also noted highest smoking prevalence in opiate users among a large sample of adults in substance use treatment services in England. Hughes (2009) also found that beliefs about the causes of substance use or mental health issue also affected attitudes towards medication, with those who believed in a biological cause for these issues being more favourable towards the use of medication, and those who believed in environmental causes favoured psychotherapy.

Different treatment philosophies and cultures are also likely to influence views about smoking cessation and its integration into substance use treatment (McClure et al., 2014), especially the use of medications. Abstinence based programmes often promote the abstinence from all drugs, often including medications.

Although controversial, harm reduction in smoking cessation can have its benefits, especially in those who do not wish to quit smoking. Rohsenow et al. (2014) offered motivational interviewing or brief advice on smoking cessation to clients in residential substance use treatment services for alcohol use.

They found that brief advice was effective in increasing motivation to quit, and that offering booster brief advice sessions resulted in 16-31% CPD being smoked. Cooper et al. (2009) reported similar findings, with a one-off intervention delivered to participants in substance use treatment services. Afterwards they reported an increase in motivation to seek smoking cessation support. Hall et al. (2005) also advocate for harm reduction, pointing out that the failure of treatments that are known to be successful in the general population indicate the need for a different approach. It is important that treatment goals align with those of the individual, as motivation and self-efficacy are crucial elements of recovery. Hall also suggested that an extended treatment protocol which can enhance motivation and encourage progress through the stages of change may be beneficial.

A randomised control trial by Guillaumier et al. (2020) explored organisational change interventions to increase the delivery of smoking cessation in substance use treatment services, finding that integrating smoking cessation did not improve short-term smoking abstinence. However, they did find a reduction in CPD and increased use of NRT. This study is one of many to find that abstinence informed outcomes are problematic in this population and to suggest that more realistic and appropriate outcomes might include a reduction in CPD and an increase in engagement with NRT and smoking cessation interventions. McClure and Carpenter (2020) published a commentary on Guillaumier's paper which addressed the debate about harm reduction as a valid outcome in this population. They argue that reduced smoking may improve health, but also is proven to promote eventual smoking cessation. A Cochrane review found no evidence that reducing smoking led to quitting, but also found no difference between abrupt quit attempts and gradually cutting down (Lindson et al., 2024). Abstinence only goals may seem unrealistic and be off-putting for some smokers, so a more gradual, individually tailored approach to goal setting might be more appealing.

2.12   Other substances

There are some key similarities and differences between tobacco and other drugs. One argument for the provision of smoking cessation in substance use treatment services is that many of the same techniques that are learned about other substances can also be applied to tobacco. Walsh, Duaso and McNeill (2018) found that many of the participants they interviewed discussed the application of their learning from quitting other substances to smoking cessation.

A study by Stuyt (2015) demonstrated how treating tobacco in the same manner as other drugs can have a positive impact on abstinence from tobacco. In this study, a residential, dual-diagnosis substance use treatment services where clients are required to quit tobacco use alongside alcohol and drug use for the duration of their stay (90 days) was used to assess abstinence rates. At time of

treatment entry, 86% were daily tobacco users. At one year follow up, 73% were daily smokers. Those who actively attempted to abstain from smoking during their treatment were significantly more likely to remain abstinent throughout the year, and those who were smoking were more likely to relapse to other substances as well. Despite the additional challenges associated with a dual diagnosis of a substance use disorder and a mental health condition, this treatment service demonstrated that integrating smoking cessation and treating tobacco in the same manner as other substances, can be effective in reducing the use of all substances.

Cannabis is commonly used with tobacco, especially in the UK where it is the most common route of administration. Walsh et al. (2020) conducted a systematic review on interventions addressing dual use of cannabis and tobacco. Despite moderate quality evidence, interventions demonstrated no clear effect on either tobacco or cannabis cessation, although findings suggested that targeted interventions on their dual use is feasible. Campbell et al. (2020) found that smokers who used cannabis were less ready to quit (within the next 30 days) but were more likely to want help with smoking cessation. It is important to consider these additional factors such as co-use of tobacco and cannabis when addressing the smoking cessation needs of this population.

2.13 Motivation

2.13.1 Self-determination Theory

Motivation to change can be explored using Self-determination theory (SDT), which is a broad framework for the study of human motivation and personality, focusing on how social and cultural factors contribute to or undermine people's sense of volition and initiative, as well as their well-being. It also focuses on the extent to which human behaviour is self-motivated and self-determined (Deci and Ryan, 2015). SDT differentiates between intrinsic and extrinsic motivation and proposes three main intrinsic needs for self-determination: autonomy, competence and relatedness. Although these three needs which must be met to foster health and well-being are generally universal, the ways in which they interact and the degree to which they are necessary may vary over time. If all three needs are met, the conditions are optimal for both growth and functionality.

Motivation can be either intrinsic or extrinsic, also known as autonomous or controlled motivation. Autonomous (or intrinsic) motivation can result in better health and well-being, as well continued engagement with the behaviour. This is because autonomous motivation comes from doing something because you enjoy it, or because it is connected to personal goals or values. In contrast, controlled (or extrinsic) motivation comes from doing something for approval for others, or because

you feel you 'should' or 'have to' do something. This is often linked with poorer outcomes, less consistency in performing the behaviour and decreased well -being.

Motivation is a key component of behaviour change and can be broken down into five pre-requisites for motivation to change. If any of these are missing then motivation is likely to be weakened.

In order to be motivated to change, a person must:

- Know what outcomes the behaviour is likely to lead to
- Believe the behaviour will lead to the outcome
- See value in the outcome
- Know how to perform the behaviour
- Believe they are capable of putting the behaviour into action.

These pre-requisites can be developed through creating the right environment and through fostering autonomy, competence and relatedness. These key components all contribute to autonomous motivation: autonomy (behaviour is self-endorsed), relatedness (the person feels connected and loved by others) and competence (the person feels able to meet the challenge of performing the behaviour).

Figure 3   Self-determination theory.
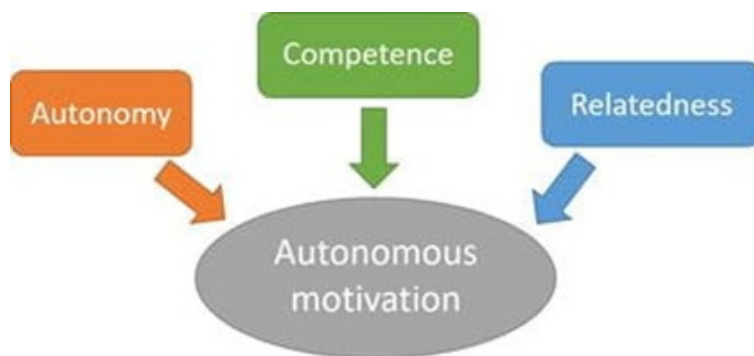
In terms of smoking cessation and substance use, the point of treatment entry is (for many) a pivotal moment in terms of motivation to change. Although this does not extend to smoking cessation for many, there is evidence to suggest that treatment entry is an opportunity to embrace the motivation to change and implement interventions to facilitate positive behavioural change. Kelly et al. (2019) piloted a 'Healthy Recovery' programme in a residential rehabilitation substance use treatment services, which targeted a range of health behaviours, including smoking cessation, improved diet and

physical activity. Although a pilot study with 50 participants, this programme demonstrated significant improvement in smoking cessation and increased physical activity levels, demonstrating that people in residential treatment are willing and able to engage in multiple health behaviour change interventions. The study that informed this thesis, by Swithenbank, Harrison and Porcellato (2022), supported the idea of residential settings as being appropriate for substance use intervention delivery.

A study by Campbell et al. (2019) examined relationships between smoking and health related quality of life, finding that smokers who reported both frequent mental and physical health distress were more sensitive to the financial cost of smoking, and were less likely to use e-cigarettes. Current smokers were more likely than former smokers to report frequent mental and physical health distress. Interestingly, Drummond et al. (2014) found an intervention which used spirometric 'lung age' to have no effect on smoking cessation, despite being effective in some other population.

An earlier study by Campbell, et al. (2016) had identified that smokers who cited health concerns as their motivation to quit were more likely to quit during substance use treatment than those who didn't cite health concerns as their primary motivation. Including smoking cessation into an individual's treatment plan was also associated with increased rates of abstinence during treatment.

A study by Mueller, Petitjean and Wiesbeck (2012) explored smoking cessation in an alcohol detoxification service and found that even at this early stage of treatment, the majority of clients were interested in smoking cessation interventions. This study found that although smoking quit rates were not affected by a CBT based intervention, reductions in CPD were evident. van Lakerfield et al. (2022) also found similar results, especially in light to moderates smokers. Incorporating a cessation period as part of treatment and implementing a smoke free policy resulted in significant changes in smoking behaviour, although this was limited in those receiving outpatient or outreach care, and in heavy smokers.

A study by Teater and Hammond (2009) assessed motivation to change in participants from across 38 substance use treatment services in the USA and found that the number of cigarettes smoked per day (CPD) was linked to motivation to quit, with those smoking between 10-15 CPD more likely to be in the contemplation stage , and 55% of the participants currently contemplating or preparing for a quit attempt. Another study by Frisckhnecht et al. (2021) assessed motivation to change as a predictor of participation in smoking cessation interventions in an alcohol treatment service. Participation was associated with higher stage of change; higher confidence in success and lower perceived stress. Improved smoking cessation outcomes were also assessed and was predicted by an association of smoking with expectations of negative physical feelings; and by lower CPD at baseline. In support of

this, Guydish et al. (2020) found that clients who wanted help quitting were more likely to receive it, including advice on how to quit, tobacco related counselling, referrals and pharmacotherapy. Motivation to quit is clearly important not just in facilitating a quit attempt, but in accessing support to make that possible. The same study found that despite wanting support, many who did want help did not receive it.

Martin et al. (2006) found that motivation to quit was higher among participants with longer previous smoking abstinence periods; fewer barriers to quitting; and greater self-efficacy; although it was not related to smoking rate, nicotine dependence or gender. Motivation to quit is therefore modifiable, and substance use treatment services may provide an opportunity to address barriers to change and self-efficacy in order to increase motivation to quit. In fact, a study by Demmel and Nicolai (2009) suggested that tobacco abstinence self-efficacy might more accurately predict the future success of an individual to cope with drinking urges than alcohol self-efficacy.

There are numerous factors which may influence motivation to quit. Xie et al. (2021) investigated the associated between motivation to quit and severity of substance use problem; perceived stress; and concerns about relapse. The findings suggested a significant influence of concerns about relapse, but no on the other two issues. This highlights that this is an area which needs to be addressed in future interventions, even before the decision to quit has been made.

2.13.2 Acceptability

It is becoming increasingly acknowledged within research that it is a key aspect which should be considered when designing and implementing interventions for healthcare (Sekhon, Cartwright and Francis, 2017). However, it is a multifaceted construct which requires further definition in relation to the context of this research. The lack of consensus on the definition of acceptability in relation to healthcare interventions can hinder the application of acceptability in healthcare systems and policy (Bucyibaruta, Peu and van der Wath, 2022), emphasising the importance of a definition. Sekhon, Cartwright and Francis (2017, p.4) define acceptability as:

> *'a multi-faceted construct that reflects the extent to which people delivering or receiving a healthcare intervention consider it to be appropriate, based on anticipated or experienced cognitive and emotional responses to the intervention'.*

One approach to defining acceptability is to use a theoretical framework, which consists of seven component constructs: affective attitude, burden, perceived effectiveness, ethicality, intervention coherence, opportunity costs and self-efficacy (Sekhon, Cartwright and Francis, 2017).

Bucyibaruta, Peu and van der Wath (2022, p275) expanded on this work to conduct a qualitative review of definitions of acceptability in healthcare, and produced the following definition:

> *'a multi-construct concept describing nonlinear cumulative combination in parts or in whole of expected and experienced degree of healthcare from patient, provider or healthcare systems and policy perspectives in a given context.'*

Context is important when considering acceptability; a smoking cessation intervention for delivery in substance use treatment services needs to be acceptable to a range of stakeholders and must take into account the specific context in terms of the appropriateness of an intervention for this setting. Acceptability is also considered to be essential to reducing stigma (Wood et al, 2018). It impacts all stakeholders (Bucyibaruta et al., 2018), although they may all have different perspectives and frames of reference with regards to acceptability (Bucyibaruta et al., 2023).

Acceptability to people accessing substance use treatment services can influence the uptake and engagement with the intervention, and subsequently the effectiveness (Fisher et al., 2006; Hommel et al., 2013). Acceptability to staff can influence the way in which interventions are delivered; they may not be delivered in the way in which it was intended, and this may have an impact on the effectiveness (Borelli et al., 2005; Proctor et al., 2009). It is also important that staff believe in the appropriateness of the intervention, as any disconnect between personal beliefs and behaviours can result in less authentic and effective delivery of the intervention and undermine the therapeutic relationships between staff and clients (Ogden, 2016).

A 2021 study explored reasons for refusing to take part in healthcare research studies and found four reasons which were associated with acceptability: anticipated burden of patient-initiated service, lack of confidence in ability to engage with new service and uncertainties about effectiveness of new service (Sekhon and van der Straten, 2021). Prospective acceptability is clearly a concern when designing an intervention, and this should be considered when recruiting or inviting people to take part in a study or in a healthcare intervention.

2.13.3 Behaviour Change and Recoverism

Having a strong sense of autonomy, competence and relatedness contribute to better health (Hagger et al., 2020, p146). From an SDT perspective, the development and maintenance of these attributes (and therefore the satisfaction of needs) is associated with well-being and life satisfaction because it reflects the functioning of an organism in an optimal state (Hagger et al., 2020, p146).

In this way, the SDT approach and interventions which are based on it, are both person-centred and beneficial to participants even if the desired outcomes are not achieved. If the participant gains or develops a sense of autonomy, competence and / or relatedness, then the intervention can be said to have improved their overall health and well-being in some way. From a substance use perspective, interventions which involve the participant gaining something, and developing one or more of these attributes can be beneficial, even if the participant continues to use substances. As is often the nature of substance use, it can be a long, slow process of change and may require several attempts. Instilling a sense of autonomy, competence or relatedness may contribute to longer term outcomes and improved health and well-being, which is difficult to capture using traditional outcome measures.

From a recoverist perspective, this person-centered approach illustrates the benefits of recovery. It contributes to overall improving health and well-being, rather than focusing on substance use or abstinence as the main goal of treatment or recovery. An SDT approach to behaviour change utilises a broader definition of recovery and a broader set of outcomes, including reducing stigma and instilling hope.

It is worth mentioning that although this research does not exclude anyone based on their consumption of substances, the setting of substance use treatment services is important to acknowledge. In the UK at least, people entering substance use treatment do so voluntarily. Although there are some degrees of willingness to enter treatment, this research is based on the premise that people accessing substance use treatment services have a desire to change their behaviours in some way. As discussed in more detail elsewhere, motivation to change can vary greatly over time and depending on what drives the motivation; intrinsic motivation can lead to positive outcomes for health and well-being when compared to extrinsic motivation. Broadly speaking, as long as an individual entering treatment has a desire to make positive behavioural changes, then smoking cessation can and should be offered. A key premise of delf determination theory is that improving autonomous or intrinsic motivation by fostering competence, relatedness and autonomy can lead to positive changes in health and or well-being, and this premise underlies the entire concept of recovery and substance use treatment.

2.13.4 Autonomy and agency

Autonomy refers to an individual's self-governance, and the freedom to make choices without external control or influence. This is often related to self-determination, and to the ability to regulate one's own behaviour. Autonomy in healthcare is grounded in the principle of respect for individual rights and dignity, and is a key aspect of recovery.

Agency refers to the capacity to act and make to choices, whilst acknowledging the social and cultural contexts which shape those choices. Agency is related to empowerment and effecting change and making a difference in the world.

In recovery, both of these are important and distinct concepts. Treatment which respects and supports agency and autonomy of the individual is reflective of a person-centred discipline. Autonomous motivation reflects willingly engaging in behaviours for self-endorsed reasons and is consistently related to sustained behaviour change (Hagger et al., 2020). Autonomous motivation can be promoted by social agents through the provision of choice, acknowledging conflict, avoiding controlling language, and external reinforcers, and fostering personally-relevant goals

Substance use treatment can present something of a paradox in relation to autonomy of the people accessing services. On the one hand, service users are expected to take ownership of their substance use, often by self-referring to services and being proactive in accessing support. On the other hand, once admitted to services, there is an expectation of prescriptive engagement with the process which leaves little room for autonomy and personal choice.

As discussed earlier, interventions are about far more than the BCTs which they incorporate. There are important aspects which are difficult to capture but can have huge influence in the delivery and effectiveness of both the BCTs and the intervention overall. Hagger and Hardcastle (2014) present the idea of interpersonal style, and its importance to the effectiveness of interventions. This goes beyond the mode of delivery, and instead focuses on the style of delivery, which may include language used, interactions between providers and recipients of the intervention and other aspects of the delivery which are harder to measure or describe.

2.14   Strengths and Limitations of a Behaviour Change Approach

2.14.1 Behaviour Change Wheel

Although there are many advantages of a behaviour change approach to intervention development, there are also criticisms of the approach which must be addressed. For example, some critics argue that it can be seen as a prescriptive approach which does not take into account specific populations and contexts (Hilton and Johnson, 2017). Secondly, although the framework of the BCW appears to be comprehensive, and was informed using a thorough, systematic methodology (Michie et al. 2011), it can be argued that it is problematic to use. Ogden (2016) argues that the BCTT offers an over-simplified description of human behaviours, with overlooks the huge variability in people and in their

interactions (Ogden, 2016), and therefore reduces the effectiveness of any interventions based on this approach.

Another limitation of the approach is explored further in Chapter 4 of this thesis, Reporting Guidelines. As was found when extracting data for the ICSmoke systematic review, reporting of behavioural change interventions varies, especially in relation to behaviour change techniques (de Bruin et al., 2021). This makes systematic review or any attempts to recreate an intervention which makes use of the BCW problematic. Identifying the BCTs used in interventions can be challenging even for researchers familiar with the BCCTv1, as the ways in which interventions are reported varies and are often under-reported (Swithenbank et al., 2024). Accessing the relevant information and identifying the appropriate BCTs is time consuming and beyond the scope of many studies. However, this systematic approach can result in a detailed and thorough dataset which allows for a deeper understanding of behavioural change interventions.

Many intervention descriptions are subject to interpretation, and even in the few studies which report BCTs used, the supporting information on contextual factors is limited. This information is often ambiguous and as such can be coded as one of several different BCTs, if at all. It has been suggested that more specific taxonomies for different areas of health may be useful to overcome this problem (Michie et al., 2010). However, smoking cessation is one of the more established areas utilising the BCTTv1, with specific examples of the different BCTs and their use in relation to smoking cessation available. As such, the benefits of using an established and systematically designed framework such as the BCW outweigh the potential limitations.

It is also worth considering the content of the BCTTv1; as some of the BCTs described could be intimidating or alienate relationships between client and healthcare provider (Whittal, Atkins and Herber, 2021). Some of the BCTs rely on forms of punishment, deterrence or guilt to manipulate behaviour change, which are ethically questionable. These can be argued to be in conflict with a recoverist approach, which focuses on empowerment and education rather than manipulation or punishment. Some research suggests that certain BCTS could be harmful when applied in different contexts. For this reason, all BCTs suggested by and of the studies or evidence sources used in this thesis are assessed for acceptability prior to their inclusion in any recommendations. Acceptability is a key concept and is discussed in more detail later in this chapter. There is evidence that deterrence is an ineffective approach to changing behaviours, and that positive focus can improve both effectiveness and engagement (Ulanday et al., 2017).

The BCW and the associated processes have gained a lot of support and have been used in a range of different contexts but are not without limitations. In terms of recovery, Day (2021) points out that it must be 'voluntarily-sustained in order to be lasting, although it may sometimes be initiated by 'coerced' or 'mandated' interventions within the criminal justice system' (UK Home Office, 2021). One of the criticisms of a behavior change approach is that it works by manipulating choices and behaviours (Hansen and Jespersen, 2013). There has been debate around the concept of consensual manipulation (Wilkinson, 2103), where manipulation can be consistent with autonomy, if done with the right consent. This is a concern in terms of the acceptability of a behaviour change approach, especially in this context, as autonomy is often undermined in healthcare setting for PUWD/A.

Another potential limitation of the behaviour change approach lies in the nature of person-delivered interventions, which rely heavily on interpersonal relationships and the context of the delivery setting (Chiang et al, 2018). There are many other aspects of interventions beyond the content which can be developed using the BCW, some of which are explored in this thesis. The BCW is limited in its utility for developing these aspects of interventions, which are especially relevant in the context of substance use treatment services. As such, this thesis uses the BCW and BCTTv1 to develop recommendations for behaviour change techniques as part of an intervention but does not rely solely on this for the broader considerations, such as provider, mode of delivery and the importance of personal relationships. Other sources of evidence are combined to provide this information, befitting a pragmatic approach to research and intervention design, and a recoverist approach which aims to shift from a medicalised model of treatment to a more holistic, person centred model. Whittal et al. acknowledge that the COM-B model which is central to the BCW does not take into account the contextual or cultural factors which are relevant for designing interventions (Whittal et al., 2020), and the researcher's responsibility is to recognise this.

Contextualising the evidence to substance use treatment services requires a broader approach in order to provide an intervention which is both effective in reducing smoking in this population, but also aims to reduce stigma and empower PWUD/A to take control of their own treatment and improve overall health and well-being outcomes.

2.14.2 APEASE

The APEASE tool offers a framework which can be used to ensure rigour and transparency in decision making throughout the design and development process of an intervention. Its flexible approach allows for it to be used in a meaningful way in a variety of ways and approaches, making it an appropriate and useful tool for this study.

Despite these benefits, the flexibility of the framework can lead to confusion around the best ways to utilise the APEASE tool and leave the criteria and the ways of assessing them open to interpretation. This is a benefit here, as the tool has been modified to ensure the perspectives of PWUD/S are given priority, but the vague descriptions or interpretations of each criteria can be inconsistent across or within studies. It can also be further complicated if multiple researchers are contributing to the assessments. Whittal et al. (2020) found that they were unable to make informed decisions about all components of the APEASE criteria, especially when considering acceptability to stakeholder or the proposed degree of effectiveness. They suggest additional stakeholder engagement to enable a more informed and relevant assessment. However, it can be challenging to engage with stakeholders when discussing specific intervention components such as BCTs. The BCTTv1 is not very user-friendly to someone unfamiliar with the concept, with numerous and complex constructs which may be off-putting when trying to gauge acceptability of BCTs or even the overall approach.

In order to address these issues, and to improve the validity of future work in this area, a qualitative approach to exploring the APEASE criteria with different stakeholder groups would be beneficial. Interviews or focus groups with a variety of stakeholders, all of whom have important perspectives to consider, such as PWUD/A, staff, and management from substance use treatment services. This could be a useful piece of work to develop and improve the intervention recommendations made in this thesis.

2.15   Evidence

Despite the increase in available evidence in smoking cessation in this population, it is important to remember that much of this evidence is derived from research-based treatment samples, which utilise strict inclusion and exclusion criteria, as well as potentially unrealistic or unacceptable outcome measurements. All of these factors limit the real world applicability, and generalisability of the evidence from these studies (Walitzer et al., 2014). They also fail to consider the wider social and environmental contexts, as well as long term follow ups. Banducci, Lejuez and MacPherson (2013) found that long term abstinence from tobacco in this population is relatively rare.

A systematic review by Apollonio, Philips and Bero (2016) also found that the quality of evidence in this area is of low quality, primarily due to incomplete reporting of risk of bias and clinical heterogeneity in the nature of treatment. This review also suggests that some evidence not suitable for this population, who need tailored and targeted interventions (Apollonio, Philips and Bero 2016) which acknowledge the social and other complexities of this group (McClure et al., 2014). It is important to identify which factors are different for this population and are not typically emphasised

in smoking cessation programmes (Grigsby, Forster and Sussman, 2015). There is a need to understand the interplay of complex motivations, internal and external conditions and functions of tobacco use. Foster, Schmidt and Zvolensky (2015) also confirmed that behavioural and cognitive quit processes amongst PWUD/A are complex and it is possible that these processes might be associated with increased substance use.

2.16   Conclusions

This review of literature describes the different interventions that might be suitable for smoking cessation interventions in substance use treatment services, and explores the barriers and facilitators which need to be addressed to provide better support for PWUD/A. There is an increasing amount of evidence in this area, but much of it is not necessarily appropriate for a real-world setting. A more nuanced approach which takes into account the perspectives of clients and staff in substance use treatment services is necessary to ensure any future smoking cessation is both acceptable and effective. Organisation and policy factors also have a significant role to play and should be addressed wherever possible to challenge social norms and shift the culture in substance use treatment services away from one which endorses or ignores the issue of the high prevalence of smoking in this population.

This review highlights the gaps in the literature on smoking cessation in substance use treatment services, especially when explored from a recoverist perspective. Much of the existing literature is written from a clinical or medical perspective, which focuses on specific outcomes that may not represent the most appropriate or priority outcomes for those accessing services. There is a lack of contextualised research which explores the service user perspective, or the acceptability of smoking cessation to the relevant stakeholders, including those accessing services as well as those delivering or commissioning services.

As is discussed earlier, much of the literature is conducted in the USA, which offers some valuable insight but is limited in terms of transferability to the UK context. Policies and legal frameworks vary greatly, which in turn influence perspectives and the appropriateness of some interventions or approaches. The healthcare models of the USA and the UK have fundamental differences which present different challenges and benefits and need to be explored as separate contexts. Context is a key factor when identifying relevant evidence and developing interventions or policies, and it cannot be assumed that an effective intervention in one context or geographical location will be effective in another. Much of the existing research is based on traditional research and healthcare hierarchy, and fails to take this contextualisation into account. This can increase barriers to treatment by incorrectly

defining this population as 'hard to reach' or 'hard to treat', when it is often due to a lack of contextualisation and identifying the needs and wants of this group.

The review of literature presented here has identified the need for more nuanced and contextualised research in the area of smoking cessation in substance use treatment, and the importance of perspective. The following chapters of this thesis present an alternative to existing evidence, which acknowledges and celebrates the needs and desires of people accessing these services, with the aim of addressing these gaps and informing more person-centred treatment and interventions, based on a recoverist approach.

Chapter 3 Methodology

3.1 Introduction

This chapter will present the methodology of this PhD. The specific methods used for each study are described in detail in the respective chapters, however this chapter explains the methodological underpinnings and the rationale for the approach used.

Firstly, this chapter will present the research paradigm; next it will describe the approach used. Following this is a critical discussion of the research tools used and then methods of analysis are critically explored. This is followed by a description of the approach to synthesis, and how issues of trustworthiness, rigour and validity are addressed. Finally, ethical considerations are discussed and a chapter summary is presented.

3.2 Research paradigm

Research paradigms are philosophical frameworks on which research is based (Kivunja and Kuyini, 2017). A research paradigm comprises ontology, epistemology, methodology and methods (Rehman and Alharthi, 2016), each of which is discussed in the following sections in relation to the paradigm on which this thesis is based.

As a research paradigm, pragmatism is based on the proposition that "researchers should use the philosophical and/or methodological approach that works best for the particular research problem that is being investigated" (Kaushik and Walsh, 2019). Pragmatism is best suited to a mixed methods approach, being compatible with both qualitative and quantitative methods, as well as both inductive and deductive approaches to analysis (Creswell and Plano Clark, 2011). It is suited to research where the focus of the research is on the research questions and the consequences of the research, rather than the methodology.

Pragmatism is suited to substance use research and has long been incorporated into drugs policy. It avoids a moralistic approach, attempting instead to accept the reality of substance use and attempt to address this within a realistic, practical manner. Pragmatism in drug policy recognises substance use as a health issue that requires treatment rather than punishment. It also shifts from an abstinence-driven approach towards one which aims to reduce the harms associated with substance use and improve the health of PWUD/A (Marlatt, 1998). In the same manner, this research takes a pragmatic approach. Each study requires a different approach which is best suited to its aims and objectives in order to address the important issue of smoking cessation.

One key tenet of pragmatism is the concept of truth, as explained by Howell et al. (2013, p.132):

> *'Pragmatism defines truth as those tenets which prove useful to the believer or user. The verifiability of truth exists to the extent that actuality or things correspond with statements and thoughts. Objective truth cannot exist because it needs to relate to practice: both subjective and objective dimensions are necessary'.*

In this thesis, subjective and objective dimensions are used and combined to try and better understand what 'truth' lies at the heart of the phenomenon being studied. Knowledge is explicitly linked to experience (Allemang, 2020), and pragmatists argue that social issues are best-defined by those with experience of them. Whilst many paradigms may be used in mixed methods research, pragmatism offers a worldview which connects with the key values of this thesis. Pragmatism's emphasis on context, time and place reflect the importance of these concepts in person-centred research, such as this thesis. There is an inherent focus on social justice and democracy which marry well with a recoverist approach, as both share these fundamental core values. Pragmatism strives to minimise power imbalances (Hildebrand et al, 2011), which is something which this research aims to do by prioritising the perspectives of PWUD/A above the more traditionally recognised sources of evidence.

Reflections on the pandemic; pragmatism:

My original methodology focused heavily on co-production, as this is something I feel strongly about. I wanted to deliver meaningful involvement for PWLE and produce an intervention which was tailored to be both effective and acceptable to all stakeholders. My biggest disappointment about the changes in methodology due to the pandemic was the loss of this key aspect. I did debate whether it was worth continuing with the project at all, given how different it would be and how central the concept of co-production was. Eventually, I reminded myself why this research was important. In many meetings I've been in, with many different stakeholders, I always advocate for meaningful involvement, even when true co-production isn't possible. I decided to take a pragmatic approach; the research still mattered, and it was worth doing, even if it looked different from the original vision.

Co-production is still something that is important to me, and I plan to incorporate into future work, but its loss from this project wasn't reason enough to abandon it.

3.3 Approach: Mixed methods

A mixed methods approach was utilised for this research project in order to make the best use of available data and to explore the different perspectives on the topic and address the research question. This was informed by a pragmatic paradigm and using behavioural change theory as its underpinning approach. The COM-B model and Self-Determination Theory work together to provide a way of understanding human behaviour and motivation and are used here to develop recommendations for smoking cessation interventions.

Mixed methods research is an approach which involves the collection and analysis of both qualitative and quantitative data within the same study (Shorten and Smith, 2017). This allows for the strengths of both qualitative and quantitative research to be drawn upon, allowing for the complexities of diverse perspectives to be explored and for a greater breadth and depth of understanding (Johnson, Onwuegbuzie and Turner, 2007). Mixed methods enables the strengths of one approach to counteract the limitations of another (Regnault et al., 2018). One of the purposes of this programme of research was to identify the strengths and limitations of different research methods and types of evidence in relation to PWUD/A, and this mixed methods approach allows for that in a what that a single method would not. It is important to understand these different perspectives in order to develop an approach which combines scientific rigour with acceptability to multiple stakeholders (Crump and Logan, 2008).

Mixed methods approaches can be especially useful in addressing complex research questions which use a variety of methods to identify different aspects of an issue. Multiple stakeholders can be involved, and their different perspectives synthesised to provide a more nuanced and appropriate response to the problem (Åkerblad, Seppänen-Järvelä and Haapakoski, 2021). Public health encompasses a broad range of disciplines, and a mixed methods approach can draw on a range of these. In order to gather adequate and appropriate evidence for each perspective, different methods were necessitated. The analysis of BCTs was best approached using quantitative methods, whereas a qualitative approach was more suited to an in-depth exploration of staff and client perspectives. Evidence on mixed methods designs supports the value of 'dynamic switching back and forth between...inductively and deductively driven analysis' (Hatta et al., 2020) which can enhance the effectiveness and rigour of both approaches.

This thesis uses a concurrent embedded mixed methods design (Castro et al, 2010), incorporating a combination of qualitative and quantitative methods, as well as secondary data analysis, as each of the different perspectives on the topic can be best explored using different methods. The methodology is illustrated in Figure 7 in Section 3.11. Each of the studies was developed concurrently,

although as they progressed, they each informed the development of the other studies. In concurrent embedded designs, quantitative and qualitative data are collected simultaneously, but both are guided by the same methodological underpinning (Creswell et al., 2003). The enables the collection of multiple types of data during the same period, to answer different questions within the research project.

The ICSmoke project, which is introduced in the next section, provides much of the data for Studies 1 and 2 was developed and conducted prior to this thesis being conceptualised, and some of the issues identified through this process were used to inform the original qualitative interviews conducted as part of Study 3. All of the studies have evolved in tandem, each informing the others and combining to produce this thesis.

3.4 ICSmoke

The ICSmoke project was a Cancer Research UK funded systematic review project of behavioural smoking cessation trials (de Bruin et al, 2016). Data from this project included an extensive database of randomised control trials of behavioural interventions for smoking cessation, with the extracted data including outcome measures at all timepoints, delivery information and active components of behaviour change for both the intervention and the comparator groups, as well as TIDieR data, demographics and pharmacotherapy data. Although the ICSmoke project included all populations over 18 years of age, substance use was an extracted characteristic, and as such enabled the identification and analysis of trials which focused on smoking cessation in adults who used substances (either drugs or alcohol). This made the dataset useful and appropriate for use in Study 2 of this PhD.

As part of the ICSmoke project, a Delphi study was conducted which explored the perspectives of experts in the field of smoking cessation on the design and reporting of smoking cessation trials. Much missing data was identified during the data extraction phase of ICSmoke, which led to the decision to explore this in more detail, following discussions with the extended ICSmoke team and subsequently with 17 experts. Both aspects of the ICSmoke study have been used in Study 1 to explore the 'expert' and academic perspectives on smoking cessation trials.

Systematic reviews of behaviour change interventions for smoking cessation vary in scope, quality, and applicability. ICSmoke aimed to generate more accurate and useful findings by (1) a detailed analysis of intervention elements that change behaviour (i.e., behaviour change techniques) and potential moderators of behaviour change (i.e., other intervention and sample characteristics) and (2)

assessing and controlling for variability in support provided to comparison groups in smoking cessation trials.

Figure 4   **ICSmoke Project overview.**
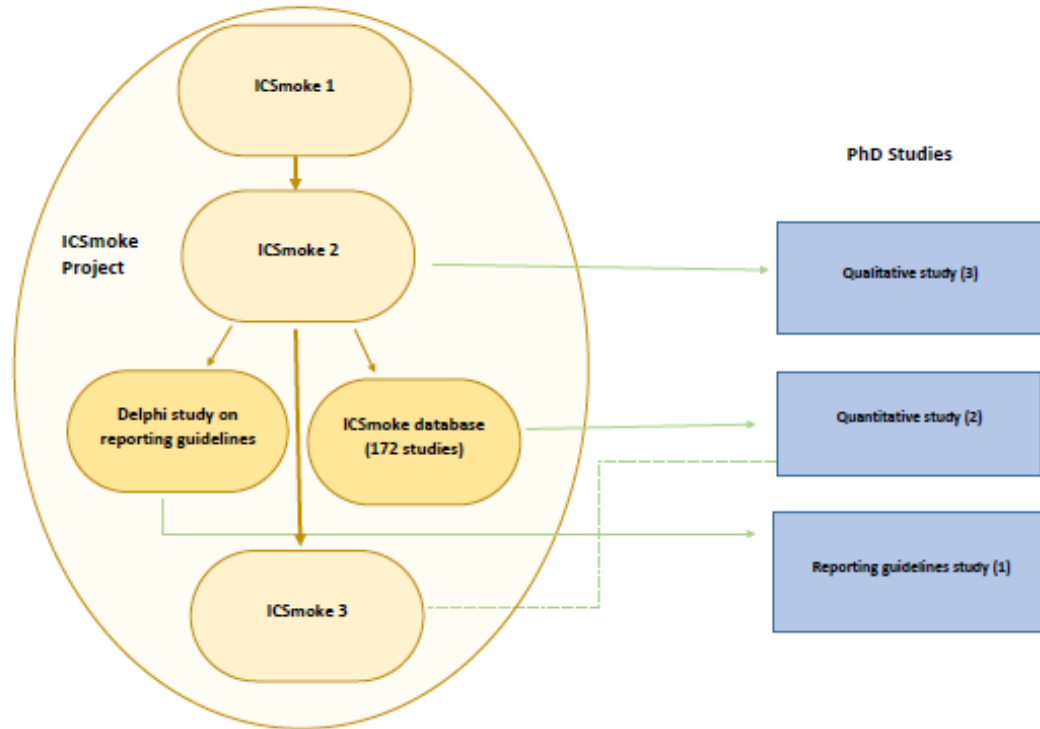
3.4.1   The role of the researcher in the ICSmoke project

My role in ICSmoke began prior to starting the PhD. I worked as a Research Assistant at the University of Aberdeen from 2018-2020. This role involved working on the second phase of the ICSmoke project, ICSmoke2, where an update to the original searches was carried out. My role included screening and data extraction for the ICSmoke2 update, which identified and added 30 additional studies to the original database. I was also responsible for extracting and coding the behavioural change techniques from all study materials for the 30 additional studies. I organised the Delphi study, including the face-to-face meeting in Utrecht in 2019, and took the lead role in producing the reporting guidelines for the CONSORT-SPI-SMOKE extension (Swithenbank et al, 2024). The principal investigator, Prof. Marijn de Bruin, gave me permission to use the data from the ICSmoke project for this thesis.

As part of this PhD, I conducted an update to the searches (ICSmoke3), using the Cochrane Tobacco Addiction Review Group Specialized Register (CTAGSR), via the Cochrane Register of Studies Online (CRSO). In October 2021, the search was run again to identify studies published after 2018. The

Cochrane register yielded 3946 results, which were screened by two researchers to identify the relevant trials for inclusion. As with ICSmoke2, the protocol for the original ICSmoke was followed to ensure the reliability and validity of the data (de Bruin et al, 2016).

The existing database did not need to be updated, despite an updated search being conducted. None of the studies identified after the initial screening included or focused on people with substance use issues, so it was decided to halt the process at this point. Additional studies would have added to the non SU dataset, but not the SU set. Given the limited benefits of this, and the challenges of gathering the comprehensive data to maintain the high standards of the existing dataset, it was agreed with the supervisory team that it would not be practical to continue. In order to meet the requirements of the review, authors would need to be contacted to gather additional information including the TAU questionnaire, additional study materials. This is time consuming and challenging, even the ICSmoke study struggled to reach authors with a full team of well-respected researchers in the field, so the chances of this update getting adequate responses was small. As such, the database collected during the ICSmoke 2 phase was used for all quantitative data analysis in Study 2. Further detail on the search and screening processes can be found in Appendix G.

The overall project is referred to as ICSmoke, but the different iterations are described below. As the project evolved, different work packages were added. I worked on the ICSmoke 2 phase, which included updating the searches, adding new variables to the dataset (from all 172 studies) and running a modified Delphi study to develop reporting guidelines for smoking cessation trials. As discussed above, the third phase (ICSmoke 3) was conducted as part of this PhD, and searches were updated but no new studies were added to the ICSmoke database.

Figure 5   **Iterations of ICSmoke project.**

ICSmoke 1
- Original searches (2015)
- 142 studies included

ICSmoke 2
- Update to searches (2018)
- 172 studies included (30 new studies added)

ICSmoke 3
- Update to searches (2021)
- No studies added
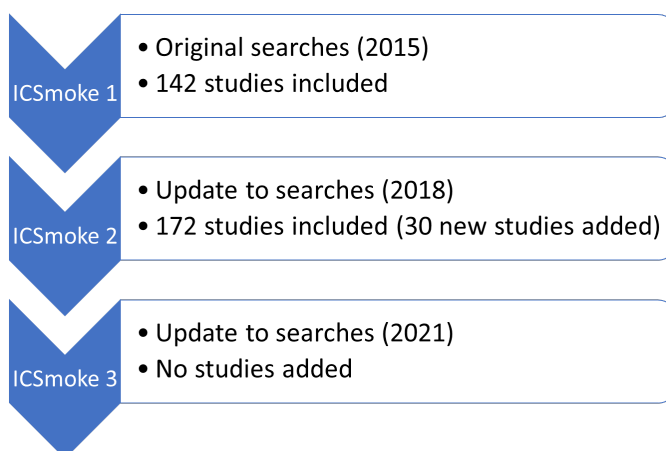
For Study 1 (Reporting Guidelines), the transcripts from the face-to-face meeting that was held as part of the Delphi study for the ICSmoke project were used as a data source for a qualitative secondary analysis. As part of this PhD study, the meeting recordings were transcribed verbatim and analysed using a framework analysis to identify behaviour change techniques and other aspects of smoking cessation interventions which could be included in recommendations for the context of substance use treatment services.

The below diagram illustrates how two components of the ICSmoke2 study were used in this thesis. Both the ICSmoke2 database and the Delphi study were used in this PhD; the database was used as the basis of the secondary data analysis (Study 2) and the Delphi study materials (transcripts from the expert consensus meeting) were used in Study 1.

Figure 6   **ICSmoke components within the PhD study.**
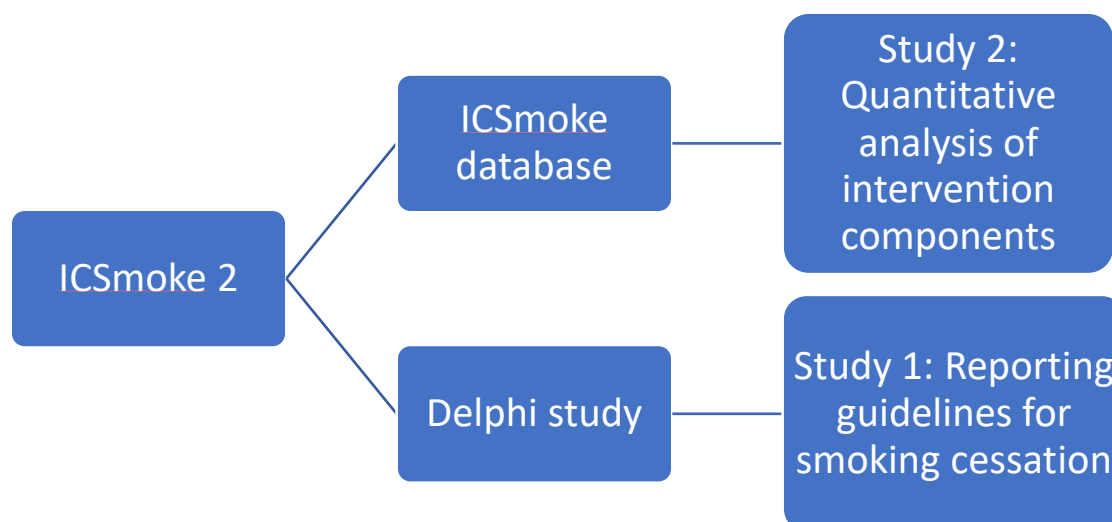
3.5 Secondary data analysis

Secondary data analysis has been argued to be a 'respected, common, and cost-effective approach to maximizing the usefulness of collected data' (Hinds, Vogel and Clark-Steffen, 1997, p. 408), as it can allow for new perspectives on existing data, and the generation of new ideas, without the burden on both researcher and participant or the costs associated with primary data collection. The advantages of using data from the ICSmoke study (both the quantitative data used in Study 2 and the qualitative

data used in Study 1) were that the data was already collected and available to the researcher, as well as providing unique perspectives and extensive amounts of data.

3.5.1   Quantitative secondary data analysis

Using the vast array of information generated within the ICSmoke study allowed for additional analysis to be carried out on an existing database, reducing the time and resources that would have been required to create such a database as part of this PhD study. The strengths of the database are discussed in more detail in Chapter 5, alongside a description of the quantitative analysis. Because the ICSmoke project was conducted as part of a large, methodological systematic review project, with considerable resources, its methodology was rigorous and comprehensive (de Bruin et al, 2016), demonstrating the quality of the data source. In particular, the ICSmoke project went beyond the limitations of a traditional systematic review by augmenting the information published by studies, such as methodological aspects and results, with additional data collected directly from publishing authors. This allowed the expanded database to be exploited allowing a detailed exploration of the evidence-base underpinning smoking cessation activity within specific groups, such as those in treatment for drug or alcohol use.

3.5.2   Qualitative secondary data analysis

In Study 1, meeting transcripts from an expert consensus meeting are used as a secondary data source. Largan and Morris (2019) state that: '*All information created by humans exists as data in one form or another and therefore, as resources for research that can be evaluated and analysed*' (p.122). The approach to analysis is described in more detail in Chapter 4 but involved a deductive framework analysis to identify BCTs within the data, as well as an inductive, generic qualitative analysis to identify key themes.

One of the key arguments in favour of secondary analysis is that it utilises existing data without the need for additional burden on participants (Heaton, 2004). In the ICSmoke Delphi study, there were considerable costs involved with the meeting, including transportation and accommodation for the fifteen experts from around the globe, as well as the time and effort what went into the planning and organisation, which were only possible as part of a larger project, and with the support of the principal and co-investigators. Recreating this would not have been possible due to resource and capacity issues, and costs and other resource demands could not be justified. Having had the opportunity to meet with world experts in the fields of smoking cessation and trial design, making use of the data gathered from an in-depth and detailed discussion about some key aspects of smoking cessation trials

beyond the published guidelines (Swithenbank et al., 2024) seemed like a pragmatic and useful research activity.

In this case, although the secondary analysis was not planned and therefore could be questioned as to its ethical use, all the participants were aware that they were taking part in a meeting which was being recorded and which would be used to inform the research project. The meeting was part of a research process and all those taking part were academic researchers or those involved in clinical trials, so no personal or sensitive topics were discussed (Parry and Mauthner, 2004). It was purely a scholarly activity, and as such using the data for additional analysis does not breach any ethical standards.

Another criticism of secondary data analysis is that it can be problematic for researchers to understand the context in which data was collected, and they may lack firsthand knowledge of the research process, which can lead to inappropriate interpretation of the data (Mauthner, Parry and Backett-Milburn, 1998). In this study, the researcher conducting the secondary data analyses attended the original meeting where the data was gathered, and also had a significant role in the development and organisation of the project and of the meeting itself. The unique position supports the authenticity of this data source. Although the meeting took place in 2019, much of the discussion is still relevant and useful. As mentioned earlier, it would be challenging to recreate the meeting, and difficult to justify the resources needed to do so. Even if it were recreated, it would be unlikely that the findings would be the same, given the context, setting and participants involved. However, the uniqueness of the meeting is what makes it a useful and interesting data source and befitting of a pragmatic research paradigm.

When assessing the appropriateness and quality of a data source for secondary qualitative analysis, issues such as authenticity, credibility, representativeness and meaning should be considered (Largan and Morris, 2019). Authenticity and credibility have been discussed above. In terms of representativeness, a key limitation of the ICSmoke Delphi study was the geographical and socio-economic bias of the meeting participants (Swithenbank et al., 2024). Despite the efforts of the research team to include a more diverse range of participants, 15 of the 17 invited experts were European, with the remaining two being from Australia. This may influence the generalisability of the findings but is representative of the majority of evidence available on smoking cessation, especially in a UK context. Similarly, no people with lived experience were included in the expert panel, which, although a limitation to the Delphi study, echoes available evidence and as such is representative of the phenomenon being studied.

Meaning can be assessed by the clarity of the data, and the ways in which, or extent to which to it build on a collective understanding of the issues being explored (Largan and Morris, 2019). The data source in this study is taken out of context, and as such some of the data is irrelevant to the aims and objectives of this PhD research. However, the context of the meeting is explained in Chapter 4, and in further detail in the CONSORT-SPI-SMOKE guidelines (Swithenbank et al, 2024), and the results from the analysis conducted in Study 1 stand alone. The data and the findings from it contribute to a wider understanding of the different perspectives and forms of evidence in relation to smoking cessation, which is why this study was included as part of the wider PhD research.

3.6 Generic qualitative research

Generic qualitative research is a broad methodological approach that *'seeks to understand human experience by taking a qualitative stance and using qualitative procedures'* (Kostere and Kostere, 2021, p.3). Often defined in term of what it is not (Caelli, Ray and Mill, 2003), generic qualitative research can be seen as a pragmatic approach to qualitative research, which is not bound by methodological purism (Khalke, 2014). Supporters of this approach argue that choices around methods and methodology should be informed by the research questions, rather than the other way around (Caelli, Ray and Mill, 2003). This is in keeping with a pragmatic paradigm, where the research tools are those which best answer the research questions, rather than being bound by strict methodological constraints. In generic qualitative research, methods are usually highly inductive, with data being analysed concurrently, often while data is still being collected (Neergaard et al., 2009), as was the case with this mixed methods PhD.

Critics of the generic qualitative approach to research cite the lack of underpinning theory and a robust critical body of literature as limitations of the approach (Khalke, 2014). Neergaard et al. (2009) argue that the lack of an established methodology makes for atheoretical research, which lacks complexity and depth. Another concern is that the blurring or combining of methods leads to an approach which lacks clarity and results in research which is of questionable quality (Caelli, Ray and Mill, 2003).

One of the main strengths of this approach is that it is flexible, responsive and contextually situated, allowing for a method to fit the research questions and available data (Khalke, 2014). This allows researchers to focus on the aims of the research in the way that is most appropriate. This pragmatic approach was informed by the underpinning research paradigm of this PhD, and makes use of the available data, even when this is a less traditional approach, as in the case of document analysis in Study 1. The approach also allows for pluralism, or the incorporation of multiple perspectives within

the research. Using a qualitative approach such as this allows for the findings to stay 'close to the data' through the use of codes generated directly from the data (Sandelowski, 2000).

The use of the generic qualitative approach is appropriate in this PhD as it both fits with the research philosophy and the research aims; it offers a flexible approach which allows for the incorporation of a range of perspectives and data sources in order to provide a deeper understanding of the social phenomenon being studied.

3.7 Data collection tools

A range of data collection tools were used throughout this PhD; the data collected as part of the ICSmoke project is discussed above. Study 3 utilised a qualitative approach to explore the perspectives of different stakeholders in substance use treatment. This included semi structured interviews with both staff and service users within treatment services which were subsequently transcribed and analysed. This was done using a generic qualitative approach as befits a pragmatic research paradigm and using a recoverist lens to position the research and is discussed later in this chapter.

3.7.1 Interviews

Interviews were chosen as a data collection method as they can provide a deeper understanding of social phenomena than quantitative methods (Silverman, 2000), and are an appropriate method for exploring experiences, beliefs, perceptions and insights (Minhat, 2015). Interviews are designed to explore the participant's own framework of meanings (Britten, 1995), and the role of the researcher is to listen and to unpick these, rather than imposing their own beliefs or preconceptions onto the subject matter as much as is possible. They are especially useful when the researcher has a level of knowledge of the phenomenon being studied, and for exploring potentially sensitive subjects where participants may feel more comfortable on a one-to-one basis (Minhat, 2015) and may elicit responses which are both meaningful and culturally salient.

Although interviews can be a useful and practical tool for data collection, they are not without limitations. They rely on the skills and ability of the researcher in both collecting the data and analysing it. In this study, audio recording was used rather than video, so any non-verbal cues and reactions were not captured, making it more difficult to ascertain the meaning behind the participants responses (Alsaawi, 2014). Although notes were made during interviews to acknowledge these, and to act as a reminder during later transcription and analyses, interviews rely on the researcher accurately interpreting these during the interview and during the analysis phases. Video was

deliberately not included in this study, in order to make participants feel more comfortable and natural, and due to ethical considerations.

Another potential limitation to the use of interviews is that of researcher bias (Salazar, 1990). It is impossible for the researcher to be completely objective, as they always bring their own history, experiences and perspectives with them (Robson, 2011). In this study, the researcher was sometimes known to participants through previous roles, which was both a benefit and a challenge. In terms of recruitment and access to participants, prior knowledge and existing relationships facilitated access to substance use treatment services, their staff and people accessing services which may have been more difficult without. Having also worked in (and received treatment from) the substance use treatment service that was the primary source of participants gave a useful insight and background knowledge to the context. However, there are concerns that this might limit the openness of participants, who may feel obliged to answer questions in a certain way or feel reluctant to be honest in some situations. This was mitigated by reassuring the participants of the confidentiality of anything they said during the interviews, and that all identifying data would be anonymised. In addition, knowing that the researcher was no longer employed by the service or had any links to the organisation management ensured that participants understood that the role of the researcher was independent from the organisation.

The sample size for interview participants in Study 3 was set at ten staff and ten service users. This was partly for pragmatic reasons and capacity limitations, but also due to anticipated saturation. Saturation in this context refers to the point where new interviews confirm findings from earlier interviews, with no new or surprising insights (Knott et al, 2022). However, this concept assumes that data collection and analysis take place concurrently, which is not always practical. Detailed thematic analysis is time consuming and the nature of participant interviews, especially in this setting, is such that the researcher needs to be as flexible as possible and has limited control over when the interviews take place. Despite these concerns, the sample collected provided rich data, to the extent that the researcher was satisfied that sufficiency had been achieved (Alsaawi, 2014).

3.8 Ethics

As the first two studies in this thesis use secondary data, there were no ethical processes required for their use. The Expert Consensus study (used in Study 1, Reporting Guidelines) did not require ethical approval as all attendees were professionals attending in a research capacity, not as participants. All were made aware that the meeting was being recorded for future analysis, and all quotations or comments referred to in this document have been anonymised to respect the privacy of those who

attended. The ICSmoke database collected data from published studies, and as such no primary data collection took place.

Ethical approval for the qualitative multi stakeholder study (Chapter 6) was sought from Liverpool John Moores University ethics committee prior to any research being undertaken (LJMU UREC 19/PHI/037). The MSc on which this was based also gained ethical approval prior to any research being carried out. Due to the nature of the research which involved vulnerable adults, full ethical approval was sought for staff and clients of substance use services, as the process for recruitment and participation were much the same for both stakeholder groups for the PhD study.

3.8.1   Ethical Processes for Study 3: Qualitative Interviews

Recruitment of all participants followed the proposal approved by the Ethics committee, and is described in Chapter 6 in more detail, but the key ethical consideration for this study are discussed here.

Client participants who met the inclusion criteria were initially identified via the service staff, and anyone who was deemed by staff to be unsuitable for group sessions due to aggressive behaviour, intoxication or other potentially disruptive behaviour was excluded. If any participant appeared to be intoxicated and unable to function, visibly unwell or appeared to be in distress, or raised any concerns, the gatekeeper or support staff would be informed, and any research was halted. If necessary, interviews could be resumed at a later date. Due to the nature of the service, it was possible that clients / participants may present under the influence of drugs and or alcohol. Provided they were able to function and to give informed consent and take part in the interview without being disruptive to others then they were considered eligible to take part.

All face-to-face sessions took place at the treatment services, which have reception staff who greet all visitors to the services and could report any potential intoxication or aggressive behaviour prior to allowing the client entry to the service. All services are in secure buildings, with key fob entry and alarm systems. Any potential participants were identified via staff who knew of any additional needs or requirements, and anyone with mental or physical health conditions which made them unsuitable to take part in the research were excluded at this point. If any doubt remained, a discussion with the participant and their key worker (if appropriate) would take place to ensure any risks were minimised. No participants presented with aggressive behaviour and as such these precautions were not needed.

Having worked in the CWAC substance use treatment services, I was aware of the processes in place to safeguard staff and clients attending the services, so I was confident that this would not present any concerns. In terms of deciding who was considered 'functional', staff discretion was used. As

discussed below, one participant did present under the influence of substances, although this was not immediately obvious when he presented at the service. As the interview progressed, it became clear that he was intoxicated, and he disclosed having taken some 'medication' earlier that day. In this instance, the participant appeared to appreciate the opportunity to talk to someone, so I felt that it would be more harmful to him to disengage at that point. I was fortunate in that I had received extensive training on risk management and positive behavioural strategies for keeping myself and others safe when I worked in the CWAC services and was aware of the emergency protocol at the service should that have been necessary.

Reflections after a participant interview:

Today's interview left me reflecting on my multiple roles and positionality within the research. My current and previous roles working within substance use services and related organisations mean that many of my participants know me and have some ideas about my background. Some who know me as a member of staff in one organisation or another are sometimes surprised to find out about my other roles or positions. Today's participant, despite knowing me in multiple roles for some time, appeared to be under the impression that I was a medical doctor. This put me in a difficult position as he asked for medical advice, to which I suggested he see his usual GP, who I know professionally. He seemed happy with the suggestion and appeared to enjoy the interview, although the usefulness of it for research purposes is yet to be determined; he was under the influence of something. His words slurred slightly and he was a little confused at times, but wanted to continue the interview and I was not concerned for his safety or my own. I did alert a member of staff as we finished the interview, who had a chat with him before he left the building, so I felt reassured by that.

In this situation, my prior relationship with participants was both a help and a hindrance – the participant was willing to take part because he knew me and wanted to talk to me, and my knowledge of him and his behaviours made me feel comfortable in what could have been a difficult situation. However, an impartial researcher may have had a very different and less personal conversation (the participants segued into a discussion about his GP and family members, which were not included in the transcripts). This encounter made me think differently about my multiple roles and the blurred lines between them, as I'd previously seen this as a purely positive aspect of my research.

3.9 Analysis

A detailed description of each of the methods used for data analysis are presented in the corresponding chapters.

The reflective thematic analysis used in Study 3 is described in detail Chapter 6, where data analysis was conducted using a reflexive thematic analysis (Braun and Clarke, 2021). This approach was chosen as it accepts and supports the fact that the researcher's position is necessary, unavoidable, and an integral ingredient of the analytic process. It is also a theoretically flexible approach, which suits the pragmatic, recoverist approach which underpins this thesis.

A broader overview of a generic qualitative approach is given earlier in this chapter, and Study 1 also uses a generic qualitative approach to analyse the qualitative data collected as part of the Delphi study. This study (1) also used an inductive framework analysis (Wood et al., 2015) to code the BCTs mentioned in the meeting transcripts used as the data source for Study 1. This is also explained in more detail in Chapter 4 (Study 1), whereas the concepts of behaviour change and how BCTs contribute to this are explored in chapter 7.

3.10   Rigour and trustworthiness

In qualitative research, concepts of validity and reliability are difficult to address in that same way as in other types of research, although research must be trustworthy to be considered relevant (Adler, 2022) Shenton (2004) and Stahl and King (2020) present a framework to address these issues, using the terms 'trustworthiness' and 'rigour' to better illustrate the criteria in qualitative research. This section will address each of Shenton's criteria in the context of the qualitative study conducted as part of this PhD research (Study 3).

The *credibility* of research seeks to explore the congruence of study findings with reality (Merriam, 1998). As this study was informed by and built upon an earlier study (Swithenbank, Harrison and Porcellato, 2022), it had a strong foundation in established research methods and pre-existing findings about the study population. Shenton also suggests that familiarity with the culture of participating organisation can be beneficial in establishing the credibility of the research, as it enables the researcher to gain an understanding of the organisation and to build a rapport with participants or the organisations. Again, as this research built on previous work, and was primarily conducted in services where the researcher had worked, this was already an integral part of the study.

Due to challenges associated with recruitment (Bricca et al., 2022), purposive sampling was used in this study, despite arguments against the use of this type of sampling to improve research credibility. There is potential, therefore, that the sampling process introduced bias, as is the fact that the researcher was known to some of the participants. It was felt however that the benefits of the pre-existing relationships and the researcher's knowledge of substance use treatment services would outweigh this concern and allow access to traditionally 'hard to reach' participants who might otherwise not be able or willing to take part. Ethically considerations are discussed elsewhere in this chapter, but it is important to note here that only participants who expressed interest in taking part were included and were able to curtail the interview at any point. This contributes to ensuring honesty in participant interviews, as does the rapport developed throughout the recruitment and interview processes. The role of the researcher is another key element of research credibility. Although this is discussed in detail elsewhere (Chapter 1), the credibility of the researcher in terms of background, qualifications and experience are all important to acknowledge. The reflective commentary included throughout this document illustrates the reflective processes that were undertaken throughout this PhD.

Shenton (2004) also discusses the importance of triangulation in assessing research credibility, suggesting that the use of a wide range of informants can strengthen the study's credibility. This PhD uses a range of participants and data sources to allow for a deeper exploration of the topic and to enhance the overall credibility of the research. Interviewing both staff and people accessing treatment services allows for corroboration of facts and perspectives presented by participants, as does the inclusion of participants from a range of services. This perhaps also provides a diversity that would not be possible when focusing solely on one location or organisation.

Although *generalisability* is not the aim of qualitative research, transferability of data and findings are important to consider. The findings of Study 3 of this PhD are specific to a small number of participants and a specific context, it cannot be assumed that they are applicable to other populations or locations (Shenton, 2004). When analysing the data, it was important in this study to acknowledge contextual factors or limitations which may limit the applicability of findings, and to highlight themes or issues which were more broadly applicable. In order to address the boundaries of the study, important contextual information is given, including participant characteristics, data collection methods employed, number and length of data collection sessions, and the time period over which data was collected. This contributes to the transparency around the boundaries and limitations of the data and the findings and therefore their trustworthiness.

Similarly, the *dependability* of the study is illustrated by the clear and thorough description of the methods used. Although this cannot guarantee that the study would be reproducible, due to the nature of qualitative research, it strives for transparency in the approach used to demonstrate dependability. In Chapter 3, the study processes are described in detail, along with the changes that took place due to the COVID-19 pandemic which took place during the study period.

Qualitative research can never be objective; although steps were taken to ensure that the perspectives and voices captured were those of the participants, the role of the researcher cannot be ignored, nor can the subjectivity that embodies. To address this, and to add to the confirmability of the research, the reflective commentary was produced and included in this document. Research methods and methodology are described in detail, with justification and rationale for each choice that was made during the research. This chapter aims to inform the reader how and why the research was conducted, and to offer transparency of process, as well as an acknowledgement of the limitations of the research.

3.11   Summary

Methodological considerations are essential to any research project, and this chapter has described the methodological approaches of the PhD overall, and the methods used in the different studies. The ICSmoke study provided data that were exploited in various secondary data analyses. The figure below describes how the data feeds into the PhD study within a methodological process map.

Figure 7 **Methodological process map.**
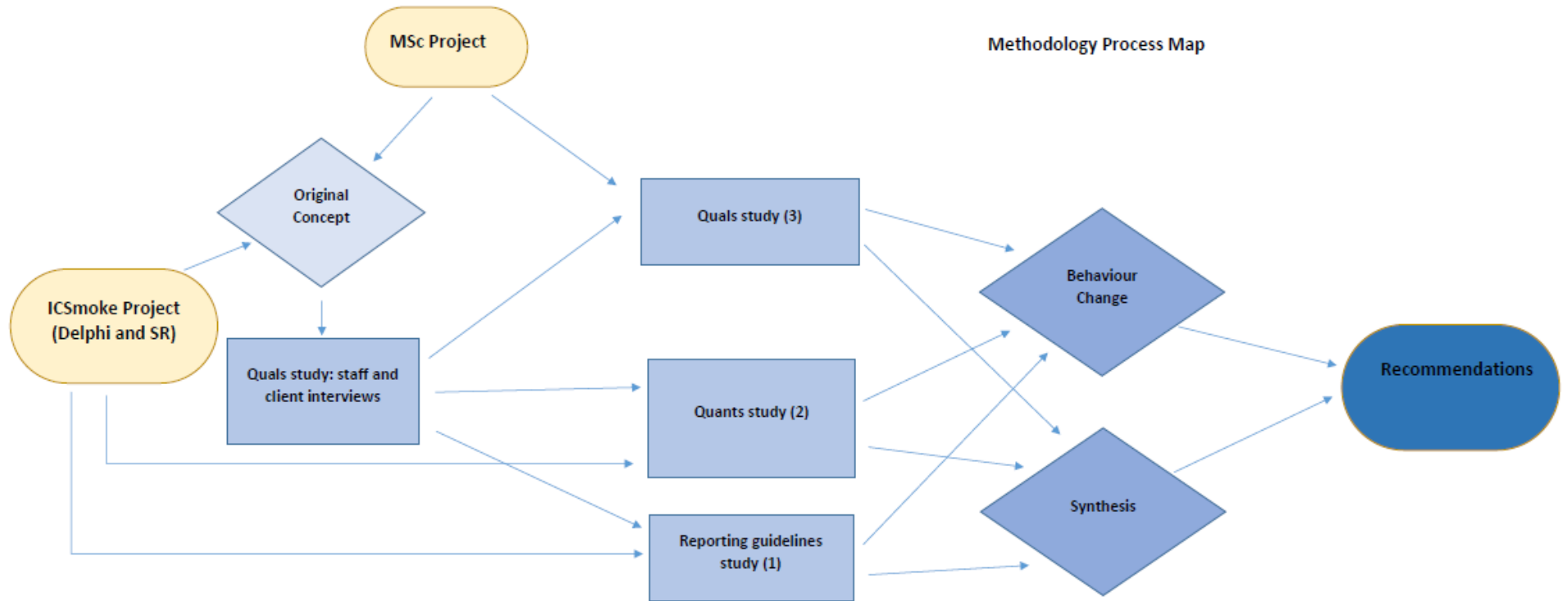
As can be seen from Figure 7, not only did the learning from a previous MSc project and the ICSmoke project inform the development of the original concept of this PhD study, but data arising from the PhD student's work on those was exploited within the secondary data analyses. Following a pragmatic paradigm, this thesis brings together a range of methods, both quantitative and qualitative, to best answer the research questions and to explore a range of different perspectives on the same phenomenon.

The subsequent chapters will present each of the studies which make up this PhD, and include more detailed accounts of the methods used, results and discussion from each individual study. The following chapter discusses Study 1: Reporting guidelines.

Chapter 4   Study 1: Reporting guidelines in smoking studies

4.1 Introduction

Reporting guidelines are useful for ensuring replicability and rigour in design and reporting of trials yet are by their very nature broad and non-specific. Whilst work has been done on the implementation of guidelines such as the CONSORT-SPI (Swithenbank et al., 2024) in smoking cessation trials, many of the recommendations made by experts may present additional challenges when implementing them in research with specific populations, such as those in substance use treatment.

As discussed in Chapter 3, the expert consensus meeting formed one study of the second phase of the ICSmoke project. The original project identified many areas where the reporting of trials was suboptimal, and many areas where this could be improved. One way of doing this was to develop an updated and specific set of guidelines for trialists of smoking cessation studies. These have since been published as the CONSORT-SPI-SMOKE (Swithenbank et al., 2024) and are described in more detail in the following chapter.

4.1.1 Aims and objectives

This study aimed to:

Critically analyse 'evidence' on behavioural smoking cessation interventions.

Objectives:

- To examine how reporting guidelines relate to quality standards
- To examine the implications for trial design.
- To carry out a more detailed, qualitative analysis of the expert meeting.
- To explore how this evidence relates to the context of substance use.
- To explore how this relates to acceptability to different stakeholders.

4.2 Reporting of interventions / studies

One of the key issues relating to evidence on smoking cessation studies, and identified from the ICSmoke project, was the poor quality of reporting in randomised control trials for behavioural interventions for smoking cessation. This was true of many aspects of trials and interventions, but especially so in the reporting of the behavioural components of the interventions. Behaviour change interventions are generally not well described, and the terminology used to describe them is inconsistent. This makes it difficult to replicate interventions and limits the introduction of subsequent interventions. In order to offer better evidence of what interventions work, and which aspects are effective, better reporting of these is crucial.

This Study aims to examine how reporting guidelines such as the CONSORT-SPI-SMOKE (Swithenbank et al., 2024) relate to quality standards, and what the implications of this are for trial design. Using this example, an analysis of the guidelines as well as the expert consensus meeting which informed them was conducted to explore different perspectives on smoking cessation interventions, and the implications for the context of substance use treatment services.

The ICSmoke project was able to contact all study authors and ask for further information, including a treatment as usual questionnaire and any intervention materials or guides. This enabled the team to code the active components of the interventions as well as more detailed information from both intervention and comparator groups than was readily available in the public domain. The response rate for this was 67% for the first ICSmoke study (Javornik et al., 2022) which was surprisingly high given that the studies were published from year 1996 onwards, and from countries across the globe. This demonstrates that much of the information was actually already in existence, it just hadn't been included in published materials. This is important to note, as there was concern about the new guidelines being too burdensome for trialists to follow. Although the ICSmoke team was able to collect a significant amount of additional data to include in the study database, this was only possible due to the capacity of the project. It took a considerable amount of time and effort to collect this unpublished data, which would not be possible for the majority of studies with smaller budgets and timescales.

Recruitment, retention and engagement with trials with this population are known to be problematic (Bricca et al., 2022), so it is important to explore the acceptability of any trial or intervention to those it targets, as well as staff or other stakeholders who may be involved in recruitment or delivery of the intervention.

Some of the key issues and recommendations were used to inform Study 3: The Qualitative Multi-stakeholder Study that followed to explore the acceptability of these points. For example, objective verification of smoking status was recommended in the guidelines, but this may not be suitable in real-world trials due to the potentially stigmatising nature of requiring biochemical verification. In real world studies, especially with some populations who have additional needs or face additional barriers to accessing services, the therapeutic relationship with those running the intervention is a crucial aspect of the trial / intervention. This is further discussed in the relevant chapter but offers just one example of the differing and sometimes conflicting requirements of trialists and participants.

The results of the Delphi study have recently been published (Swithenbank et al., 2024), but the findings from the meeting and the overall process raised significant issues regarding the challenges of producing a generic guide for smoking cessation trials. Although many of the items included in the guidelines refer to aspects of studies and interventions which already take place and simply require more consistent and thorough reporting, there are some items which require consideration in the design phase of the trial or intervention.

Some aspects of a trial are integral to the design of the intervention being studied and would be included independently of any trial to assess or evaluate the intervention. For example, measuring of outcomes can be used as both an evaluation tool and as an active part of an intervention. Giving a participant feedback on their results can be a motivational aspect of an intervention and is included in the behavioural change taxonomy. Collecting data for the purpose of evaluation of an intervention has a different intended use, and it should be explored whether it may play a role in the intervention as well. It is important to establish which aspects of a study are which, and in both cases to ensure their relevance and appropriateness.

Although the Delphi study completed as part of this project focused on trial design and reporting, those aspects do play a part in the design and implementation of interventions. This Delphi study explored what 'experts' thought were the

most important components of a smoking cessation trial, and how those components should be reported. Although a broad range of expertise was included in the expert panel who took part, it was all from an 'expert' perspective, rather than a lived experience perspective. It is important to note that this expert group did not include experts by experience and the focus was on trial methodology and reporting, rather than intervention development and implementation. However, these reporting guidelines will have an impact on the way in which trials and interventions are delivered.

4.3 Methodology

Further details on the Delphi methodology can be found in the paper recently published in Addiction: *Tailoring the CONSORT-SPI to improve the reporting of smoking cessation intervention trials: An expert consensus study* (Swithenbank et al., 2024). This section outlines the modified Delphi process and expert consensus meeting, the transcripts of which were used as the basis of Study 1.

4.3.1 Background and ICSmoke Delphi study

As a result of the ICSmoke systematic review, the project team identified the need for improved guidelines for the reporting of smoking cessation trials, in order to allow for the replication of interventions and their inclusion in systematic reviews such as the ICSmoke project. An additional review of available guidelines and relevant documents was conducted which highlighted several key papers in this area, including the Russell Standard (West et al, 2005), TIDieR checklist (Hoffmann et al, 2014) and Addiction journal's Paper Authoring Tool (West, 2021), which are all tools for reporting trials, as well as the CONSORT (Consolidated Standards of Reporting Trials) checklists (Moher et al, 2010). It was decided to use the existing CONSORT-SPI (Social and Psychological Interventions) extension (Grant et al., 2018) as the backbone for the new guidelines, based on the rigorous methodology and high standards of the CONSORT checklists. Each iteration of the CONSORT checklist builds upon this methodology and on the previously agreed items, and this update followed the same procedure.

The project team put together a comprehensive list of all the relevant items from the identified papers and tools which could potentially complement the CONSORT-SPI. These items were presented to a panel of experts in an online Delphi study. The results from the online Delphi were presented, discussed and voted on during a physical full-day expert consensus meeting. This face-to-face meeting was held at the Trimbos Institute in Utrecht, the Netherlands, in May 2019. Fifteen experts attended this meeting, where modifications and additions to the CONSORT-SPI were discussed, with the aim of developing an updated set of guidelines for the reporting of behavioural interventions for smoking cessation. Following the meeting, the results and feedback were collated into a manuscript which included a specified version of the CONSORT-SPI (CONSORT-SPI-SMOKE). It was agreed that, rather than presenting the results as reporting *requirements*, these are additional *recommended* items and specifications that should help with the application of existing guidelines to behavioural smoking cessation trials. The final results consist of the CONSORT SPI checklist, with several additional items, changes of wording and the addition of specifications to promote the consistency of reporting of smoking cessation trials.

Additionally, the meeting was audio recorded and transcribed, and this data was analysed using a deductive framework analysis (Wood et al., 2015) to identify key issues from the different stakeholders represented in this expert group.

Analysis of the expert meeting transcripts was primarily deductive, as the analysis aimed to answer a specific research question. The aim of this analysis was to identify any key components or BCTs that the expert panel discussed and presented as important content for smoking cessation trials / interventions. Because this was not the aim of the original research, much of the data was not relevant for this analysis.

Findings from the meeting and the overall process raised significant issues regarding the challenges of producing a generic guide for smoking cessation trials. Although many of the items included in the guidelines refer to aspects of studies and interventions which already take place and simply require more consistent and thorough reporting, there are some items which require consideration in the design phase of the trial or intervention.

Some aspects of a trial are integral to the design of the intervention being studied and would be included independently of any trial to assess or evaluate the intervention. For example, measuring of outcomes can be used as both an evaluation tool and as an active part of an intervention. Giving a participant feedback on their results can be a motivational aspect of an intervention and is included in the behavioural change taxonomy. Collecting data for the purpose of evaluation of an intervention has a different intended use, and it should be explored whether it may play a role in the intervention as well. It is important to establish which aspects of a study are which, and in both cases to ensure their relevance and appropriateness.

4.4 Analysis

Although the Delphi study and expert consensus meeting were conducted as part of the ICSmoke project, the subsequent analysis of the meeting transcripts was done independently of the project, as part of this PhD research. All of the findings presented below are from this secondary analysis of the meeting transcripts and was conducted as part of this PhD and not the ICSmoke project.

The expert consensus meeting was recorded (with permission of all attendees) using a university-owned voice recorder, and the recording was stored on a password-protected laptop before being transferred to a university owned storage system. All recordings were later transcribed verbatim by the researcher (ZS) and files were stored on a password protected laptop. Transcripts were then uploaded into NVivo (QSR International, 2015) for coding and analysis.

A form of framework analysis was used to identify and code the BCTs that were mentioned in the interview transcripts. Wood et al. (2015, p.135) describe the process of BCT coding as *'a deductive process of categorising qualitative information… using an established coding framework and instructions.'*

The framework used here was the BCCTv1 (Michie et al., 2013), which lists 93 BCTs in hierarchical clusters. Transcripts were analysed to identify any behavioural change techniques (BCTs) that were discussed and recommended for inclusion in smoking cessation trials.

This process requires a high degree of familiarity with the BCT labels and definitions, in order to accurately identify and code the appropriate BCTs in the data. In order to ensure this was done in an accurate and systematic manner, the researcher undertook the BCCTv1 Online Training, as well as having experience in coding BCTs in a previous role, which involved working with colleagues who were experienced in coding from the taxonomy and undergoing rigorous checks

to ensure consistency with the coding. In this study, codes were checked by a second researcher to ensure accurate and comprehensive coding was achieved.

As this was not the topic of the meeting as such, there are limited findings from this analysis. However, given the behavioural expertise of several members of the expert panel, and the focus of the review on the reporting of active components of behavioural interventions, it was considered an avenue worth exploring. These BCTs are presented in Section 4.5.1.

Additionally, the data was analysed using a thematic approach (Braun and Clarke, 2013), to identify any key areas relating to the design and implementation of smoking cessation trials. This allowed for a more in-depth exploration of the views and perspectives of the experts involved. Although the use of meeting transcripts as a data source is not a traditionally used research method, this provided a valuable insight into the thought processes and reasoning for the items put forward for inclusion in the updated guidelines which warranted a deeper exploration. Secondary analysis of data such as this can be used in many ways to enrich our understanding and to offer an alternative perspective on the data.

4.5 Results

The results from the transcript analysis are presented below; the first table summarises the BCTs which were recommended for inclusion in smoking cessation interventions. The following sections present the different themes that were identified through the qualitative analysis, with quotes from the transcripts to illustrate the key points.

4.5.1   BCTs

Only a small number (5) of BCTs were recommended through the discussions that took place at the expert consensus meeting. This was not unexpected and the focus of the meeting was not primarily on intervention design but are still worth exploring in conjunction with the other aspects of the analysis.

Table 5   Recommended BCTs from secondary analysis of expert consensus meeting.

BCT number	BCT description
1.1 Goal setting (behaviour)	Set or agree on a goal defined in terms of the behaviour to be achieved
2.6 Biofeedback	Provide feedback about the body *(e.g. physiological or biochemical state)* using an external monitoring device as part of a behaviour change strategy
8.2 Behaviour substitution	Prompt substitution of the unwanted behaviour with a wanted or neutral behaviour
10.2 Material reward (behaviour)	Arrange for the delivery of money, vouchers or other valued objects if and only if there **has been** effort and/or progress in performing the behaviour
11.1 Pharmacological support	Provide, or encourage the use of or adherence to, drugs to facilitate behaviour change

These five BCTs were all mentioned in the expert discussions around smoking cessation interventions as important components which they felt should be incorporated. These were not specifically mentioned in relation to any sub-groups or populations, but it was acknowledged that interventions may need to be tailored to support sub-groups in different ways. These BCTs were broadly regarded as key components to smoking cessation interventions for any or all populations.

Goal setting is commonly used in behaviour change interventions, but this BCTs refers specifically to goal setting in relation to the behaviour, rather than the outcome of the behaviour. In this case, the goal might be related to reducing the number of cigarettes smoked per day or another goal related to smoking behaviours. Biofeedback refers to giving feedback to the participant about the body, using an external monitoring device. For smoking cessation, this could refer to devices which measure heart rate, blood pressure or carbon monoxide levels. This can be an effective way of demonstrating the physical harms and changes to the body caused by smoking (or by stopping). Behaviour substitution refers to prompting to replace or substitute the unwanted behaviour (in this case, smoking) with an alternative, less harmful behaviour. For some smokers, replacing smoking with the use of e-cigarettes or other nicotine replacement devices can be an acceptable substitution, and it addresses some of the psychological aspect of quitting smoking by offering a substitute behaviour rather than requiring the participant completely changes their routines.

Material reward refers to the delivery of money or objects of value as reward, in this case for effort and / or progress in performing the desired behaviour, or not in the case of smoking. In smoking cessation, the act of not smoking, or engaging in a substitute behaviour such as vaping can be rewarded if it relates to decreasing the unwanted behaviour (smoking). Other BCTs refer to different aspects of this rewarding of behaviour, dependent on outcomes rather than behaviours. Pharmacological support refers to the provision or encouragement to use medications to facilitate behaviour change. In this case, there are a selection of medications available to support smoking cessation which are proven to be effective, including bupropion and varenicline.

4.5.2   Themes

The inductive analysis of the meeting transcripts identified six themes and key points for discussion around smoking cessation interventions. Again, as the aim of the expert consensus meeting was to update and further specify reporting guidelines for reporting of smoking cessation trials, these discussions were not the primary focus of the meeting but still yielded some important findings and areas for further exploration. It also offers an insight into the perspectives of this group of experts into interventions for smoking cessation and can provide a complementary view to the other stakeholder perspectives that are discussed in further chapters of this thesis.

Some of the key discussions from the meeting which are relevant for this study were around the conflicting priorities of different stakeholders, and the importance of balancing these to ensure acceptability; methodological and reporting challenges; recruitment and retention in studies; study outcomes and how these should be prioritised; and fidelity to intervention protocols. Argument about the importance of research / trials and replicability, validity etc vs efficacy and acceptability by various stakeholders. These are discussed in more detail in the following sections.

Acceptability of interventions

Acceptability can be considered in many different contexts, and the differing priorities and perspectives of different stakeholders need to be balanced to ensure the success of any intervention or trial. For researchers, the study needs to be acceptable to those funding the study, those taking part, and those publishing the findings. This can prove challenging and is representative of a bigger issue across healthcare research. The CONSORT-SPI-SMOKE reporting guidelines try to take into account these differing perspectives and offer a more pragmatic approach to trial design and reporting which may be more appropriate for some populations, including PUWD/A.

In terms of intervention acceptability, this is crucial to ensure adequate recruitment and retention to the study. It is also important to balance the burden on participants with the desire for extensive data collection and potentially invasive methods, as some data collection involves collecting samples of saliva, urine or blood which can put some people off taking part. Requiring participants to attend in person to verify their results or have a sample collected can also add to the burden on trial participants. Depending on the intervention setting, this can also impact on gatekeepers or staff in services where participants are recruited from, as they might need to facilitate the researchers' access to participants.

Another stakeholder in this context is the funder or publisher of the study, as they often have specific requirements which researchers or those running interventions need to meet. These may conflict with the participant needs and wants, so the researcher or intervention providers need to address this and find an acceptable compromise. The discussion at the expert meeting was around journals and funders endorsing more pragmatic and acceptable requirements in order to encourage their adoption.

> *'We say if you would be reporting your data set and there's lots of papers who say that you have to do this and there's also journals already requiring it, so we would be able to say you would be compliant with standards for many journals, and it would allow systematic reviewers to make use of it…your data would not be excluded from the future analysis. Something like that, make it motivationally attractive'.*

There was also a concern that adding to the expectation or requirements of trialists of intervention providers would increase the burden on them and make studies more challenging:

'there'd be a lot we could do if we had more time and money'

'we're taking their trial team resources away from their core aim, which is to run the trial to provide clinical evidence'

As one participant mentioned, trial teams have the core aim to gather clinical evidence and have finite resources to do so. Adding to the requirements for trials could prove problematic and decrease the amount of available evidence, which is contrary to the aims of the CONSORT-SPI-SMOKE and this study.

Reporting of smoking cessation trials: areas for improvement

Given that reporting of trials was the focus and aim of the expert meeting, it is unsurprising that there was a great deal of discussion about not just how reporting should be improved, but why and for whom. One participant took a pragmatic stance that reporting should enable increased and improved evaluation and evidence contribution, which is needed, and the aim of reporting guidelines should be to facilitate this.

> *'if we're talking about reporting, we need these things to be reported or evaluated in some way, because otherwise we'll never have the evidence. So we can say some things, but all of it really boils down to we don't have much evidence right now. What we really need is more evaluation. And we could give pointers to the things that are most in need of evaluation based on the fact that they are used often'*

Improved reporting should improve the evidence base, although this may perpetuate the issues with the existing evidence base in relation to sub-groups of the population who may be less suitable for RCTs and clinical trials. However, better reporting on intervention components should contribute to increased understanding of effectiveness of the interventions.

> *'it seems that the more complex interventions…tend to be compared against the more complex control groups and the simpler interventions, eHealth interventions, self-help type of interventions tend to be compared against control groups who receive very little. So basically when you want to make the decision, should we implement this group based intervention or self-help intervention? Or maybe a short individual counselling? You first need to standardize these comparators.'*

The ICSmoke study and database aimed to examine both intervention and comparator groups in detail, to better understand how the choice of comparator effects outcomes and effectiveness measures. This work is ongoing, but as one participant stated (above), it is important to explore this issue to gain a more in-depth understanding of trials and interventions. This is a key area for reporting improvements which was recommended in the CONSORT-SPI-SMOKE and is about the reporting and justification for comparator groups so that this additional work can be done.

Another issue with reporting is the definitions used in different studies. In relation to PWUD/A, these were reported in very different ways, and can make identification and comparison across and between studies difficult. There were few studies within the ICSmoke database which targeted this sub-group (N=11), and due to their scarcity, they were put into one category (substance use), rather than differentiating between alcohol or opiate use, for example. This is an issue with the database and was due to the low numbers of studies which focused on these groups but does highlight the nuances and variations in and between people who use specific substances.

Outcomes

Another important issue which is relevant for this study is that of outcome measures. The ICSmoke database used only studies which utilised biochemical verification at a follow up of at least six months, which was done for pragmatic reasons due to the nature of the review, but this is indicative of expectation and perceptions about the 'best' outcomes to measure, and the most appropriate ways to do this. As one of the experts discussed, there are other important outcomes besides smoking cessation at six month follow up:

> *'so it is a very important issue to distinguish the type of intervention to look at the relapse curve because the main issue is the length of efficacy, not just one point. Therefore, I'm saying the clinical significance is the main issue. It's not simply because at the end there is health, not just smoking cessation.'*

The length of abstinence achieved is important, as many interventions may prove to be effective only in the short term and may result in continued or even increased smoking in the following months or years. Using different timepoints to compare across studies may however mean that studies are incompatible, although there is an argument that any collected data has uses, and the sharing or making available of this data, with the relevant information adequately reported, may be useful for comparisons with other studies and can reduce the burden on both trialists and participants by reducing the need for repeated studies.

The types out measures used were also the subject of much discussion, as some expressed a preference for point prevalence vs sustained abstinence as the gold standard of evidence measure. Although this is a fairly minor point, the differences in how outcomes are measured can have an impact not just on effectiveness outcomes, but also on acceptability of the intervention and / or the study to participants. There was much discussion about which other outcomes to include in the reporting guidelines, and it was acknowledged that abstinence is not the only positive outcome. As a result, the CONSORT-SPI-SMOKE also recommends the reporting of reduction in cigarettes smoked per day, if available, and how this was measured.

Insisting on biochemical verification can be off-putting, as discussed above, but also because it can give the participants a sense that their own self-reported results are not believed or taken to be definitive. This can have impacts on the relationships and sense of trust which can be essential for maintaining engagement with trials, and for improving outcomes. Ultimately, the wording of the CONSORT-SPI-SMOKE states that outcomes should be reported including type of biochemical verification, and a justification if this was not done. This allows for a more flexible approach and is in keeping with the ethos of the guidelines which was to improve reporting and available evidence, not to be unduly prescriptive and limit trialists.

Engagement and retention

As well as building relationships and a sense of trust, there are many other aspects which can influence engagement and retention in interventions and trials. A common idea in smoking cessation (and many other) trials is that participants drop out because they have 'failed' in their quit attempt. As one participant discussed, this is often far more complex than is usually acknowledged.

'When we devised the Russell standards it was based on a fair amount of evidence from clinical trials that if people refuse to answer your phone calls or come to your sessions or whatever it was because they've gone back to smoking. I don't think that's true…or it's not true for a lot of kinds of interventions …there is a sort of thing that you do where highly motivated and a lot of personal contact, big investment on the part of the patients. Once they've failed that they didn't want to get in touch with you because of all sorts of emotional things. When you're looking at an app or a telephone intervention, it's not necessarily the same thing, and so.'

Instead of exploring the reasons for trial disengagement, it is assumed that the participant who dropped out is still smoking. There may be different reasons for the disengagement, and this may have very little to do with their smoking behaviours. For interpersonal interventions, it is important to establish and maintain rapport with participants both to encourage retention and to improve engagement and hopefully improve outcomes. This is an area which could be further explored to improve the participant experience but also to improve trial reporting and accuracy.

'the current way of data imputation which is missing its failure is that that is maybe not optimal'

Several of the participants at the expert meeting discussed this assumption and that the 'missing = failure' may not always be accurate, leading to fluctuations in the data and effectiveness measurements. It was suggested that people may drop out of a study because they have already got what they need from it, in this case they may have quit smoking, or may have the tools that they need to continue on their own, rather than necessarily have abandoned the quit attempt.

Fidelity

Some trial or intervention aspects are especially hard to measure or identify, such as personal style and relationships as mentioned above. An important aspect of intervention delivery and trials is fidelity. In terms of interventions, fidelity refers to 'the extent to which an intervention is delivered and implemented as intended or as per protocol' (Dusenbury *et al* 2003) and is important to understand the mechanisms of impact in a trial, which is crucial for replication (Ginsburg *et al* 2020). This is unusual to smoking cessation trials, as one participant highlighted:

'to be fair in other areas of psychological treatment that is routine. You know it's like you wouldn't do this. You wouldn't be allowed to publish a study unless you said that the counsellor or whatever did what they were supposed to do, and you had some check to see where they did it. So we're a bit behind, probably in smoking cessation.'

Although fidelity reporting is complex and beyond the scope of the reporting guidelines, it was agreed that this is an important element of trial or intervention reporting and design. As discussed earlier, interventions are made up of more than just the individual components or BCTs, and there are many other aspects which could be reported or incorporated in interventions to enable a better understanding of how and why they work (or do not).

4.6 Discussion

This study aimed to critically analyse evidence from an expert consensus meeting, in order to explore different perspectives on smoking cessation; to identify issues with existing evidence; to identify effective and acceptable BCTs;

and to identify other aspects of interventions which are effective and acceptable in the setting of substance use treatment services.

The BCTs which were identified as part of this study though a deductive framework analysis, although a small number (N=5), are ones which do not rely on agency or autonomy of participants (Michaelsen and Esch, 2022; Hagger and Hardcastle, 2014). Autonomy refers to an individual's self-governance, and the freedom to make choices without external control or influence. This is often related to self-determination, and to the ability to regulate one's own behaviour. Agency refers to the capacity to act and make to choices, whilst acknowledging the social and cultural contexts which shape those choices. Agency is related to empowerment and effecting change and making a difference in the world.

Although goal setting is generally done with the participant, the BCTs is defined as 'set or agree on a goal', rather than an individual setting their own goals and taking ownership of the quit attempt. Likewise, biofeedback and material rewards both require outside input and rely on others to provide the reward or the feedback to the participant. Pharmacotherapy also usually requires a prescription or has a cost, which present additional barriers but also need the involvement of a health professional to provide the medication. Whilst all of these BCTs can be supportive if they are delivered in such a way, the emphasis is on external support and prescriptive techniques rather than ones which support agency and autonomy through intrinsic motivation.

In recovery, both autonomy and agency these are important and distinct concepts. Treatment which respects and supports agency and autonomy of the individual is reflective of a person-centred discipline. Autonomous motivation reflects willingly engaging in behaviours for self-endorsed reasons and is consistently related to sustained behaviour change (Hagger et al., 2020). Autonomous motivation can be promoted by social agents through the provision of choice, acknowledging conflict, avoiding controlling language, and external reinforcers, and fostering personally-relevant goals

Substance use treatment can present something of a paradox in relation to autonomy of the people accessing services. On the one hand, service users are expected to take ownership of their substance use, often by self-referring to services and being proactive in accessing support. On the other hand, once admitted to services, there is an expectation of prescriptive engagement with the process which leaves little room for autonomy and personal choice.

Interventions are about far more than the BCTs which they incorporate, and there are important aspects which are difficult to capture but can have huge influence in the delivery and effectiveness of both the BCTs and the intervention overall. Hagger and Hardcastle (2014) present the idea of interpersonal style, and its importance to the effectiveness of interventions. This goes beyond the mode of delivery, and instead focuses on the style of delivery, which may include language used, interactions between providers and recipients of the intervention and other aspects of the delivery which are harder to measure or describe. This is important to consider when developing interventions for any population, but even more so in PWUD/A where trust and interpersonal relationships are so important (Ogden, 2016). Other non-reported aspects such as attitudes, interpersonal style and group dynamics can have a significant influence on the experiences of participants, as well as their recruitment and engagement with the interventions (Santa ana et al., 2017).

In line with improving longer term health outcomes, the aim of smoking cessation interventions is, or should be, longer term changes to behaviours and the associated outcomes. An intervention or treatment programme is usually time limited, but a successful intervention can establish a positive mindset which will have an influence on the individual long after the programme has ended. These can also have influences on their peers and others they come into contact with, either by acting as a role model or by sharing experiences and offering support (Kelly et al., 2019).

As discussed in Chapters 1 and 2, recovery can be a long process and one aspect of that is improving both mental and physical health (SAMHSA, 2012). Assessing only short-term outcomes or a dichotomous quit / fail outcome ignores the more nuanced elements of the recovery process. Studies on reporting outcomes for substance use often follow this framework, with success of treatment being measured by abstinence at set period of time following treatment exit, often 6 months (Ganavadiya et al., 2018). This ignores that fact that recovery takes time and enforces the stigmatising and demoralising concept that participants have failed if they do not remain abstinent at this pre-defined follow up point. It also fails to acknowledge that abstinence may not be the personal goal for all participants. Although no level of tobacco use is safe, the effects of tobacco smoking are dose related, so a harm reduction approach which endorses the use of alternatives such as vaping, or the acceptance of alternative outcomes such as a reduction in cigarettes smoked per day may be more suitable for this population (Hall, 2005).

Whilst it is important to specify the outcomes of interest for a study, it is also important to accept that there may be many outcomes, and a variety of mechanisms by which these come about (McKelvey, Thrul and Ramo, 2017). The outcomes which may be of interest and relevance include: broader health outcomes; engagement and participation with the intervention; sustainability of changes; changes in motivation and self-belief. Service related outcomes could also be measured, and compliance or engagement could be encouraged via the substance use treatment services and encouraged engagement with other offerings of the substance use treatment services. It is worth considering that any effort on the part of the substance use treatment services may have a spillover effect, as resources may be redirected to support smoking cessation efforts and could impact on delivery of other support. Encouraging smoking cessation for people who are not interested may be off-putting and could discourage engagement from all aspects of substance use treatment services.

From a recoverist perspective, focusing on abstinence-based outcomes, or even limiting the outcomes measured to those directly related to smoking cessation, fails to take into account the holistic, individual nature of recovery. As discussed, recovery is a long term and ongoing process, which is not taken into account with short-term, abstinence-based outcome measures. Short-term results may be much more gradual and form part of a wider shift in the individual's recovery journey, building upon smaller, more achievable goals and working towards a longer-term goal. Likewise, the broader outcome measures around quality of life and self-belief may be equally important in contributing towards smoking cessation, as well as working towards self-defined recovery outcomes.

The reporting guidelines offer recommendations for an ideal world scenario, where collecting high quality data is of the utmost importance. Although the need for quality, reliable data is not disputed, the priority for smoking cessation studies, especially in this population, is to encourage smoking cessation and to improve the evidence base to support this. Collection of additional data such as reduction in cigarettes smoked per day or beliefs about motivation and ability

to quit smoking can be used to support evidence of intervention effectiveness and may be more appropriate for this population.

An additional barrier can be presented by the inclusion or insistence on biochemical verification of smoking abstinence (Swithenbank et al., 2024). Whilst it can be argued that this offers the most reliable measure of smoking cessation, the methods used to gather this information can be perceived as stigmatising. For many in substance use treatment services, the regular testing for drugs or alcohol via urine or breath samples is an expected part of engagement with substance use treatment services. However, being forced to provide a sample can be disempowering, as it reinforces the power imbalance and implies that the participant cannot be trusted to give an honest answer about their substance use. Whether or not this approach should be used is debatable and reflects another example of the challenges faced int trying to balance the needs and priorities of different stakeholders (Marchand et al., 2019).

As mentioned earlier, this need is further complicated by the requirements of journals and funders to deliver trials or interventions in a certain way in order to receive funding or to publish study findings, which are essential for improving and expanding the evidence base. There is a particular need for studies and evidence on smoking cessation in PWUD/A, and these additional requirements can present barriers in producing studies or interventions which are considered 'high quality' and that would be included in evidence reviews.

4.7 Conclusions and recommendations

Good reporting is highly important for many reasons. It can enable the identification and replication of trials and aspects of trials which aren't examined, such as recruitment. This is crucial for understanding more about how interventions work, and why. By reporting what is already being done, there is very little additional burden on either trialists or participants, but hopefully more data will become available which will increase and enhance the evidence base. In order to compare across studies, populations and sub-groups, we need standardised outcome measures, as well as ways of reporting study demographics and sample characteristics that can be easily implemented and reported across disciplines. This is important to encourage a more open dialogue between stakeholders, and to agree on pragmatic but appropriate and effective ways to deliver and report interventions. Feasibility, acceptability and attrition are important to help reduce poor health outcomes as well as well-designed trials.

4.8 Strengths and Limitations

This study explored some of these intervention components through the lens of trial reporting, which can be useful to provide a different perspective. This was useful in the context of this PhD as it contributed to the aim of exploring the evidence base and perspectives of multiple stakeholders. In terms of the suitability of the evidence base, the example used in this Study highlights the lack of applicability and relevance for this population, and how little the perspectives or needs of PWUD/A are considered in this type of research.

However, there are many additional factors which would be of interest to explore further were there more available data and better reporting of existing trials. This study is based on a systematic review of RCTs and a Delphi study of expert in their fields, all of which offer a very high standard of evidence. Despite this, for this population at least, all have

their flaws and are limited in their utility. A fundamental flaw with all of these methodologies is the lack of lived experience involvement, and as such none of the findings take into account the perspectives or preferences of PUWD/A.

The experts included in the Delphi study did not explicitly include smokers or former smokers, which represents a limitation of the study. This is discussed in the published findings (Swithenbank et al. 2023), along with the details of the experts who were included and the lack of diversity in the sample. Experts from a geographically diverse area were invited to take part but many were unable or unwilling to attend the meeting. With the development of new technologies and advances in ways of collaborating digitally, this may have been more successful in the post-pandemic world. The lack of lived experience involvement serves to reinforce the need for a shift in research approaches and hierarchies, and to challenge the concept of who is an 'expert' and which views should be included in studies such as these.

The next stages of this thesis will continue to explore different perspectives on smoking cessation interventions in substance use treatment services, and how these perspectives can be brough together to offer a more holistic and mutually acceptable approach for intervention design and delivery.

4.9 Summary

The overall aim of this study was to critically analyse 'evidence' on behavioural smoking cessation interventions, and this was done through the qualitative analysis of secondary data sources, using transcripts from an expert consensus meeting to determine and agree reporting guidelines for smoking cessation studies, and the guidelines (CONSORT-SPI-SMOKE) that were produced as a result of the consensus meeting. 5 BCTs and other important intervention components have been identified that this source of evidence recommends as important for inclusion in smoking cessation interventions, although the relevance and applicability of this evidence to subpopulations, notably PWUD/A are limited.

Table 6   Summary of Study 1.

Objective	
To explore the different perspectives of multiple stakeholders on smoking cessation in this setting	This has been addressed via the analysis of expert opinion and a systematic review of existing smoking cessation trials.
To identify issues with the existing evidence on smoking cessation and how it relates to this setting	Systematic reviews, randomised control trials and Delphi methodology have been discussed and limitations identified in relation to this population, particularly the issues with biochemical verification of abstinence.
To identify effective and acceptable behavioural techniques for inclusion in a future intervention in this population	Five BCTs have been identified as recommended for inclusion in a future intervention, although these have not yet been assessed for acceptability: 1.1; 2.6; 8.2; 10.2; 11.1
To identify effective and acceptable aspects that should be included in a future intervention	Other intervention components such as mode of delivery, outcome types and measures, fidelity, as well as key concepts of agency and autonomy have been identified.

Chapter 5 Study 2: Quantitative analysis of intervention components

5.1 Introduction

This study uses quantitative data from the ICSmoke systematic review project database (de Bruin, 2016) to explore if and how the components of behavioural interventions for smoking cessation differ if they target people who use substances compared with the general population. This is important to assess whether people who use substances receive the same type of support for smoking cessation as people who do not. A more nuanced approach to intervention design and delivery must be taken to produce appropriate, acceptable and effective smoking cessation support for people who use substances, in order to reduce the inequalities and excess morbidity and mortality related to smoking. People who use substances are traditionally seen as 'hard to reach', and a tailored and targeted approach may be necessary to improve availability of smoking cessation support. However, the components of smoking cessation interventions are often poorly reported, especially in this group. This study aims to explore the components of smoking cessation interventions for people who use substances, and how these differ from interventions for people who don't use substances to try and address some of the variations in outcomes and retention in smoking cessation studies.

5.1.1 Rationale and objectives

Evidence on smoking cessation for PWUD/A is limited, and much of the relevant policy and interventions rely on evidence which is not tailored to this population. This study uses a large systematic review database to explore the differences between interventions which are delivered to PWUD/A when compared with the general population. This is important to highlight as there may be bias (either conscious or unconscious) in what interventions and intervention components are being delivered to PWUD/A. It is also important to identify that there are significant variations in the content of interventions being delivered, and that further research is needed to address this. Basing interventions on evidence which is not relevant or appropriate to their audience is likely to limit their effectiveness as well as their acceptability to those they are designed to help.

The aims and objectives for this study are as follows:

Aim

- Critically analyse evidence from a dataset of randomised control trials of behavioural interventions for smoking cessation.

Objectives

Main objective

- To explore the feasibility of using the ICSmoke database to examine the content of interventions for smoking cessation used in interventions delivered to PWUD/A.
- Consider the characteristics which are more or less likely to be present within published evidence on smoking cessation in substance use.

- Explore the implications of this, and how this relates to acceptability.
- Examine the characteristics of studies which meet agreed quality criteria for systematic reviews.
- Explore studies in terms of the behaviour change taxonomy.

5.1.2 ICSmoke

As discussed in Chapter 3, the ICSmoke project is a methodological systematic review of studies of behavioural interventions for smoking cessation. Using the Cochrane TAG database, 172 studies were identified for inclusion in the review. Inclusion criteria were focused and specific, and included:

- RCTs with a minimum follow-up period of 6 months
- Interventions directed at adult smokers (defined as those over 18)
- Trials describing (1) behaviour change interventions with or without pharmacotherapy compared to (a) different behaviour change interventions with or without pharmacotherapy, (b) treatment-as-usual with or without pharmacotherapy, (c) pharmacotherapy alone, or (d) no treatment.
- Biochemically verified smoking cessation rates (primary outcome) reported at least 6 months after the start of the intervention.

For a more detailed account of the ICSmoke review process see Appendix G. My role in this is explained in Chapter 3. The extensive review process produced a database containing detailed information on each study including availability of data from either public or private sources. To supplement the available data, authors were contacted and asked to complete at treatment as usual (TAU) checklist and supply any additional study materials. Extracted data included outcome measures at all timepoints, delivery information and active components of behaviour change for both the intervention and the comparator groups, as well as TIDieR data (Hoffman et al., 2014), demographics and pharmacotherapy data. Data on the intervention components was extracted and coded for each study using the Behaviour Change Technique Taxonomy Version 1 (BCTTV1), as outlined in Michie et al. (2013).

Although the ICSmoke project included all populations over 18 years of age, substance use was an extracted characteristic, and as such enabled the identification and analysis of trials which focused on smoking cessation in adults who used substances (either drugs or alcohol). For this review, substance use was coded as a subset of mental health. All trials which focused on people with any form of mental health condition were coded as such, and then this code was further expanded to identify if the mental health condition was: substance use; depression; PTSD; psychosis; schizophrenia; or mixed (if the study included a range of mental health conditions).

In order for the study to be coded as a mental health or substance use focused study, the majority of the participants had to have this condition. For substance use, all of the studies coded as this included substance use in their inclusion criteria. Settings and target populations for the studies varied, and included outpatient alcohol treatment, opioid substitution treatment, residential substance use treatment and those recently discharged from treatment or in early recovery from alcohol and or drug use.

Because the ICSmoke systematic review extracted data from each study arm within each trial, there were 101 study arms which focused on people with mental health disorders, and 42 study arms which focused on people with substance use disorders. Study arm is the unit of analysis for this study. As the numbers of studies focused on people who use substances was fairly low, all analyses were also run on the mental health focused studies. Although a separate population with distinct needs and characteristics, there are many comparisons which can be made between people with mental health disorders and people with substance use disorders.

5.1.3 BCTs

One key aspect of the ICSmoke project was the coding of active content of both intervention and comparator interventions. In other reviews, interventions are often grouped based on fairly broad and heterogeneous characteristics that do not describe intervention content in sufficient depth. Currently, systematic reviews only rarely focus on the active content of behaviour change, called behaviour change techniques (BCTs). BCTs constitute the active ingredients of interventions which are capable of inducing change in behaviour in appropriate circumstances (Michie et al., 2013). An extensive research programme has developed taxonomies of BCTs (with precise labels and definitions) which achieve good reliability in coding BCTs from behaviour change intervention descriptions (Michie et al., 2015). This work includes a taxonomy for smoking cessation interventions and studies examining how these can be reliably applied. Michie et al. developed these BCTs into a taxonomy, which offers a clear and consistent approach for identifying and classifying components of behaviour change interventions. The Behaviour Change Techniques Taxonomy v1 (BCTT v1) includes 93 distinct and non-overlapping, clearly defined BCTs, ordered into 16 groupings by function.

The ICSmoke project conducted detailed content coding of behaviour change interventions for smoking cessation, using the behaviour change taxonomy version 1 (BCTTV1). This approach was also used for comparator groups within trials. Comparator groups often also receive behavioural that may vary considerably in content and effectiveness. This data extraction was completed by two researchers and results compared to ensure accuracy and consistency.

5.1.4 Effectiveness

Another aspect of the ICSmoke project included analysis of effectiveness of specific BCTs, and specific clusters of BCTs. A separate study by Black et al. (2020) used the ICSmoke database to examine effectiveness and the findings from that research inform part of this study, which explores the use of the most effective BCTs and how their use in smoking cessation interventions varies between substance using and non-substance using populations. Effectiveness of an intervention is the most important aspect, with outcomes which measure this the primary outcomes for most studies in smoking cessation. The parameters for assessing effectiveness of intervention components used in this study are taken from the Black et al., study, which used the ICSmoke database to identify effective BCTs and clusters of BCTs. Three BCTs were identified as being particularly effective: 1.9 (Commitment), 10.4 (Social reward); 13.5 (Identity associated with behaviour change).

Effectiveness is not just related to the BCTs in the interventions, but also to the mode of delivery, person delivering the intervention, intervention materials and many other factors. Acceptability is also an important factor, as acceptability to

the participant receiving the intervention can impact on both recruitment and retention and make the participant more likely to engage with the smoking cessation process.

5.2 Methods

5.2.1 Background

Using the ICSmoke2 database, a subset of the data was created which includes, for each study arm, the population it is applied to (mental health, substance use, neither), study variables (see below) and whether or not each of the 93 BCTs were coded as included in that study arm or not. Variables included in the dataset are:

- Population (mental health, substance use, neither)
- Nicotine dependence (Fagerstrom test, imputed where necessary from available data)
- Cigarettes smoked per day (CPD)
- Intervention mode of delivery
- Provider of intervention
- Setting of intervention
- Use of pharmacotherapy (any form of medication provided or offered to support smoking cessation)

5.2.2 Unit of analysis

ICSmoke2 included 172 studies, because the studies were all randomised control trials (RCTs) they had multiple arms. Data was extracted and coded for each arm of each study. The table below summarises the data, with the number of included studies and arms for each category: total included, mental health and substance use.

Table 7 **Summary of the quantitative data for Study 2: number of study arms included in both mental health and substance use groups.**

	Studies		Arms	
	n	%	n	%
Mental Health	25	14.5	56	13.7
Substance Use	11	6.4	28	6.8
Total	**172**	**100.0**	**410**	**100.0**

Due to the size and nature of the review, there are some missing values in the dataset despite the best efforts of the research team, which accounts for the discrepancies between the total numbers of study arms included in each analysis. As mentioned above, all analyses were run on both the substance use study arms and the mental health study arms, due to the small number of study arms focused on substance use (N=11). The mental health study arms have been included here for comparison where there are not enough study arms to provide any meaningful analysis. The results of the mental health study arms are not included in the next stages of the research; data synthesis was only conducted on the findings from the substance use analysis.

5.2.3   Analysis

Firstly, t tests were conducted on the scale variables to compare both FTND (Fagerstrom test for nicotine dependence score) and mean number of cigarettes smoked per day (CPD). It should be noted that for 19 study arms, the FTND was not available and for 41 study arms, the CPD was not available, hence these treated as missing data within the t-test.

The next stage of the analysis involved comparing the intervention components received by different study arms. The intervention components that were included in the analysis are: the inclusion of pharmacotherapy; delivery of the intervention by a smoking cessation specialist; the setting for the intervention; whether the intervention was delivered in a group setting; the role of the person who delivered the intervention; and the inclusion of the top 3 and the individual BCTs considered to be effective as determined by Black et al. (2020) in their analysis of the ICSmoke database.

All of these interventions were coded during the ICSmoke data extraction and coding process which are described in Appendix H, which did not form part of this PhD research. For clarity, the definitions and specifics of each component are described here to aid the interpretation of the data and analysis.

Pharmacotherapy was coded in the database when a study arm was offered or provided with any type of pharmacotherapy. Further details such as the type offered was extracted (nicotine patches or gum, NRT, Varenicline, Bupropion) and if this was offered or prescribed, and if participants were given a choice of pharmacotherapy options, but for the purposes of this analysis these have been amalgamated and coded as binary yes / no for each study arm. The delivery of the intervention by a smoking cessation specialist was also coded as yes / no for each study arm. This may include anyone with specialist training in smoking cessation, such as a smoking cessation specialist nurse, counsellor or health educator. In order for this to be coded as yes, there must be an explicit statement somewhere in the study materials to that effect.

The delivery of the intervention as a group was also coded and therefore analysed as binary yes / no data for each study arm. There were multiple options for mode of delivery extracted and coded in the ICSmoke database, but group delivery is of particular interest in the context of substance use treatment. This is discussed in more detail in the following sections, but prior research and knowledge of the topic highlighted this as a particular area of interest.

The inclusion of each BCT was also coded as yes / no for each study arm, and each of the 93 BCTs was analysed, as was each of the BCTs identified by Black et al in their analysis of the ICSmoke dataset as being effective. Study materials, including any obtained by contacting the authors were all coded as part of the original ICSmoke project to identify each BCT which was included in each study arm.

For other variables, there were multiple options for each study arm. The person who delivered the intervention refers to the role or occupation of the person primarily responsible for delivering the intervention. There were multiple options in this analysis, including: health educator, nurse, physician, research staff, counsellor or psychologist.

Intervention settings were grouped into three broad categories: inpatient, outpatient and community settings. As with any health research, there were numerous settings in which the research could be conducted, and it was therefore necessary to group these into meaningful and manageable groups. In terms of smoking cessation, the team rationalised

that there would be differences in recruitment and retention in trials when considering those delivered in residential or inpatient settings when compared with outpatient or community-based interventions, and that these three groups would be suitable for making such comparisons.

The results of these analyses are presented below and further discussed in the following sections. In some cases, due to the high number of results, only those which are significant are presented here. Additional results from these analyses including those which did not meet the threshold for statistical significance ($p \leq 0.05$) have not been included.

5.3 Results

The main results of this study are presented in this section. Differences between groups are examined first, focusing on important variables which describe the levels of smoking or dependence. As these can be considered as continuous variables, this is done by comparing means across groups. Characteristics of the interventions are explored next in Table 10, using X^2 tests to compare proportions across groups. Table 11 also summarises categorical data; this time the individual BCTs contained within the reported intervention or groups of BCTs. While Tables 10 and 11 present the results of analyses looking at substance use and mental health separately, they are presented together to allow comparisons between these related groups. Later in this section, the BCTs highlighted as being significant are summarised separately for substance use and mental health, before finally looking at how these relate to groups or clusters of BCTs, as set out within the Behaviour Change Techniques Taxonomy.

Table 8 shows the results of the t-tests which compared the mean FTND scores and the mean number of cigarettes smoked per day of those in the substance use study arms compared to those who were not in substance use arms.

Table 8 **Summary statistics for substance use focused study arms: Fagerstrom Test for Nicotine Dependence and Cigarettes Smoked per Day.**

	Substance Use	N	Mean	Std. deviation	Std. error mean
FTND	No	363	4.9	0.91	0.05
	Yes	28	5.2	0.85	0.16
CPD mean	No	341	19.3	4.62	0.25
	Yes	28	21.3	3.34	0.63

As this table shows, for substance use focused study arms when compared with non-substance use focused study arms, FTND is higher in the substance use arms, although this is not significant ($t = -1.61$, df = 389, $p = 0.054$). Mean CPD is significant ($t = -2.26$, df = 367, $p = 0.027$). Here the standard error column demonstrates that there is more uncertainty in the mean FTND for PWUD/A when compared with those who do not (similarly for the CPD mean). This may, primarily, be due to the low number of studies focusing on PWUD/A.

This suggests that PWUD/A are more heavily dependent and they smoke more than with wider population, which may put them at greater risk of smoking related morbidity and mortality and may pose additional challenges in quitting smoking. Table 9 presents the corresponding analysis for mental health.

Table 9   **Summary statistics for mental health focused study arms: Fagerstrom Test for Nicotine Dependence and Cigarettes Smoked per Day.**

	Mental health condition	N	Mean	Std. deviation	Std. error mean
FTND	No	335	4.9	0.88	0.05
	Yes	56	5.4	0.97	0.13
CPD mean	No	313	19.1	4.60	0.26
	Yes	56	21.3	3.81	0.51

This table shows that for mental health focused study arms when compared with non-mental health focused study arms, the differences in both FTND and CPD are significant. FTND scores are higher in mental health focused arms (t = -4.10, df = 389, p < 0.001) and CPD scores are also higher (t = -3.34, df = 367, p <0.001), again suggesting that people with a mental health condition both smoke more and are more heavily dependent on nicotine than those without.

The table below shows the results from the analysis of intervention components by study arm. It includes the number, percentage and p value for both mental health and substance use focused study arms when compared to studies targeted at the general population. Only results which are statistically significant are included, however all comparisons were examined. The results are explained in more detail below the table.

Table 10   **Comparisons of intervention components by mental health and substance use status compared with the general population (Part i).**

	Substance Use					Mental Health				
	Yes		No			Yes		No		
	N	(%)	n	(%)	p-value	n	(%)	n	(%)	p-value
Pharmacotherapy	22	(78.6)	200	(52.6)	<0.01	41	(73.2)	181	(51.4)	<0.01
Smoking Cessation Specialist	2	(7.1)	53	(13.9)	0.31	5	(8.9)	50	(14.1)	0.29
Setting:										
Community	2	(7.1)	81	(25.1)	<0.001	4	(7.4)	79	(26.6)	<0.001
In-patient	12	(42.9)	15	(4.6)		18	(33.3)	9	(3.0)	
Out-patient	14	(50.0)	227	(70.3)		32	(59.3)	209	(70.4)	
Mode of Delivery:										
Group	4	(14.3)	83	(21.7)	0.35	5	(8.9)	82	(23.2)	<0.05
Provider:										
Counsellor/Health Educator	14	(66.7)	128	(45.7)	<0.01	20	(48.8)	122	(46.9)	0.55
Nurse/Physician/ Psychologist	3	(14.3)	131	(46.8)		16	(39.0)	118	(45.4)	
Researcher	4	(19.0)	21	(7.5)		5	(12.2)	20	(7.7)	

n.s. signifies not significant

Table 11   **Comparisons of intervention components by mental health and substance use status compared with the general population: (Part ii).**

| | Substance Use | | | | | Mental Health | | | | |
| | Yes | | No | | | Yes | | No | | |
	N	(%)	N	(%)	p-value	n	(%)	n	(%)	p-value
BCT 1.3	4	(14.3)	8	(2.1)	<0.001	5	(8.9)	7	(2.0)	<0.01
BCT 1.5	8	(28.6)	21	(5.5)	<0.001	10	(17.9)	19	(5.4)	<0.001
BCT 1.7	3	(10.7)	0	(0.0)	<0.001	3	(5.4)	0	(0.0)	<0.001
BCT 2.2	4	(14.3)	60	(15.7)	n.s.	15	(26.8)	49	(13.8)	<0.05
BCT 2.5	3	(10.7)	10	(2.6)	<0.05	6	(10.7)	7	(2.0)	<0.001
BCT 2.7	8	(28.6)	39	(10.2)	<0.05	10	(17.9)	37	(10.5)	n.s.
BCT 4.3	0	(0.0)	1	(0.3)	n.s.	1	(1.8)	0	(0.0)	<0.05
BCT 4.4	1	(3.6)	0	(0.0)	<0.001	1	(1.8)	0	(0.0)	<0.05
BCT 8.2	7	(25.0)	134	(35.1)	0.28	10	(17.9)	131	(37.0)	<0.01
BCT 8.7	0	(0.0)	2	(0.5)	0.70	2	(3.6)	0	(0.0)	<0.001
BCT 10.10	4	(14.3)	15	(3.9)	<0.05	4	(7.1)	15	(4.2)	n.s.
BCT 11.1	23	(82.1)	245	(64.1)	n.s.	44	(78.6)	224	(63.3)	<0.05
BCT 12.4	4	(14.3)	131	(34.3)	<0.05	7	(12.5)	128	(36.2)	<0.001
BCT 13.1	8	(28.6)	49	(12.8)	<0.05	11	(19.6)	46	(13.0)	n.s.
BCT 13.3	0	(0.0)	1	(0.3)	n.s.	1	(1.8)	0	(0.0)	<0.05
BCT 14.1	3	(10.7)	5	(1.3)	<0.001	3	(5.4)	5	(1.4)	<0.05
BCT 14.3	3	(10.7)	3	(0.8)	<0.001	3	(5.4)	3	(0.8)	<0.01
BCT 14.5	2	(7.1)	0	(0.0)	<0.001	2	(3.6)	0	(0.0)	<0.001
BCT 14.9	0	(0.0)	25	(6.5)	n.s.	0	(0.0)	25	(7.1)	<0.05
BCT 15.1	5	(17.9)	32	(8.4)	n.s.	9	(16.1)	28	(7.9)	<0.05
Top 3	12	(42.9)	158	(41.4)	0.88	22	(39.3)	148	(41.8)	0.72

n.s. signifies not significant; Top 3 includes any of the Top 3 effective BCTs as identified by Black *et al.*

5.3.1   Pharmacotherapy

The above table shows the results for inclusion of pharmacotherapy in an intervention, by study arm. This was coded as either Yes or No by arm. As the results show, the use of pharmacotherapy was high across the study arms, although there was a significant difference between the provision of pharmacotherapy in arms which targeted both mental health and substance use when compared with the remaining arms. For substance use, 78.6% of study arms were provided pharmacotherapy, compared with 52.6% of the arms targeting the general population. Both of these are high, but it is worth exploring further the reasons behind so many substance use focused arms receiving pharmacotherapy when only around half of the other study arms were provided with it. As the use of pharmacotherapy is widely regarded as the most effective method of smoking cessation, the fact that PWUD/A are more likely to be offered pharmacotherapy raises some interesting issues, possibly suggesting that PWUD/A are more likely to receive effective, evidence based treatment for smoking cessation.

5.3.2   Setting

The setting of the intervention was coded into three broad groups: community; in-patient; out-patient. The use of a community setting may refer to any non-medical setting and includes research settings, as well as other community based settings. For both substance use and mental health focused study arms, this reflected a significant difference when compared with the general population study arms (p<0.001), as both were less likely to receive an intervention in a

community setting (7.1% and 7.4% respectively, compared with 25.1% and 26.6%). The differences between likelihood of receiving interventions in either in-patient or out-patient settings was not significant.

5.3.3   Smoking cessation specialist

This variable relates to the involvement of a smoking cessation specialist in the delivery of the intervention: yes or no. When compared with the study arms targeting the general population, neither study arms targeting substance use or mental health presented a significant difference. Numbers were fairly low across the study arms who received this delivery type, so it may be that this was not seen as important by trialists, or it may be that the reporting of this aspect was inconsistent.

5.3.4   Group delivery

This variable relates to the mode of delivery for an intervention. Group delivery refers to the intervention being delivered to a group of people, either in person or remotely. This was usually done in person, although more recent studies are likely to see an increase in virtual intervention delivery as a result of the COVID19 pandemic and its impact on healthcare delivery. Interestingly, this aspect of intervention delivery was not significant when substance use focused study arms were compared with those focused on the wider population, although when mental health focused arms were compared with the wide population focused study arms, a difference was identified when significance was set to $p < 0.05$.

5.3.5   Person delivering intervention (provider)

This refers to the primary person delivering the intervention and was coded into several subgroups to cover the most frequently used providers: Counsellor or health educator; health professional (including nurse, doctor, psychologist); or researcher. None of these provider options was significant when looking at mental health focused study arms compared with the wider population. The substance use focused study arms were more likely to receive an intervention delivered by a counsellor or health educator than other study arms were (66.7% compared to 45.7% respectively). The other provider options were not significantly different between substance use and non-substance use focused study arms.

5.3.6   BCTs

In this study, it was important to explore each individual BCT as well as those deemed to be effective. As this was an exploratory study, it was relevant that each BCT be assessed so that any significant differences between those given to PWUD/A or those with mental health conditions and those who did not. As Table 11 shows, there were more BCTs that demonstrated a significant difference in use when looking at mental health focused study arms than there were in those focusing on PWUD/A. This may be due to the fact that there were more study arms focusing on people with mental health conditions (56) compared to those focusing on PWUD/A (28).

5.3.6.1 Top 3

Using the BCTs identified by Black et al. to be effective, the substance use focused study arms were compared with general population focused study arms, and mental health focused study arms were compared with wider population focused study arms to see if there was a difference in the likelihood of receiving any of the three most effective BCTs, which are: 1.9 Commitment; 10.4 Social reward; and 13.5 Identity associated with changed behaviour. The findings were

not significant for either substance use nor mental health, and there were very similar rates of receiving these BCTs (42.9% compared with 41.4% and 39.3% compared with 41.8% respectively). These are quite high, which is unsurprising given that these top three included BCTs which are ubiquitous within smoking cessation and would be expected to appear in any smoking cessation intervention, regardless of target population.

5.3.6.2 Effective BCTs

In this section of the analysis, the likelihood of substance use focused study arms receiving each BCT from the list of effective BCTs was compared against the non-substance use focused study arms, and the mental health focused study arms were compared with the non-mental health focused study arms. Those which yielded significant results are shown in the table above.

Table 12 below shows only the BCTs which were significant for the substance use study arms, and Table 13 shows only those which were significant for mental health study arms, with the names of each of the significant BCTs.

Table 12   Significant differences in proportions receiving effective BCTs for substance use focused study arms.

Number	Description	Substance Use				
		Yes		No		
		n	(%)	n	(%)	p-value
1.3	Goal setting (outcome)	4	(14.3)	8	(2.1)	<0.001
1.5	Review behaviour goals	8	(28.6)	21	(5.5)	<0.001
1.7	Review outcome goal	3	(10.7)	0	(0.0)	<0.001
2.5	Monitoring of the behaviour by others without feedback	3	(10.7)	10	(2.6)	<0.05
2.7	Feedback on outcome(s) of behaviour	8	(28.6)	39	(10.2)	<0.05
4.4	Behavioural experiments	1	(3.6)	0	(0.0)	<0.001
10.10	Reward (outcome)	4	(14.3)	15	(3.9)	<0.05
12.4	Distraction	4	(14.3)	131	(34.3)	<0.05
13.1	Identification of self as role model	8	(28.6)	49	(12.8)	<0.05
14.1	Behaviour cost	3	(10.7)	5	(1.3)	<0.001
14.3	Remove reward	3	(10.7)	3	(0.8)	<0.001
14.5	Rewarding completion	2	(7.1)	0	(0.0)	<0.001

Table 13   Significant differences in proportions receiving effective BCTs for mental health focused study arms.

Number	Description	Mental health				
		Yes		No		
		n	(%)	n	(%)	p-value
1.3	Goal setting (outcome)	5	(8.9)	7	(2.0)	<0.01
1.5	Review behaviour goals	10	(17.9)	19	(5.4	<0.001
1.7	Review outcome goal	3	(5.4)	0	(0.0	<0.001
2.2	Feedback on behaviour	15	(26.8)	49	(13.8)	<0.05
2.5	Monitoring of the behaviour by others without feedback	6	(10.7)	7	(2.0)	<0.001
4.3	Re-attribution	1	(1.8)	0	(0.0)	<0.05
4.4	Behavioural experiments	1	(1.8)	0	(0.0)	<0.05
8.2	Behaviour substitution	10	(17.9)	131	(37.0)	<0.01
8.7	Graded tasks	2	(3.6)	0	(0.0)	<0.001
11.1	Pharmacological support	44	(78.6)	224	(63.3)	<0.05
12.4	Distraction	7	(12.5)	128	(36.2)	<0.001
13.3	Incompatible beliefs	1	(1.8)	0	(0.0	<0.05
14.1	Behaviour cost	3	(5.4)	5	(1.4	<0.05
14.3	Remove reward	3	(5.4)	3	(0.8)	<0.01
14.5	Rewarding completion	2	(3.6)	0	(0.0)	<0.001
14.9	Reduce reward frequency	0	(0.0)	25	(7.1)	<0.05
15.1	Verbal persuasion about capability	9	(16.1)	28	(7.9)	<0.05

Interestingly, only one of these BCTs was less likely to be delivered to the substance use focused study arms; 12.4, Distraction. Similarly, only two of the BCTs were less likely to be delivered to the mental health focused study arms; 12.4 and 8.2, Substitution.

As can be seen from the above tables, several BCTs were significant across both substance use and mental health when compared with general population study arms. These are BCTs 1.3, 1.5, 1.7, 2.5, 4.4, 13.1, 14.1, 14.3 and 14.5. When

these BCTs are clustered as in the BCTTv1, the most common clusters here are 1, Scheduled Consequences and 14, Identity.

When exploring BCTs and their influence on changing behaviours, it can be useful to look at the mechanisms by which they work. BCTs can also be grouped into higher level clusters, based on the mechanisms by which they influence behaviour. These three higher level clusters are: Associative Processes (AP); Reflective Processes (RP); and Self-Regulatory (SR). Associative processes can be described as: 'those that occur relatively automatically through encountering cues that prompt behaviour'. Reflective processes can be described as: 'are those that are relatively more conscious and effortful and drive behaviour through decisional processes. Self-regulatory processes can be described as: 'those that control whether a person is able to enact the behaviour' (Black et al., 2020). The table below shows all of the BCTs which were significant for substance use and / or mental health (taken from Tables 10 and 11 above), and the processes that each of these BCTs are associated with: AP, RP or AR.

Table 14   **Significant differences in those receiving effective BCTs grouped by higher level clusters, for both substance use and mental health focused study arms.**

Number	Process	Substance use	Mental health
1.3	SR	<0.001	<0.01
1.5	SR	<0.001	<0.001
1.7	SR	<0.001	<0.001
2.2	SR	n.s.	<0.05
2.5	SR	<0.05	<0.001
2.7	SR	<0.05	n.s.
4.3	SR	n.s.	<0.05
4.4	SR	<0.001	<0.05
8.2	AP	0.28	<0.01
8.7	AP	0.70	<0.001
10.10	AP	<0.05	n.s.
11.1	SR	n.s.	<0.05
12.4	RP	<0.05	<0.001
13.1	RP	<0.05	n.s.
13.3	RP	n.s.	<0.05
14.1	AP	<0.001	<0.05
14.3	AP	<0.001	<0.01
14.5	AP	<0.001	<0.001
14.9	AP	n.s.	<0.05
15.1	RP	n.s.	<0.05

SR: Self Regulatory. AP: Associative Processes. RP: Reflective Processes.

Using these clusters to explore mechanisms of behaviour change can be useful when comparing these BCTs by target population as has been done in this study. This will be further explored in Chapter 7, which focuses on behaviour change and synthesises the findings from the three studies presented in this thesis.

5.4 Discussion

The results of this study show that there are significant differences between interventions received by people who use substances and people who don't. The reasons for this are not clear, however this population does not seem to be receiving the most effective intervention components, or those that are the most acceptable. As discussed in the previous chapter, agency and autonomy are key aspects of recovery and behaviour change, especially for this population. The BCTs that are routinely offered as part of smoking cessation intervention for PWUD/A do not appear to reflect this.

Michaelsen and Esch (2022) argue that BCTs can be viewed as empowering processes through the engagement with new and healthier behaviours (or choosing to avoid less healthy behaviours, such as smoking). They define the basic dimensions of empowerment as autonomy, transparency and motivation. Despite this, not all BCTs reflect empowerment, especially dependent on the context and manner in which they are delivered. As discussed earlier, interpersonal style and the way in which BCTs are offered can have a huge influence in both their effectiveness and their acceptability to participants, yet this is something which is not easily identified or reported on.

Empathy is another key concept in delivering and promoting behaviour change (Moudatsou et al, 2020). Lack of perceived empathy can promote resistance to change, if individuals do not feel understood or feel like they are being blamed for their actions. Empathy enhances the effectiveness of interactions between staff and PWUD/A, and can foster

autonomy, competence and relatedness. Empathy, active listening and techniques such as motivational interviewing can all be used to build autonomy, competence and relatedness and as such are important to consider when designing an intervention, and when considering components such as who delivers it and what the active techniques to be included are.

Some of the findings above do indicate an agency promoting intervention, for example the provider of an intervention is more likely to be a counsellor or health educator in the substance use study arms, rather than a researcher or a health professional. However, without knowing more about the experiences of the provider, it can be difficult to gauge if the counsellor / educator is appropriately skilled in working with this population. It is also interesting to note that group delivery, although not significant for substance use, was for mental health. Group delivery is known to be an effective mode of delivery and can improve engagement and support through peer experience sharing and bonding. These types of intervention are commonly used in substance use treatment services and are generally accepted, yet do not appear to be offered for smoking cessation for PWUD/A. As will be explored in the following chapter, many PWLE expressed a preference for group support for smoking cessation, so it can be assumed that the lack of group delivery interventions is not due to participant preference.

The setting of the interventions is also interesting to note, as PWUD/A were less likely to receive the interventions in community settings. It is possible that this is due to the nature of RCTs, and the recruitment was likely to have been carried out via in- or out-patient settings due to the study inclusion criteria. If recruiting PUWD/A for a study, many researchers will engage with local substance use treatment services or medical services, as the identification and recruitment of PWUD/A through mainstream channels can be challenging. However, this is another aspect that should be considered and participant preference taken into account. With other studies (Swithenbank et al., 2022), service users and staff have expressed the preference for smoking cessation interventions to be held in the substance use treatment service, as this is often somewhere convenient, as they already attend regularly, as well as being somewhere they feel comfortable with staff and about disclosing information about their substance use which may be relevant to their smoking cessation. In mainstream services or interventions, staff may not be aware of the complex relationships between smoking and other substance use and may not be best placed to offer support in this situation.

The results from these analyses suggest that both people with a mental health condition and PWUD/A have higher FTND and CPD scores, indicating that they some more heavily and are more addicted to nicotine than the wider population. This is important to consider, as FTND has been identified as a predictor for smoking cessation (Kõks et al., 2019; Fagerstrom et al., 2012), with those scoring higher on the FTND being less likely to successfully quit smoking. Those with higher FTND may require additional support to quit, which further illustrates the importance of addressing smoking in these populations. Those who smoke more or have a higher FTND score are also at a greater risk of smoking related morbidity and mortality, with many studies exploring the risk of different diseases and how these increase with increased smoking intensity (Rota et al., 2024; Lin et al., 2021; Law et al., 1997).

The high rates of pharmacotherapy use in both mental health and substance using study arms is another interesting factor. Pharmacotherapy is widely known to be a very effective method of smoking cessation, especially when used in conjunction with behavioural support. Although rates of pharmacotherapy were high across all study arms, it was

significantly more likely to be used in both substance use and mental health study arms. There can be some resistance to the use of medication in people in substance use treatment services, for various reasons. Some of this is due to high rates of the use of other (non-prescription) drugs, therefore some people prefer not to use medication when they are actively trying to reduce their drug use. There are also concerns about drug interaction, especially with mediations for mental health conditions. Again, it was not clear if the use of pharmacotherapy was offered as a choice or as an essential part of the interventions, so it is impossible to claim that the use of pharmacotherapy was not consensual, but for many health professionals, pharmacotherapy is seen as an effective, cost effective and easy option for smoking cessation, and may be offered without meaningful discussion about choice and the range of options available.

It is also worth noting that this finding may be a result of bias in the database, as the ICSmoke systematic review only included behavioural interventions for smoking cessation, with or without the use of pharmacotherapy. If the database had collected all studies on smoking cessation, rather than only those using behavioural interventions, then this may offer a very different picture. This is another example of the limitations of both RCTs and of the ICSmoke database, as trialists were focusing their study on one aspect of smoking cessation treatment, rather than a real-world application where many complex and competing factors influence smoking cessation. Trials by their nature aim to test the efficacy of one aspect of treatment.

The BCTs that were more likely to be received by substance using study arms covered a range of BCTs clusters and approaches. Some appear to be more prescriptive and not supporting of agency and autonomy, whereas others supported motivation and self-efficacy. For example, BCT 2.5, monitoring of the behaviour by others without feedback, does little to increase self-efficacy. The provider monitors the participants behaviour but does not offer feedback or advice to modify the behaviour. This can be useful as a BCT, but does not support a person-centered, empowerment based intervention.

5.4.1   Limitations

As discussed elsewhere, there are limitations to the use of this data, which extend to this study. The database was made up of RCTs with specific and rigid exclusion criteria, which is both a strength and a limitation. It uses traditionally high quality evidence, gathered from a rigorous systematic review of RCTs. Although these criteria are important and appropriate for a systematic review, there are key issues when using this type of evidence to explore interventions for a specific population, such as PWUD/A. These people are traditionally viewed as 'hard to reach' in both treatment and research, and as such are fewer desirable candidates for a successful RCT. Although the definitions of effectiveness for BCTs are taken from a study which used the same extensive dataset, it uses the whole dataset, which includes a much broader population and is not specific to people who use substances. This may have implications for the transferability of any conclusions drawn from this study. However, a particular strength of the Black *et al* study is the large and diverse range of studies included, and they cite the use of biochemical verified studies as a strength, as it protects against sources of bias. The inclusion of both intervention and comparator groups in the database is another strength, as is the inclusion of additional materials and information collected from study authors. Another potential limitation is that the Black et al., (2020) study used the ICSmoke1 database, which contained 142 studies, not the updated ICSmoke2 database which

contained 172 studies. This smaller pool of studies may limit the diversity of those included, although only those which were assessed as being of high quality were included in their analysis.

It is important to assess the effectiveness of an intervention, and commissioners or funders especially rely on 'evidence-based' interventions to decide which are appropriate to implement. As such, this study has proved to be a worthwhile exercise, as all of the studies included meet rigorous quality standards and can be seen to be 'high-quality' evidence which commissioners and funders could use to inform the implementation of interventions. This is one reason why it is important to explore the BCTs and intervention components in terms of their effectiveness, although it is important to note that those deemed to be effective were assessed using a much broader sample, not just PWUD/A, and that this may not be applicable to all populations. Without assessing the effectiveness of BCTs and intervention components specifically or PWUD/A, it is not possible to say with certainty that these are necessarily effective in all populations.

Future work to build on the findings presented in this chapter could explore this concept of effectiveness and how it relates to PWUD/A, as this would be useful to address the issue. Although it is something the updated searches for the proposed ICSmoke 3 database aimed to address, there were too few studies identified in this round of searches which focused on PWUD/A to allow for such analysis using the existing database. If time and resources allowed, this would be an interesting research topic to explore with a broader and more inclusive database, although the strengths of the ICSmoke database lie in its comprehensive data extraction and following up with study authors to gather additional information, which would be challenging to replicate.

Despite the limitations of this study, it remains a useful and pragmatic exercise as it demonstrates that there are significant differences in the intervention components of interventions targeting people who use substances when compared with the general population. Combining this study with the other studies which make up this thesis aims to address some of the issues with the different sources of evidence by building a more complete picture of the available evidence and taking into account multiple different perspectives.

5.5 Summary

The main aim of this study was to critically analyse evidence from a dataset of randomised control trials of behavioural interventions for smoking cessation, which has been done using the ICSmoke database of behavioural trials for smoking cessation and using quantitative analysis to compare the characteristics or components of an intervention which PWUD/A are more or less likely to receive when compared with interventions which target the general population.

Table 15 **Status of each objective associated with Study 2.**

Objective	Status
To explore the feasibility of using the ICSmoke database to examine the content of interventions for smoking cessation used in interventions delivered to PWUD/A.	The initial exploratory analysis confirmed that the ICSmoke database was suitable for an analysis of intervention components and BCTs present in interventions for PWUD/A when compared with those for people who do not.
Consider the characteristics which are more or less likely to be present within published evidence on smoking cessation in substance use.	This has been addressed through examination of available literature on behavioural interventions for smoking cessation, using RCTs targeting different populations.
Explore the implications of this, and how this relates to acceptability.	Using previous analysis of the study database, effective BCTs for the general population have been identified. These need to be assessed for suitability for this group using the APEASE criteria, focusing specifically on acceptability to multiple stakeholders.
Examine the characteristics of studies which meet agreed quality criteria for systematic reviews.	This has been explored using the ICSmoke database as an example.
Explore studies in terms of the behaviour change taxonomy.	The BCTTv1 has been used to extract and identify specific intervention components for inclusion in a future intervention for smoking cessation in substance use treatment services.

Chapter 6 Study 3: Qualitative multi stakeholder study

6.1 Introduction

There's no point giving up alcohol and drugs if you just kind of like, you know, smoke yourself to death.

(Gary, Client)

This chapter describes the aims and objectives of the study, then goes on to explain the design and processes used. Next, the approach to data analysis is discussed before the findings are presented. Recommendations for a future smoking cessation intervention are analysed and presented in the form of behaviour change techniques. A discussion of the findings follows, including the strengths and limitations of the study. Finally, the conclusion summarises how this study answers the research questions.

6.1.1 Aims

This multi-method study utilises a qualitative approach to explore the perspectives of different stakeholders in substance use treatment. Qualitative interviews with clients of and staff working in substance use treatment services were undertaken to explore their views on smoking cessation in services. The study was further supplemented with the inclusion of ten interviews with service users from my MSc research, which although exploring a broader subject of smoking in treatment (rather than potential interventions) do provide some useful data which can be brought in here to complement the primary research interviews which were conducted as part of this study.

As discussed in Chapter 1, Introduction, my MSc research study provided the foundation for this PhD. The participant interviews highlighted the need for further work exploring the perspectives of PWUD/A around smoking cessation in this context and provided some suggestions as to what this might look like. This PhD study builds on those interviews to further explore the perspectives of PWUD/A and adds to this by including interviews with staff to gain a different perspective. The overall aims of this PhD include assessing the acceptability of potential smoking cessation interventions for delivery in substance use treatment services, as well as determining what factors need to be considered when designing such an intervention, from multiple perspectives. This study (Study 3) brings the perspectives of those accessing and working in substance use treatment services to the fore, offering a valuable insight into this phenomenon.

Aim

To examine the perspectives of staff and people accessing substance use treatment services about smoking cessation in substance use treatment services.

Objectives

- To explore what staff and people accessing substance use treatment services think is acceptable in terms of smoking cessation.

- To determine which factors need to be considered when developing smoking cessation support for people in substance use treatment.

- To identify barriers and facilitators to the implementation of and engagement with smoking cessation in substance use treatment services.

6.2 Methods

6.2.1 Design

The overall methodology of the PhD is described in detail in Chapter 3, this section describes the methods used specifically for the multistakeholder qualitative study (Study 3). This multi-method study draws on data from three sources:

- primary interview data from clients in substance use treatment (N=8);
- primary interview data from staff working in substance use treatment services (N=9);
- secondary data from interviews with clients of residential substance use treatment services (N=10) collected in 2017 for my MSc study.

The secondary data aspect utilises existing data collected as part of an MSc in Public Health: Addictions (Swithenbank, Harrison and Porcellato, 2022). A primary research study was carried out which explored perspectives of tobacco smoking held by adults in residential substance use treatment (Ethics approval number: 17/PBH/005) with a view to better understand their perspectives and to identify ways to inform the development of future smoking cessation provision in this setting. This study identified a need for, and acceptability of, a smoking cessation intervention aimed specifically at adults in substance use treatment. More information on the methods and findings of the study can be found in the published paper (Swithenbank, Harrison and Porcellato, 2022). Ten semi structured interviews were carried out with current and former service users, and these interview transcripts were reanalysed to identify relevant information to inform the current project. Interviews were approximately 45 minutes long, with interview lengths ranging from 30 to 60 minutes. The secondary data was included to provides a breadth and depth of understanding of the perspectives of an additional ten participants as well as including those who had experienced a range of treatment options, as residential treatment services were not included in the data collection of the PhD research. Although this study had a slightly different focus, it was the catalyst for the PhD programme of research , as the findings suggested that a group intervention to be offered within treatment services would be appropriate and acceptable to clients and staff. Secondary analysis also reduces the burden on participants by avoiding repetition of previous work (Heaton 2004),

and the content of the interviews offered some relevant and useful data which warranted revisiting these to supplement new interviews conducted as part of this PhD study.

6.2.2   Participants and recruitment multi stakeholder study

Prior to any research being carried out, ethical approval was sought from Liverpool John Moores University's research ethics committee (LJMU UREC 19/PHI/037). Appendix A confirms that ethical approval was given, whereas Appendix B and Appendix C contain the relevant documentation. Due to the nature of the research which involved vulnerable adults, full ethical approval was sought for staff and clients of substance use services, as the process for recruitment and participation were much the same for both stakeholder groups.

The initial plan for recruitment was to work with the Cheshire West and Chester (CWAC) substance use treatment services due to an existing relationship with these services. The CWAC services cover the whole of Cheshire West, with three main locations, or 'hubs' located in Chester, Northwich and Ellesmere Port. At the time of the data collection starting (2020), these services were being run by Westminster Drugs Project (WDP). Once ethical approval had been granted gatekeepers at WDP were contacted to discuss the involvement of their services in Cheshire West. A research proposal was submitted, and discussions were held with research staff from WDP. A data sharing agreement was drawn up between WDP and LJMU to allow for the sharing of information.

Inclusion criteria for staff were as follows:

- over 18 years of age
- currently working (or volunteering) in a substance use treatment service
- comfortable conversing in English

These inclusion criteria were chosen to include as broad a range of staff as possible, in order to gather a range of perspectives.

Staff Recruitment

Staff were initially contacted via the gatekeeper (service manager) at a staff meeting or via email. Staff were recruited first as they were easier to reach via service gatekeepers, and to reduce and ethical issues around accessing people using the services. Staff were better placed to identify and approach and clients they thought were suitable for the study. They were invited to attend a brief presentation on the research project, given by the researcher. These staff presentations were held at all three service hubs across the Cheshire West and Chester region. Any staff interested were given a Participant Information (PI) sheet and the opportunity to ask any questions. They were given a week to consider their involvement, then the researcher returned to the service and to discuss any concerns on a one-to-one basis, and to gather consent.

Client Recruitment

At the follow up meeting with staff, staff were also asked to invite any suitable clients or those they thought might be interested in taking part to attend a second brief presentation on the project, which explained the process and the

information on the PI sheet. Any clients who were interested were given the PI sheet to take away. They were given a week to consider their involvement, then the researcher returned to the services to discuss any concerns on a one-to-one basis, and to gather consent. The same recruitment strategy was successfully used in my previous MSc study which informed the development of the PhD programme of work.

Client inclusion criteria for the clients were as follows:

- over 18 years of age

- comfortable conversing in English

- a current, self-defined smoker (of cigarettes or other tobacco products)

- currently, or have been within in past five years, accessing treatment for substance use

Client participants who met the inclusion criteria were initially identified via the service staff, and anyone who they deemed to be unsuitable for group sessions due to aggressive behaviour, intoxication or other potentially disruptive behaviour was excluded. Ethical considerations and steps taken to mitigate risks are discussed in Chapter 3, Methodology. All face to face recruitment and interview sessions took place in one of the three treatment hubs, during staffed hours and with the knowledge and support of management at the services.

6.2.3 MSc data collection

Interviews conducted as part of the previous study from which the secondary data was gathered followed a similar process, with the additional inclusion criteria of currently accessing residential treatment for substance use or having done so within the last five years.

All interviews for the MSc study took place within a treatment service, either the residential service where the participant lived or the community service where several participants were volunteering at the time of data collection. Although the same community service was the primary location of data collection for the PhD study, none of the participants took part in both studies.

6.2.4 Recruitment challenges and adaptations

Recruitment for this PhD study began in late 2019 and the first interviews (N=7) were conducted in early 2020. Initial recruitment was fairly successful, due in part to existing relationships. The researcher had previously worked at the Cheshire West substance use services and as such was familiar with staff and ways of working. This allowed for informal discussions about the project which provided an opportunity to answer any questions and to be available for interviews at short notice, as dictated by the working of a busy treatment service. The number of participants had been decided as ten staff and ten clients, due to time limitations of the project, and as a recommended number (Fugard and Potts, 2015) in order to collect rich and in-depth data and to allow each participant time to explore and discuss their perspectives in some detail. It was also decided that the original data from the MSc study would be used to supplement the PhD data. Although ten was the proposed target for each group, recruitment challenges due to COVID-19 and associated issues with face-to-face research meant that numbers reached were slightly smaller than anticipated, with 9 staff and 8 service users. In order to reach these numbers, the inclusion criteria were expanded (with amended ethical approval) to include

adults who were currently in treatment for substance use, or who had been in treatment within the last five years, whereas the original inclusion criteria stated that participants must currently be accessing treatment. This period was decided upon so as to broaden the inclusion criteria but to still ensure that experiences were recent and relevant. Although there was potential for recall bias in this decision, it was pragmatic one which aimed to increase recruitment, whilst taking into account that for some participants who were currently or had recently been in treatment their experiences might be still too fresh to enable participation without causing distress.

Reflections on the pandemic; initial thoughts:

By March 2020, I had 5 staff and 3 client interviews completed. I had 5 more staff booked in for April 2020. The UK entered its first lockdown in March 2020. As far as research went, everything was put on hold. We didn't know how long for, but we all assumed it would be a few weeks, maybe months. As time went on, I was forced to consider my options in relation to my PhD. After long discussions with supervisors, we came up with a few ideas: Put it on hold, take leave and wait it out; consider changing recruitment strategy, moving to telephone or online interviews; change the topic of the study; give up altogether? I wasn't sure what was going to happen, or what to do for the best, but these conversations, as well as those I was having with people outside of academia, re-enforced how important this research was to me. If people in substance use treatment were already being overlooked, and smoking cessation was so far down on the list of priorities, what impact would a pandemic have on this? There would be a greater need than ever to research this subject.

Recruitment was also expanded beyond WDP, and other services were approached who had contact with adults who were or had been in substance use treatment. Three mental health charities with local presence (Rethink Mental Illness, Chester PLUS and Spider Project) were approached and gatekeepers asked to extend the invitation to participate with relevant clients or members of staff. As with WDP, gatekeepers were contacted and given all relevant information, and met virtually with the researcher to discuss the project. Anyone interested was asked to contact the researcher via email to discuss their involvement. Potential participants were provided with information sheets and given a week to consider if they wanted to take part. After this time, any questions were answered and consent obtained. Due to COVID-19 restrictions, interviews were conducted virtually, via either video or telephone call, whichever was preferred by the participant. The numbers of participant interviews that were conducted via each mode are listed in the Table 16, including whether they took place pre or post the initial COVID-19 lockdown of March 2020.

Table 16   Interview mode used.

	Face to face	Online	Telephone
Staff Pre COVID (n 5)	5	0	0
Staff Post COVID (n 4)	1	2	1
Clients Pre COVID (n 3)	3	0	0
Clients Post COVID (n 5)	3	1	1
MSc (n 10)	10	0	0

6.2.5   Interviews

Interviews were chosen as a data collection method as they can provide a deeper understanding of social phenomena than quantitative methods (Silverman, 2000), and are an appropriate method for exploring experiences, beliefs, perceptions and insights (Minhat, 2015). Interviews are designed to explore the participant's own framework of meanings (Britten, 1995), and the role of the researcher is to listen and to unpick these, rather than imposing their own beliefs or preconceptions onto the subject matter as much as is possible. They are especially useful when the researcher has a level of knowledge of the phenomenon being studied, and for exploring potentially sensitive subjects where participants may feel more comfortable on a one to one basis (Minhat, 2015). In this study (3), the interview schedule was informed by the previous study and the findings. The use of interviews as a data collection tool is discussed in more detail in Chapter 3.

The original interview schedule was developed based on existing research and the researcher's prior experiences in conducting research in similar settings. The questions were also influenced by both the recoverist perspective and the pragmatic paradigm which underpinned this work. From the recoverist perspective, it was important to understand the views and needs of people accessing services, and to ensure that their voices formed the heart of the potential intervention. However, pragmatically, it was necessary to understand staff perspectives to ensure acceptability of any intervention to them, as this is crucial for implementation. With these approaches in mind, questions were developed to explore previous experiences around smoking cessation, as well as barriers and facilitators to offering or asking for support. The literature was used to inform some of these questions, as many barriers to smoking cessation in this setting were identified, and as such questions were deliberately asked not just about barriers to smoking cessation, but also barriers to access or to implementation, as these were all factors that were identified in the literature. It was important to explore these from both staff and service users, not just from a pragmatic perspective, but as literature identified staff perspectives as key factors in changing behaviours and promoting a culture shift in substance use treatment.

The interviews that were conducted as part of this PhD were also informed by the earlier work that formed the foundation of the work. For this reason, participants were asked about their views on group delivery of smoking cessation programmes, and the content or context that this might entail. The original findings from the interviews suggested that group delivery was an acceptable option, but further exploration of this was required.

In order to evaluate the questions and ensure their suitability for the study, a pilot interview was conducted. This pilot interview was carried out with a researcher from a different institution who was volunteering at a different substance use treatment service and had himself been in treatment previously. This allowed the researcher to try out the interview questions and adapt accordingly, making changes which made the interview schedule more appropriate to a non-academic audience. This proved to be a very useful exercise as it highlighted some issues with the proposed questions. As the research questions explored desirable aspects of interventions, they became prescriptive and not appropriate for a semi-structured interview. The questions were leading and required participant knowledge of behaviour change theory, which was not appropriate or beneficial for the study. The use of a pilot interview allowed for the identification of these issues and for the further development of the interview schedule which explored what participants thought had worked or might work in relation to smoking cessation interventions in a broader and more open manner.

6.2.5.2 Data collection

For the primary data collection, semi structured interviews were conducted, following the preprepared interview schedule (see Appendix D). Participants were asked about their experiences of smoking cessation in substance use treatment services, their thoughts on the role of the services in smoking cessation, and any barriers or facilitators to implementing smoking cessation offerings within services. They were also asked about the types of intervention they thought might be effective, or might be well received by service users, and given the opportunity to discuss any other points they thought might be relevant. With the change in working practice brought about by the COVID-19 pandemic, staff were also asked about their thoughts on remote service delivery. Staff and clients were asked the same questions, with minor changes to wording to ensure the suitability of the question to the participant. For example: *'Can you tell me about your experiences of delivering smoking cessation in substance use treatment'* was adapted to '*Can you tell me about your experiences of accessing smoking cessation in substance use treatment'.* Interviews typically lasted around 40 minutes, with interview lengths ranging from 25 to 65 minutes.

For the secondary data, a similar process was followed, although all interviews were conducted face to face in a treatment service. Participants were asked about their smoking history, experiences of smoking in treatment services and their thoughts on smoking cessation within services. The entire dataset was analysed although some aspects such as smoking history were deemed not relevant to the current research question. These were coded as such (i.e. smoking history) and excluded from further analysis.

Reflections after a participant interview:

The interview was challenging, and the participant shared some very traumatic and personal information. She assured me she was comfortable talking about it, and I did attempt to steer the conversation back to less sensitive topics, but she continued. I struggled with my role, as I felt like I wanted to give her time and space to talk as she seemed to want to. At one point she commented on how good it was to have someone to talk to. Whilst I'm glad she found it helpful, I worry that I wasn't able to offer more than a listening ear. She left in good spirits, whereas I felt uncomfortable and confused about my role. In previous interviews, this hasn't been the case. Other participants have either been in

contact with other forms of support, or adamant that they don't want / need it. After this interview, I worried that she wasn't in contact with any support services, nor did she want to be as she didn't find them helpful in the past.

It made me consider my position as a researcher, and how I can make participants feel comfortable talking about personal issues with me without overstepping my role into a pseudo-counsellor or therapist of some kind. The reason for doing my research is to help people, broadly speaking. I wanted to find out more about the issue and how services could improve, with the key aspect for me being the experiences of service users themselves. I don't know how to balance this desire to connect and help people whilst remaining impartial and professional.

On reflection, this is something I've struggled with in other aspects of my life, and one reason I decided not to pursue counselling as a career option. My voluntary and part time work involve working with vulnerable people who often don't have good access to support, and over time I've become good friends with many people I've volunteered with, as we moved into different roles within the organisation. I've always prided myself on being professional and knowing the boundaries, but I do often feel like I want to do more to help someone and feel limited in my role to be able to do much.

6.2.6   Changes to Study Protocol

Data collection was paused during the COVID-19 pandemic, following the first UK lockdown in March 2020. Interviews did not resume until early in 2021. Due to the challenges faced by people delivering and accessing substance use treatment services, it was deemed necessary to adapt the recruitment inclusion criteria, to make it more flexible and inclusive. Services were delivering support remotely where possible, with staff teams rotating working in the service and working from home. Appointments and group support was moved online where possible, and people were not able to access the services in the same way as been the case pre-pandemic (OHID, 2023). All healthcare staff were under considerable pressure during this period, with heightened anxieties and a significant effect on mental health (O'Callaghan and Lambert, 2022). Although it was important to continue this research, it was also necessary to consider the impact on substance use treatment services and diminished capacity. For these reasons, recruitment inclusion was broadened and interviews were offered online, via telephone, or face to face where appropriate to do so.

Once it was decided to amend the inclusion criteria the way in which interviews were conducted changed and ethical approval for the amendments was sought. All participants were given the choice of taking part in face to face, online or via telephone. Online interviews were conducted via MS Teams as was University policy at that time. In order to ensure the safety and comfort of participants, interviews were arranged at their convenience. One client interview was done via telephone, and one via video conference. All were audio recorded only, even if video was used to facilitate rapport. Both were arranged so that the participants were able to be in places where they felt safe and had support available should they need it, although neither expressed any distress or discomfort during the interviews. The three face to face client interviews done at this time were held in a public place of their choosing – one requested a city centre café during the day, two were held at the University. All were conducted with the knowledge of a research supervisor, and in quiet but not isolated locations for the safety of all parties. Shifting the setting of the interviews didn't appear to present any issues for participants, but as a researcher I found the different settings somewhat disorienting. Interviewing participants

in the substance use treatment service made me feel comfortable, perhaps due to its familiarity. In public settings, the roles were less defined and I felt less confident. This was a challenge for me, especially during one difficult interview which is discussed in the reflective section below.

Staff interviews were done during work hours so they were able to be at the service where they worked, and I was able to conduct them from a private office within the University, which preserved privacy and avoided disruption. Practically, this was also beneficial as I wasn't relying on home broadband connections or privacy issues, so this worked well.

Reflections after an online interview:

Today's interview was challenging for me on a personal level. It was the first one post-lockdown, and everything that went along with that. Once again, the multiple roles and relationships I have or previously held have come into play – today's interview was with someone I used to work with and had a good relationship with. As such, she was aware of my personal circumstances and that I had taken some time off and recently returned to university. Although well intentioned, her expressions of concern about my well-being only added to my discomfort. It was difficult for me to distance myself personally and focus on the research, and despite the interview going well and resulting in some interesting discussions and very useful data, I was left feeling unsettled afterwards.

Throughout the pandemic and lockdowns, I was able to work from home. I was lucky to have an office space, and living alone meant there were fewer distractions. This was both a positive and a negative; although I was able to work, I found the distinction between work and life blurred and it became harder to switch off. I find it easier to focus and feel more 'professional' when I'm in a work environment. Conducting online interviews from my spare room did not allow me to distance myself from my personal life and I often felt vulnerable bringing my work into my safe space.

Once again, I was forced to reflect on my own roles within without the research and how this was influencing both my experiences and the research processes.

6.3 Reflexive thematic analysis

This study used reflective thematic analysis (RTA) as described by Braun and Clarke (2022). Thematic analysis was chosen due to its flexible nature; it is flexible in terms of theoretical framework data collection methods, sample size and research questions. This worked for the study as the data included three disparate sets of interviews, one of which had been conducted several years earlier and with different (but related) aims and interview questions. As discussed in detail in Chapter 3, a pragmatic approach was used, and this fitted well with thematic analysis as a method of data analysis.

Reflexive thematic analysis accepts and embraces researcher subjectivity (Braun and Clarke, 2022). As discussed in Chapter 1 (positionality statement), this is an important aspect of this research project. Instead of managing or trying to remove researcher subjectivity, in RTA the researcher seeks to own, understand and reflect on their own subjectivity, and it is treated as a resource. Analysis and interpretation cannot be objective, as knowledge generation is inherently subjective and situated. With this in mind, the researcher kept a journal throughout the project, in which she reflected on the process and her experiences. Excerpts of this are included throughout the thesis, however it should be noted that reflexivity is about more than positionality as it acknowledges the role of the researcher in the production of knowledge.

Original data from the MSc research interviews was re-analysed as well as all new data from interviews which had been transcribed verbatim and then analysed using a reflective thematic analysis framework (Clark and Braun, 2022). Data was amalgamated, with all interview transcripts uploaded to NVivo (QSR International; 2015) and key themes identified in order to answer the research questions. Any relevant information regarding the specific aspects of an intervention, barriers and facilitators to such an intervention, existing provisions for smoking cessation and acceptability of smoking

cessation in treatment settings were extracted, as well as any other significant themes which were identified. Themes and coding was checked by a member of the supervisory team (LP) to check for consistency and inter rater reliability.

6.3.1   Stages of reflexive thematic analysis

Braun and Clarke (2022) describe the six stages of thematic analysis, which are sequential yet recursive. There are different versions of Thematic Analysis, but Braun and Clarke present a version which is reflexive, and as such is characterized by the practice of critical reflection by the research on their role, practice and process (Braun and Clarke, 2022, p5). This approach is particularly relevant to this research study as the role of the researcher, lived experience and the notion that experience is central to understanding the world and the phenomena being studied are key aspects of pragmatism and of recoverism, which underpin this thesis.

Using Braun and Clarke's Practical Guide (2022), this study is based on the six stages of reflective thematic analysis. The six stages do not offer a precise formula for thematic analysis, but more a framework and set of guidelines to guide the process. Each stage is described below with a description of the processes that the researcher engaged with during this study.

This process of reflective thematic analysis is enhanced through immersion and depth of engagement with the data, and through distance. It is necessary for the researcher to immerse themselves in the data in order to fully engage with it, but also to distance themselves at times in order to regain perspective.

1. Familiarisation
2. Coding
3. Generating themes
4. Reviewing themes
5. Defining themes
6. Writing up

Familiarisation

The first stage is to familiarise oneself with the data. This was done by transcribing the interviews verbatim. All interviews were audio recorded, using either a voice recorder or, if conducted online, via MS Teams. Although transcription software was used for the online recordings (MS Teams), this was inaccurate and required me to listen to the interviews again and check all transcripts. This was beneficial as it allowed for revisiting of each interview and nuances of speech to be checked, as well as inflection or tone to be highlighted, allowing me to become immersed in the data and to begin to get a sense of what each participant was saying, as well as starting to recognise common themes or opinions across the dataset. Once all interviews were transcribed, they were imported into NVivo.

Reflection on transcription:

The ongoing task of transcription is taking up much of my time lately. Although a somewhat tedious task, I generally find it useful and quite enjoyable to refamiliarise myself with the interview transcripts, and themes and points I hadn't noticed when conducting them start to emerge. However, I had been procrastinating and putting off re-listening to one of my interview recordings. The first one I did as part of this PhD research, a pilot with a friend and colleague who was interested in research and was in recovery himself. He passed away during the pandemic.

For a while, I considered removing his data from the research altogether. It was an ethical issue I needed to reflect on, as well as my own feelings about the situation. In the end, I decided to include his interview. It was a positive experience for both of us and knowing how supportive he was of my research as well as the inclusion of the voices of people with lived experience, I didn't feel comfortable excluding his contribution. Listening to the recordings were difficult for me and blurred the lines between the professional and the personal on a whole new level. However, listening to his responses and laughter, as well as his passionate diatribe about the state of treatment services made me remember why this research matters and renewed my commitment to completing it.

Coding

Initially, the three sets (staff, client and MSc) were kept as separate projects in NVivo, and the idea was to code each set separately and uniquely, but this proved difficult as each set was coded, as each informed the next. As such, the three sets were combined into one dataset and coded this way. New codes were generated for each set, using a 'broad-brush' approach to begin with. All interview data was coded, including codes for 'other' and 'irrelevant'. This was to ensure comprehensive coding of the data and to make sure nothing was missed.

Searching for themes

Some codes were pre-determined based on the project aims and interview questions. For example: experiences, current provision, recommendations. Other themes / codes were identified when doing the first coding stage, such as vaping, COVID, harm reduction etc. Screenshots are included in Appendix E, which illustrate the first attempt at coding each set of transcripts. Codes were grouped into rough initial themes which provided a shared concept.

Reviewing themes

These initial themes were broad and lacked definition but offered a starting point for reviewing and refining themes. At this point, it was important to take a step back from the detailed coding and consider the research questions. The initial themes were reviewed by a second researcher to sense check and provide feedback, which helped to focus the analysis and allowed for reflection on the researcher's subjectivity. It is important that themes go beyond a descriptive commentary and a summary of each theme, but to offer an analytic narrative (Braun and Clarke, 2013). Each theme needs to have a unique centralising concept, which meant that upon reviewing themes, many were restructured, merged, discarded or re-conceptualised. ref

Defining themes

Stage five involved further refining and defining the themes, including writing a definition for each sub-theme. As in stage four, this involved considerable reflection on the themes, the researcher's positionality and the concepts central to each theme. Again, this involved referring back to the research question and attempting to focus the themes around relevant issues without losing important data. This was a constant challenge, as each quote and each sub-theme contained a perspective or an experience that provided insight into the topic area. Eventually, themes were solidified which worked with the coded data, the dataset, and the research question (Braun and Clarke, 2022).

The data which made up each theme was compared across the three sets of interviews and summarised by sub-theme, coded by which set and if the participant was a service use or member of staff. This was to provide an overview of them and to explore similarities and differences by set.

Reflections on thematic analysis:

Originally, I intended to analyse the staff and service user transcripts separately in order to compare and contrast the views and perspectives. In practice, this was not as clear cut. There is a grey area between staff and services users - many staff are former service users, especially the volunteers. Several changed or shifted between roles during the period in which I was carrying out the research.

With some, I knew them from my other roles and had some knowledge of their backgrounds; but some disclosed their history of substance use and accessing treatment in the course of the interviews. The questions I asked were much the same for both groups, so I wasn't too concerned about this, but analysing them as separate studies became much more problematic. On reflection, it was interesting to compare the attitudes to smoking cessation between those who had or hadn't been in treatment themselves, and between those who had or did smoke. This is something I would like to explore in more detail as it is a common theme across substance use treatment. This led me to read more around the topic and ultimately enhanced my understanding of the area, and of the different perspectives. It was good to challenge my own understanding and assumptions that I knew who had a history of substance use and who didn't, and it made me question my own perspectives and bias about lived experience being the 'best' form of knowledge.

Writing up

The sixth and final stage in the process involves the 'weav(ing) together…analytic narrative and vivid, compelling data extracts' (Clarke and Braun, 2013).

6.4 Deductive analysis

One of the aims of this PhD is to make recommendations for the development of smoking cessation interventions for delivery in substance use treatment services. As such, an additional analysis was carried out on the qualitative dataset used in Study 3. The three sets of transcripts (MSc interviews, staff and client interviews conducted as part of this PhD) were compiled, and a secondary, deductive analysis was conducted. This was done separately from the original analysis discussed earlier in this chapter as it does not form a part of a traditional thematic analysis, and it was felt necessary to separate the two approaches to preserve the integrity of the reflective thematic analysis. There are many different ways of approaching this hybrid methodology, but this sequential approach was the most suited to the data and offered the best approach to answering the research questions, without compromising the reflective thematic analysis and confusing the principles of such an approach.

The underpinning philosophy of thematic analysis is to explore experiences and to find meaning in them, and it was felt that adding a deductive element to the thematic analysis could potentially undermine its rigour and integrity. However, during the familiarisation process detailed above, it became clear that there were additional elements that were more specific suggestions about intervention components.

It was useful in this case to conduct a second, deductive analysis on the same dataset, due to the nature and content of the data. Participants were knowledgeable on the topic of smoking cessation in substance use treatment services, and most had experience of running, developing, or attending group-based programmes for substance use, and as such had some suggestions and recommendations for specific content and other intervention components. These participants are the real experts in this area, and it was important based on the research paradigms of pragmatism and recoverism to give weight to these suggestions. The deductive analysis was used to identify any recommendations or suggestions from stakeholders for any and all aspects of a smoking cessation intervention to be delivered in substance use treatment services. This deductive analysis used a set of predefined domains, which included: any suggestions or recommendations for development, integration, or delivery of smoking cessation interventions; any suggested behaviour change techniques that should be included; any factors which should be considered when designing an intervention for this setting. Findings were then mapped onto the COM-B and TDF framework. This data is used in Chapter 7 to synthesise the findings of Studies 1, 2 and 3 using a behavioural approach.

6.5 Findings

The table below illustrates the participants who took part in interviews for any part of this study, including those conducted as part of the MSc study and included here for secondary analysis. Each participant has been given a pseudonym. Also included in the table is whether the participant was a member of staff (this included volunteers), or a client of substance use treatment services, or both. Six members of staff who took part were also currently or had previously (in their lifetime) been a client of substance use treatment services. Some clients went on to work in services, but the table below only includes status up to and including the point at which the interview took place. It is also worth noting that 4 of the client participants were either working or volunteering in a service at the time of data collection, so despite their inclusion in the study as people with lived experience of substance use treatment, they may also have had additional experiences which influenced their perspectives. This dual identity is discussed more in Chapter 1. This added an additional dimension when exploring the different perspectives of staff and clients as there were blurred distinctions between the two groups, but also captured an important point that many staff working in substance use services do have their own lived experience of substance use.

Smoking status is also included in this table. Again, this refers to the participant's smoking status at the time of the interview taking place and does not include electronic cigarettes. Any participant who was using an e-cigarette exclusively was counted as a former smoker (assuming they had previously smoked tobacco cigarettes). Smoking status was not measured in detail, so did not account for frequency of smoking or length of habit.

Table 17 **Participant characteristics.**

Pseudonym	Staff	Client	Gender	Smoking status at time of data collection	
				Current	Former
Clients: Primary data (N=8)					
Steve	*	X	M	X	
Mark		X	M		X
Vicky	*	X	F		X
Wayne		X	M	X	
Simon		X	M	X	
Mike		X	M		X
Michelle		X	F	X	
Rick		X	M	X	
Staff: Primary data (N=9)					
Rachel	X	*	F	X	
Claire	X		F		
Chris	X		M		X
Caleb	X		M		X
Ruth	X		F		X
Mandy	X		F		X
Tasha	X		F		
Amy	X		F		
Pete	X	*	M		
Clients: Secondary analysis (N=10)					
Hugh		X	M	X	
Gary	*	X	M	X	
Cathy	*	X	F		X
Chloe	*	X	F	X	
Tom		X	M	X	
William		X	M	X	
Adrian		X	M	X	
Brian	*	X	M		X
Diane		X	F		X
Colin		X	M		X

*Indicates the participant also had experience as either a client or member of staff, although this was not the role they took part in the study as.

6.5.1. Thematic analysis

Four key themes were identified from the interview transcripts: Organisational and policy factors; risk perception and prioritisation; choice and recovery. These themes are all interlinked and encompass differing opinions and perspectives of different stakeholders within the participant sample. Figure 8 below illustrates these themes and their interconnected nature.

Figure 8   **Theme from interview transcripts.**
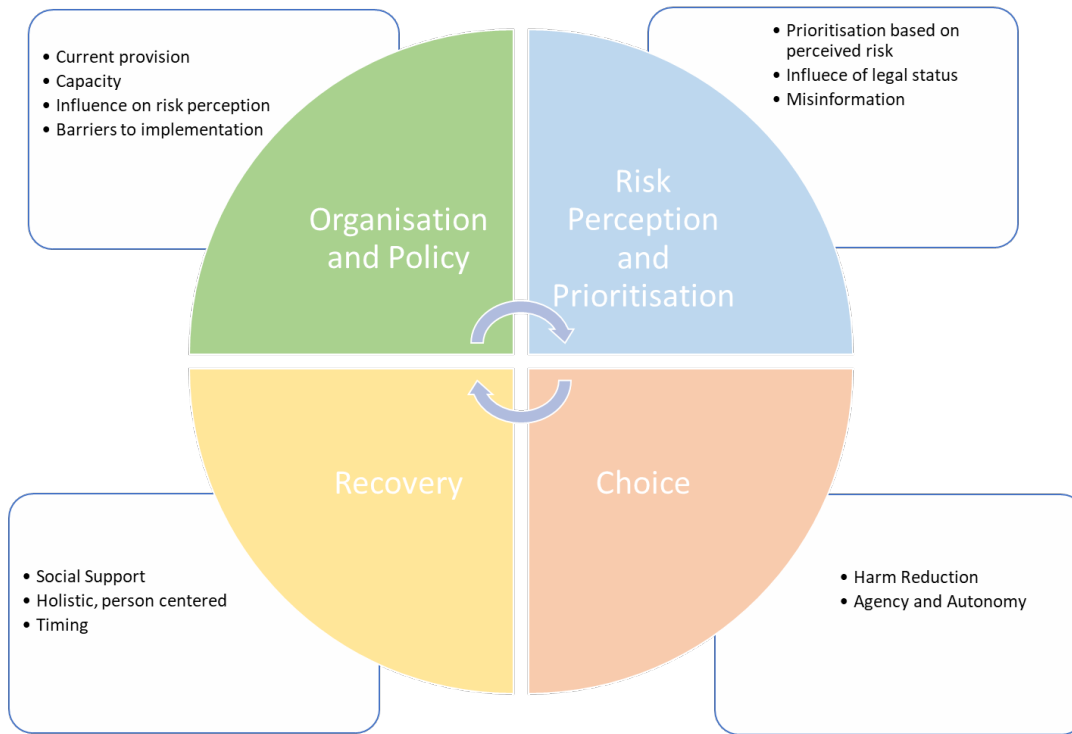
Organisation and policy

Factors relating to organisation and policy were cited by all participants when discussing their experiences of smoking in treatment services, both as barriers and facilitators for potential interventions. These factors relate to a range of policies and laws from legal status of substances to policies at an organisational or service level, such as the commissioned role of the service and the treatment discipline which it was situated within.

On an organisational level, the lack of current provision of smoking cessation support was mentioned by almost all participants, especially clients.

> *I believe that there should be a very robust process in place for smoking cessation, and that, at the moment, does not exist.*

(Steve)

There was an awareness from many participants that organisations were not commissioned or paid to offer smoking cessation, and therefore this was seen as an optional extra, not a core service.

> *Places like this that are commissioned to treat drugs and alcohol. They're not going to take that very limited pot and address something else. I mean, key areas for key performance indicators dictate where the money goes and what people's time is spent on. Outcomes. And as far as I know, no one's measuring smoking outcomes.*

(Chris)

Staff were more positive about the support available in organisations, although none were confident about their knowledge of current provision. Those who did state that there was already adequate provision did not believe there was a great need or want for such services, and that existing services were adequate.

> *I think when they're here our main aim is their drug or alcohol use rather than the smoking, it's one thing at a time. And we do we do offer to refer to smoking cessation. I would say 90% say, No. They don't want to, they don't want to address that. You know, it's not their priority.*

(Ruth)

Staff also expressed concern over their capacity to deliver any cessation advice, both due to lack of time and lack of skills and knowledge.

> *I think somebody would need to know a bit more about the options…And so I don't know all the ins and outs of it. OK, another was when we were trying to persuade people to use varenicline or something at one point. But it sent people potty. So it should be really careful with that.*

(Tasha)

Interestingly, in contrast to the staff concerns over their knowledge and skills to deliver smoking cessation, the majority of clients felt that the staff they had worked with already had those skills, and they would be able to offer effective smoking cessation support. In addition, most staff mentioned the organisational aspects and burden that would be involved, including training, time allocation and workload, whereas no clients mentioned this.

> *You'd want to be supporting staff not adding extra workloads.*

(Amy)

This is unsurprising, as staff and clients are likely to have different perspectives about workload, and it wasn't asked in the interviews, but does emphasise the concerns of staff about their capacity and fears of additional workloads.

The role of the service was discussed at length, with many feeling that although smoking cessation should be within the remit of the services, that it was not currently included within this. Because it was not seen to be part of the service offered, staff had received little to no training, and their already large workloads did not allow for the additional burden of delivering a smoking cessation intervention.

> *I mean, it's another, it's a drug, isn't it? And it's an addictive drug. I don't know why it shouldn't come into your remit.*

(Simon)

> *So and plus as well, it's, it's how do we deliver that? You know, I mean, we've we're just, we're all completely snowed under anyway. So it will just be one more thing that we will have to do.*

(Claire)

Even the staff that were very enthusiastic about smoking cessation and felt it should be offered were adamant that they did not have the capacity to do so at the present time. This reflected the organisational position that smoking was not within their role and may be responsible for norms within services regarding smoking.

> *I think there's a fear that we're almost condoning it. It was it's not really talked about that much. Deal with the heroin. Don't worry about the tobacco.*

(Chris)

This illustrates a common perspective in substance use treatment services that smoking is the lesser concern rather than a priority, which contributes to the social norms and acceptability of smoking in this setting.

Some staff expressed concerns that by not offering or promoting smoking cessation that they were in fact condoning it, which exacerbates the perception that it is not a priority or a great risk. Smoking was seen as an ingrained aspect of services, of all kinds. When asked, many participants agreed that the vast majority of people in treatment smoked, and that this extended beyond the statutory services to include other groups such as mutual aid programmes. Reasons for this were varied, but it remains true that smoking norms within this population are very different from the wider population where smoking is far less prevalent.

> *You know, everybody, you know, it's almost a given, you know, a lot of people in addiction recovery smoke, or you know, it's, it's very common, isn't it? It's the one thing that people hang on to, it seems to me anyway.*

> (Chloe)

This sense of smoking being socially acceptable and highly prevalent within substance use treatment services contributed to the sense of reduced risk, with many people engaging in the same activity (including staff in some cases) it was difficult to engage with the concept that smoking is immediately risky and should be a priority. Social norms in this case can lead to complacency, and for many the intent to address their smoking later allowed them to continue to smoke, even at high levels, with the sense that they could quit later without any great risks.

Barriers to implementation

There were many barriers to implementation of smoking cessation in substance use treatment services, which included the concerns about staff capacity, social norms and perceptions about the role of the service. Some staff believed that clients did not want to access smoking cessation support and did not feel that smoking cessation was a priority, which was reflected as many participants from both groups mentioned that smoking cessation was rarely discussed or offered within the services, citing organisational factors such as the perceived role of the service.

> *It's the nature of what we do… we just don't see it really as important, yeah. You've got lot of other things – keeping people alive. It's not really an immediate priority.*

> (Mandy)

Staff perspectives on this varied from those of clients, as most client participants believed that substance use treatment services were an appropriate location for offering smoking cessation whereas staff had reservations. The majority of staff agreed that it would be a suitable location, but it was not seen as part of their remit to offer it.

Risk Perception

Risk perception was a key theme within the data, not just in relation to the risks of smoking but also how this related to the prioritisation of smoking cessation by both staff and clients. On a broad scale, the legal status of tobacco was brought up several times when discussing attitudes towards smoking and when comparing the harms to other substances. The legality of tobacco gave some participants the sense that it was less harmful than other substances, and supported their feelings that the other substances they were using were of a higher priority than tobacco.

> *And I think it's a it's a huge it's a huge thing we're missing massively, because it's not seen as illegal.*

The legal status of tobacco altered the perceived risks associated with its use for many participants, primarily in the client group. Interestingly, this did not appear to extend to alcohol, which is also legal in the UK. The risks were generally seen as less immediate, and something that could be addressed later. This was true of both staff and client groups, with many expressing the opinion that one substance should be addressed at a time.

> *My life was in a complete mess, but oh boy, I loved alcohol, but I knew it had to go and taking cigarettes away from me at the same time would have just said… I would actually thought twice about going into residential treatment.*

(Gary)

Several clients stated that they would have been reluctant to enter treatment at all if smoking cessation had been a condition of entry; even non-smokers felt that this would be damaging. Many smokers felt that smoking relieved their anxiety, caused either by starting treatment or withdrawing or abstaining from their primary substance.

> *And I know people disagree with me, but in times of stress when you're in there and you've got this feeling of, I need a drink, or you can visualise a bottle in front of you, you just think, I know, I'll go downstairs, I'll go outside and I'll have a fag, that will calm me down. And it does actually calm you down.*

(Hugh)

The social aspect of smoking with someone else was also mentioned as a positive, as it allowed people to connect in smaller groups where they felt less anxious.

> *But when I've been drinking, and I'm coming down from drinking, I hate being around people. And I know a lot of people drink or take drugs, because they do have social anxiety. So you know, then being thrown into a house with all these crazy other people as well. And then thinking I'm going to quit smoking at the same time. Yeah. When that's one of the things you do, and some people do to socialise. Yeah. Awkward. I don't know what to do with my hands. I'm going to smoke outside maybe with one other person, and we'll have that kind of connection.*

(Michelle)

It was felt that the social aspect of both drinking and smoking was at least in part due to their legal status and perceived harms associated with them. In some ways, acknowledging the health risks of either made some feel like they could bind with other over their engagement with the 'same, semi-illicit activity'.

Due to these perceptions, the risks associated with smoking were deemed less immediate than that of other substance use and not something that should be addressed initially upon entering treatment.

> *Well, it's not going to get you into the same kind of trouble that alcohol and drugs do so and I think that there's an attitude that sort of, well, people have kind of already achieved a lot by stopping whatever the main substance of choice was. And then so it's like, well, just let them smoke.*

(Rachel)

This perception that smoking should not be addressed at the same time as other substances prevails, despite research to the contrary. Few participants stated that it would not be possible, although many felt that it was too much to take on at one time and that they would not wish to do so. Staff also felt that it was not appropriate to ask clients to do so. Other substances were seen as a greater risk, even by those who acknowledged the huge health risks of smoking.

We encourage them not to stop smoking. Because we think that it's too much to take on board, cutting all your vices out in one go.

(Vicky)

As discussed above in relation to organisational factors, smoking is not seen as a priority by many staff and clients within treatment services. This may be because of organisational and social norms surrounding smoking, but many staff stated that they felt the more immediate risks came from other substances.

When you're dealing with people who are injecting heroin and crack into their groin like four or five, six times a day, then you know, you tend to gloss over the cigarettes because it's not going to kill them immediately as an alcohol withdrawal say will kill you. I mean, alcohol could lead to your death, he could be dead tomorrow. If you're dependent then you could see me today, you could be dead tomorrow. And obviously like risk is relative.

(Gary)

Clients also discussed their priorities and how this related to smoking cessation, citing that their bigger or more immediate concerns were about the substances they were using other than tobacco. For some, the use of tobacco was seen as a protective factor in relation to mental health or other substance use, reinforcing the idea that timing and prioritisation is important to consider from a client perspective.

Because I don't, I don't see it as my I don't see it as my biggest issue. I've got problems. I've got my like, I've got to deal with depression and anxiety, as it is already. I don't see smoking as my biggest health concern. I see the possibility of me throwing myself of a bridge, the far biggest health concern.

(Mike)

As well as other substances, mental health was seen as a priority. Smoking was either contributing to mental stability through the reduction in anxiety as mentioned above, or there were concerns that attempting to quit smoking would have a detrimental effect on mental health.

I'm one of them that addicts like it's a crutch when you're dealing with not only like, removing a substance, but for me, anyway, major emotional and behavioural change. So it's just not on my list of priorities.

(Adrian)

It is interesting to note that many of these perceptions were shared by staff and clients and may reflect the wider social and organisational norms. It is unclear as to how these perceptions were established, or if they are reflective of the general population, but these findings highlight the need for a culturally sensitive approach which takes into account the competing priorities and multimorbidities that many in this population face. It could be argued that the reluctance to tackle more than one issue at a time relates to misinformation; despite evidence to demonstrate that giving up more than one substance at a time has benefits for both, many people still believe the concept of 'one thing at a time'. However, it is unclear how many people were aware of the evidence surrounding this, and how much was based on hearsay and anecdotal evidence, or fears around the risks of taking on too much at any one time.

Misinformation

Despite their legal status, the perceptions of the risks associated with these were mixed. Several cited their use of e-cigarettes and a cheaper and less harmful option than tobacco smoking and were happy to use e-cigarettes either exclusively or in addition to tobacco smoking. Many of the participants in the client groups suggested that vaping should

be encouraged within services, and several suggested that they should be allowed to vape inside the services to discourage tobacco smoking. This was not echoed by any members of staff, even those who vaped themselves. When staff discussed vaping, almost all said that they didn't know enough about the harms or guidelines around their use and were therefore reluctant to promote them. Several clients also expressed some concerns around the safety of e-cigarettes, as well as a dislike of the smell and 'clouds of smoke' they emit.

They all recommend the vapes. I don't know why. It's giving people popcorn lung. I don't know if it's true.

(Wayne)

This was just one of the health concerns expressed around the use of e-cigarettes, although many participants, both staff and clients, expressed their lack of expertise or confidence in this area, which may present a barrier to the provision or discussion around e-cigarettes and their potential use as a harm reduction tool.

Recovery

The theme of recovery was brought up many times throughout the interviews and is closely linked to the discussion of prioritisation above. Despite smoking being seen as a lower priority than other substance use or mental health concerns, there was still a broad consensus that smoking should be addressed within treatment services.

But if we are going down that route…and you're moving into the realms of improving somebody's overall well-being. And if you're going to start playing in that arena, Then you don't just bite off a little piece and forget the rest, you play properly.

(Steve)

There was disagreement about when and how it should be addressed, but several participants from both groups suggested that the role of the services was to promote and encourage 'recovery'. This term means many different things to different people, but in this context, it was used to refer to the process of improving one's life.

Social support

Smoking cessation was seen by many as part of a wider journey to improve the wellbeing of clients, both physically and mentally. There are many definitions of recovery, but a focus on self-improvement is central to all. Smoking cessation was felt to be an important part of this, but that it should be addressed as part of the wider journey which impacted on both physical and mental health. Healthy eating, exercise, sleep and emotional self-care were other integral components. One important point to note is the importance several client participants placed on emotional support when addressing smoking. No staff mentioned this, yet three clients did, stressing how important this is and the different forms it could take, from peers, staff or friends and family. One participant cited a support group that he regularly attended as a main driver in his sobriety, pointing out that this type of support would be greatly beneficial when trying to stop smoking.

It could be literally just a text message saying 'another nicotine free day I hope' something along those lines, wouldn't have to be half an hour bleeding my heart out across a table in front of strangers.

(Rick)

The concept of recovery was never explicitly defined by the researcher or the participants, but many of them discussed their perceptions of recovery and the broader approach to well-being that it encompasses.

Starting to think about, you know, longer term goals, like, well, can I get back to work, kind of start with a bit of volunteering, you know, what can I do to improve me, kind of, you know, positive social circle, and it's just, it's just those next steps to getting back to it, but a life that will make them happy.

(Diane)

Recovery was also linked to well-being, both physical and mental. Participants discussed options to improve wellbeing which they either had experience of or thought could be effective, including healthy eating, physical activity and sleepy hygiene. Especially in residential treatment, the focus on how to use the time there to make positive changes and prepare for life 'out there'. One participant explained that his time in rehab could have been used to make more life changes, and he recognised the importance of the safe space, surrounded by a support network, to begin to make these changes which included smoking cessation. At the time of the interview, this participant was in a second period of residential treatment.

I think it'd be a good idea to do that, because people, when you're in somewhere like this you can feel yourself changing, people are embracing change, you know. It'd be a good time to do that, get rid of both while you can. Cause I know what it's like, you get wrapped up in here, once you get back out there it all catches back up with you and you just carry on like normal.

(Tom)

Timing

Timing is a crucial element of any recovery journey, and the timing of offering or providing smoking cessation was one which came up repeatedly throughout the interviews with both staff and clients. The period of being in substance use treatment was generally seen as an opportunity to influence positive change, although different participants had different ideas about what that might look like. As discussed elsewhere, the concept of quitting more than one substance at a time remains controversial, and many had strong views on the matter.

Because you're dealing with one problem, one addiction. To have to deal with two at the same time, it would be very, very difficult for a person to cope with. You know, they've got one little vice and maybe after they've cleared up the first one, once they've come out you can tackle it then, but I just don't think two in one go is very wise and for health reasons, you know, mentally and physically it's not good.

(Colin)

Although some supported the notion of a smoking cessation programme delivered alongside either substance reduction / abstinence treatment, others felt strongly that this was not the time to address smoking. Both staff and clients presented both views, with no clear division or rationale for why this might be. As discussed above, the feeling was that addressing more than one issue at a time would be stressful and counterproductive, but nearly all agreed that opening discussions about smoking would be a positive step.

Not to try to put it into practice there and then but just to plant the idea in people's minds. Set the seed if you like. To be aware and to be, you know, sort of aware of what it's doing, but then just gradually, gently reduce. But not full on, go from everything to nothing. But just set the seed.

(Diane)

This reflected a positive and recovery-oriented approach, as rather than a short-term fix, treatment and recovery was seen as a longer-term journey which would address other aspects of one's life and health, but not all at once. Importantly, this approach was championed more by those who disclosed that they had been in recovery for over a year themselves and were using their own experiences to inform their opinions.

Like, you know, there's no point giving up alcohol and drugs if you just kind of like, you know, smoke yourself to death. There's no point no like, sort of rose tinted glasses or anything like that, you know, looking back and saying I wish I'd done this, I wish I'd done that. Those sort of regrets. And I'm still doing it. I'm addressing it and addressing it now.

(Gary)

Smoking was seen by almost all participants as something which could be incorporated as part of the recovery journey, although the timing of this was still debated.

Choice

A key aspect of the concept of recovery is that it is a holistic, person-centred approach. It encompasses more than addressing the problematic use of one or more substances to include a much broader sense of self improvement. This may look very different to different people, which is why treatment services need to provide different options.

Choice, agency and well-being were key features underpinning many of the suggestions made by stakeholders from all groups. Many of the practical suggestions for intervention design had conflicting suggestions, but the overarching theme was that of choice; clients should have a choice in whether they want to quit smoking in the first place, a choice in when, where and what that support might look like. It was felt important to offer rather than enforce any interventions regarding smoking cessation, and that any punitive approaches were not acceptable.

Some people in treatment felt like their choices had been taken away from them, either in reaching a situation where they knew they needed support and had to give up their substance use, or because of the limited flexibility of available treatment options. One staff member discussed how she felt that by telling people not to quit smoking, or by not promoting smoking cessation as a valid option, the staff were contributing to this removal of choice.

But it's still the same behaviours of staff just making decisions for people. So we used to get a lot smoking, it's everything they've got left. They stop smoking crack. They're not taking heroin. While they're not drinking, they need to smoke. And I was like, why? It's a thing? Like, why would you think that it's a bonus that they still smoke, it's just fucking bizarre, absolutely bizarre. But they, just take the decision and the liberty away from the person making that decision. But really in a negative way of not even having conversations about what we thought.

(Tasha)

From a behavioural perspective, choice is a key component of effective treatment. Any potential approaches which included coercion rather than offering someone a choice was regarded as inappropriate and ineffective.

But I doubt about like banning smoking in residential treatment because when I was there, they took away television for a day like there was a riot. So taking away smoking as well. I think it'd be seen as a punishment, it looks like an unnecessary punitive measure.

(Cathy)

Even those who didn't smoke agreed that any type of enforced smoking ban in a service, or even removing smoking breaks from group sessions, would be met with frustration. There were concerns that any attempt at coercion would discourage clients from engaging with treatment and cause resentment. Likewise, when discussing the issue of staff smoking in and around services, few suggested that this should be banned.

The only consensus on what smoking cessation support should look like was that choice should be a key component. This may include client defined outcomes, whether that be a reduction, total abstinence or something else altogether. One staff participant discussed the need for a harm reduction approach, and how this had been expanded to include tobacco:

> *When they come to the needle exchange, people are surprised. We've actually got filters, cigarette filters, and they're actually surprised that we use the cigarette filters. Not as like, yeah, rather than to actually filter your drugs out of the spoon... They'll make you live a little bit longer if you're going to smoke a roll up then filter it. Yes, people do take them like people do come in and ask just for those, to use them and prolong their life.*

(Gary)

A client also expressed the importance of harm reduction and choice, pointing out that abstinence is not the end goal for all PWUD/A.

> *And not everybody wants to achieve abstinence. Some people who attend smoking cessation may just want to reduce the amount they smoke, or what they smoke, or the strength, the amount, when they start smoking of a day when they stop smoking of a day.*

(Pete)

Vaping was also discussed in the context of harm reduction, although, as discussed earlier, opinions and knowledge varied greatly. A few participants (from both groups) who had switched exclusively to vaping were positive about the change and the impacts it had. There were a couple of suggestions that e-cigarettes should be prescribed or promoted as a smoking cessation intervention, and that rules regarding vaping in and around services should be relaxed. These opinions were divided among all groups and seemed to depend on personal experiences rather than definitive knowledge or understanding of the risks.

> *And cocaine users you know it's then it's just off the scale of them so if I was you know if I was drinking heavily I would smoke 30 plus a day, but now ya know I can as I say I mean the vaping it's not the same, it's not as good. It's not the kind of same combination of chemicals.*

(Simon)

Choice was a key feature of many of the interviews, and reasons for its importance included increased sense of self-worth, self-efficacy and improved rates of uptake, retention and engagement with treatment, whether that was related to smoking cessation or substance use more broadly. It was also related to acceptability, as well as client engagement, as one staff member pointed out, clients were more likely to attend and engage with services that they felt connected to and which offered choice.

> *If the clients don't like it, it's not gonna work. There's no point me just going I've decided this is how it's going to work and you should turn up. It's pointless and they won't engage and Yeah, it's not about that, it's about going, what do you want? How can we help you with this? How can we make that happen?*

(Chris)

In addition to choice, this illustrates the importance of client relationships and ensuring that their needs are met.

One of the key aims of this is research is to improve the sense of agency and control over the individual's treatment options, in order to build agency and autonomy and foster a sense of self-efficacy. This is important because often adults in treatment are not given adequate choices about their treatment, and this contributes to stigma and discrimination.

6.5.2 Deductive analysis

The second, deductive analysis focused on identifying any suggestions or recommendations for the design, implementation and delivery of a potential smoking cessation intervention for delivery in substance use treatment services. Any items coded in this analysis were imported into an Excel document, which allowed for the identification of frequencies with which each code occurred, and if staff or clients (or both) suggested it. This information is illustrated in the Table 18, which shows the code or idea, sub-theme, and frequency in which it was identified in the data. Codes or ideas were also explored using post-it notes, which enabled them to be grouped and rearranged multiple times to identify appropriate groupings and relationships between them. Sub-themes are discussed below in more detail.

Table 18 **Frequency of ideas and sub-themes identified within deductive analysis by clients and staff.**

Idea	Staff	Clients	Sub-theme	Frequency
Accessible and available		X	Set and setting	14
Group sessions		X	Set and setting	13
Later in recovery		X	Timing	8
Peer influence (positive)		X	Types of support	8
Vaping		X	Alternative approaches	8
Build on success		X	Components	7
Pharmacotherapy		X	Alternative approaches	7
Educate		X	Components	6
Follow ups	X	X	Set and setting	6
Specialist support	X	X	Types of support	6
Ban smoking		X	Environmental and organisational aspects	5
Established relationships		X	Types of support	5
Need for trust		X	Types of support	5
Offer at any stage	X	X	Timing	5
Sense of achievement		X	Components	5
Easy for staff	X	X	Environmental and organisational aspects	4
Encourage quitting		X	Components	4
Incorporate into existing programmes		X	Environmental and organisational aspects	4
Make smoking less socially acceptable		X	Environmental and organisational aspects	4
Tailored outcomes	X	X	Components	4
Use other services GP etc	X	X	Environmental and organisational aspects	4
Bio feedback	X	X	Components	3
Incentives	X	X	Components	3
Integrate as part of service		X	Environmental and organisational aspects	3
MH support		X	Types of support	3
No smoke breaks		X	Environmental and organisational aspects	3
Plant seeds		X	Components	3
Repeat offer of support	X	X	Timing	3
Six-week workshop	X	X	Set and setting	3
Allocate a champion	X	X	Environmental and organisational aspects	2
Anxiety around quitting		X	Types of support	2
Coping strategies	X	X	Components	2

Set and setting

Many of the comments the different stakeholders made regarding a potential intervention included practical suggestions as to what the intervention should look like. Some of these were based on personal experiences of successful interventions, some were suggested to maximise engagement. First and foremost, the vast majority agreed that it should be organised as a group intervention of some kind. There was disagreement about other aspects, but all who felt that this was an important issue to address agreed that group delivery was important.

As discussed above, a key aspect of any intervention is that it should be available and accessible. This took different forms for different participants, and to some extent would vary depending on the service hosting the intervention. Several members of staff suggested times and days of the week when they had a higher attendance rate, or suggested a drop-in clinic, or a rolling group which people could start at any point in the group timeline. These were related to the specific services and people working there or accessing services, as such it is not appropriate to make any generalised assumptions about the desired time or day of the week on which to run these sessions, but it is important to note that this should be decided on a case by case basis, with the input of those staff and clients with knowledge of the specific services.

Timing

Timing was discussed as an important aspect of any intervention, specifically the timing in regard to the treatment process. Despite evidence to the contrary, many participants from all groups expressed concern about addressing smoking at the same time as another substance and fear of relapse. It was generally suggested by participants from all groups that smoking cessation should be addressed once sobriety or abstinence from other substances was established, although several participants did suggest regularly offering and following up with clients about smoking cessation, and it being available to them at any stage of their treatment journey.

Alternative approaches

Several approaches were suggested in addition to traditional behavioural or pharmacological support: acupuncture, hypnosis and e-cigarettes. Acupuncture had previously been offered in a service where one of the participants had worked, and it was felt to be beneficial to well-being, although it was not targeted at smoking cessation. Vaping or e-cigarettes were frequently mentioned, with many clients and staff speaking favourably of their own experiences.

Environmental and organisational aspects

A key aspect that was brought up by many participants (primarily staff but not exclusively) was the concern around staff workloads, perceived lack of skills or knowledge, and how any potential intervention would fit into the services already provided. For some, this was an ideal opportunity to improve their skills and knowledge and to use existing skills and abilities in new ways. For others, smoking cessation was far from their comfort zone and they did not feel confident advising clients on how to quit smoking. Especially post-pandemic, there was a feeling from staff of being overworked and overwhelmed. There were concerns about an already stretched service having to offer more interventions without additional staff or support. If future interventions are to be acceptable and feasible, this is something that needs to be addressed at an organisational level.

Staff also cited the need for clear pathways for referral to smoking cessation support, and the integration of smoking cessation into the service at all levels in order to challenge long held organisational norms. Many from all groups also felt that smoking cessation was not prioritised in services, but that it should be.

There were also discussions about the prevalence of smoking in substance use treatment services. Unsurprisingly, many felt that smoking was an ingrained part of the services and did not know how to challenge this. Some participants felt that banning smoking from the services altogether would help to reduce the social acceptability of smoking, whereas others felt strongly that any kind of ban would provoke bad feeling and reduce engagement with the substance use services, which is their primary purpose. Many felt that staff should be presented as role models, and as such should not smoke in or around the services. Even staff who smoked themselves agreed with this, although several discussed the use of smoking breaks to build rapport with clients and to bond over the shared semi-illicit activity. Smoking breaks in groups were also discussed by many, as they were felt too to be an ingrained and integral part of any service. Benefits such as developing the therapeutic relationship and offering a relief from tense and challenging group sessions were cited as reasons to keep the smoking breaks, whereas the desire to reduce social acceptability of smoking and reduce the feeling of being 'left out' for any non-smokers were reason to remove the breaks.

Types of support

As well as the above-mentioned aspects of an intervention, one of the most cited suggestions was the need for adequate support, and the different types of this. These included practical support, emotional support and social support. Relationships were also important, as was the building of trust. Several participants who stated that they would feel comfortable attempting to give up smoking if support were offered from the treatment service cited the relationships with staff and peers as an important factor. Relationships with 'experts' such as health professionals or experts by experience were also mentioned, with peer support being strongly supported.

Components of intervention or behaviour change techniques

The findings from the deductive analysis, particularly those identified as 'components' in the table above, were also mapped onto the Behaviour Change Technique Taxonomy (v1) (Michie et al., 2013) in order to identify the behaviour change techniques (BCTs) recommended for inclusion in a potential intervention. Many suggestions were made about the active components of a potential intervention, including the use of financial incentives, using biofeedback such as carbon monoxide monitors and the use of pharmacological approaches, such as NRT (nicotine replacement therapy). The data coded in this sub-theme was then analysed further, to identify the behaviour change techniques that stakeholders had recommended for inclusion in a potential intervention for smoking cessation in substance use treatment services.

Using the deductive framework approach detailed in Chapter 4, the interview data was analysed and coded using the BCCTv1 (Michie et al., 2013) as the framework to identify and code any BCTs that were included.

This process identified 20 different BCTs, which are listed in the table below with their descriptions from the BCTTv1. The following chapter, Behaviour Change Synthesis, uses these findings along with those from the previous two studies, to produce a set of recommended BCTs for inclusion in a smoking cessation intervention. This is explored in later chapters, but findings are summarised here for ease of interpretation.

Table 19   BCTs identified within deductive analysis (Part i).

BCT number	BCT description
1.2 Problem solving	Analyse, or prompt the person to analyse, factors influencing the behaviour and generate or select strategies that include overcoming barriers and/or increasing facilitators
2.1 Monitoring of behaviour by others without feedback	Observe or record behaviour with the person's knowledge as part of a behaviour change strategy
2.3 Self-monitoring of behaviour	Ask the person to affirm or reaffirm statements indicating commitment to change the behaviour
2.6 Biofeedback	Provide feedback about the body *(e.g., physiological or biochemical state)* using an external monitoring device as part of a behaviour change strategy
3.1 Social support (unspecified)	Advise on, arrange or provide social support *(e.g., from friends, relatives, colleagues,' buddies' or staff)* or non-contingent praise or reward for performance of the behaviour
3.2 Social support (practical)	Advise on, arrange, or provide **practical** help *(e.g., from friends, relatives, colleagues, 'buddies' or staff)* for performance of the behaviour
3.3 Social support (emotional)	Advise on, arrange, or provide **emotional** social support *(e.g., from friends, relatives, colleagues, 'buddies' or staff)* for performance of the behaviour
5.1 Information about health consequences	Provide information (e.g., written, verbal, visual) about health consequences of performing the behaviour

Table 20   BCTs identified within deductive analysis (Part ii).

BCT number	BCT description
6.2 Social comparison	Draw attention to others' performance to allow comparison with the person's own performance
8.2 Behaviour substitution	Prompt substitution of the unwanted behaviour with a wanted or neutral behaviour
9.1 Credible source	Present verbal or visual communication from a credible source **in favour of or against the behaviour**
10.1 Material incentive (behaviour)	Inform that money, vouchers or other valued objects **will be** delivered if and only if there has been effort and/or progress in performing the behaviour
10.4 Social reward (behaviour)	Arrange verbal or non-verbal reward if and only if there **has been** effort and/or progress in performing the behaviour
11.1 Pharmacological support	Provide, or encourage the use of or adherence to, drugs to facilitate behaviour change
11.2 Reduce negative emotions	Advise on ways of reducing negative emotions to facilitate performance of the behaviour
12.1 Restructuring the physical environment	Change, or advise to change the **physical** environment in order to facilitate performance of the wanted behaviour or create barriers to the unwanted behaviour
12.2 Restructuring the social environment	Change, or advise to change the **social** environment in order to facilitate performance of the wanted behaviour or create barriers to the unwanted behaviour
15.1 Verbal persuasion about capability	Tell the person that they can successfully perform the wanted behaviour, arguing against self-doubts and asserting that they can and will succeed
15.3 Focus on past success	Advise to think about or list previous successes in performing the behaviour (or parts of it) Advise to think about or list previous successes in performing the behaviour (or parts of it)

6.6 Discussion

The four themes: organisational and policy factors; risk perception and prioritisation; choice and recovery are all connected, and all have implications for any potential proposals to address this issue of smoking in substance use treatment services.

Many of the issues discussed around organisational and policy factors, as well as risk perception and prioritisation offer some insight into potential barriers that exist at different levels, all of which need addressing. Prioritisation of smoking cessation within services needs to come from commissioners and organisations delivering services, in order to address issues around capacity and smoking cessation being seen as something that services do have a responsibility to provide. This also needs to be communicated to staff at all levels, to ensure their prioritisation of smoking cessation.

From the client perspective, substance use services are an appropriate setting to offer smoking cessation support, and many staff agreed. However, there are many barriers which are currently preventing this from taking place. Staff highlighted that they didn't feel like they had capacity to offer this, as they had neither the time, knowledge nor desire to run sessions on smoking cessation. This is a key issue which needs to be addressed in order to improve service delivery. Although research suggests that staff in services are aware of the need for smoking cessation and its importance, these findings suggest that this is not always the case. Even for those who recognised the importance, there was confusion over existing pathways and routes to signpost clients to, which echoes previous studies on this topic (LoParco et al., 2022).

Another barrier was the common belief that one substance should be addressed at once, and in the order of most immediate risk. Again, this is despite evidence that treating both tobacco and other substances at the same time actually improves outcomes for both (Thurgood et al., 2016; Britton et al., 2003). Some staff reported being told by supervisors not to offer smoking cessation, and to discourage any quit attempts, in the belief that this would jeopardise outcomes for the primary substance. This is likely to be influencing social norms within treatment (Knudsen, 2017), as several clients also reported being advised against quitting smoking, and others that it wasn't and shouldn't be an immediate priority. Although there is evidence that treating multiple substances at once may be effective, it does appear to be concern among both staff and clients that it would be challenging and is off putting. In this case, offering smoking cessation as and when the client is ready would appear to be a suitable option. The acceptability of any intervention or treatment option is crucial in its effectiveness, so this needs to be addressed by ensuring information is communicated clearly and risks understood so that the client can make an informed choice about their own treatment. This highlights the need for more accurate risk communication, but also the need to embed smoking cessation within services to challenge these existing norms.

This is also true regarding the use of e-cigarettes, as the misconceptions and general sense of mistrust surrounding them led to skewed risk perceptions for some participants. Better information on these and how they could be incorporated into a smoking cessation programme would be beneficial to both staff and clients. This is evidenced by existing literature that public perceptions of vaping are not in line with the evidence on risks, and that this can influence behaviours, and reinforces the need for better communication and evidence sharing among organisations, as staff did not always have

the information they needed to provide informed treatment, as well as feeling that they lacked competence in this area (Le et al., 2021a).

Many of these points highlight the need for staff engagement with any change in process that would be associated with introducing smoking cessation within substance use treatment services. They are key stakeholders with significant influence on the delivery of services and the responses of clients, so it is of paramount importance that they are included in any potential intervention development and their perspectives considered. In order for any intervention to be successful, it is important that it is acceptable to staff (Borelli et al., 2015; Proctor at al., 2009). This may mean addressing their concerns about capacity and lack of specialist knowledge, by acknowledging their already high workload and how this has changed in the last few years in response to the pandemic. Where possible, the barriers they have identified need to be addressed and solutions found which empower staff to work with clients in a person centred and informed way.

This study and the previous one (Swithenbank, Harrison and Porcellato, 2022) demonstrate that the therapeutic relationship between staff and clients is an important aspect of successful treatment, and many clients felt that the staff they knew and respected would be ideally placed to support them through smoking cessation. Enabling staff to feel confident in having conversations about smoking cessation could be a significant component in changing norms within treatment and making clients feel more positive about smoking cessation. Staff are ideally placed to ensure messages about smoking cessation and available services are delivered, by building on existing relationships and trust with clients. Many clients felt it was important to have someone who understood their concerns about smoking cessation in the context of other substances, and that their keyworkers or peers would understand these concerns.

Choice and its role in treatment is another key aspect of the findings. As mentioned above, acceptability is an important element of any treatment options, but especially in substance use treatment where power dynamics and stigma can already lead to a reduction in choices for people who use drugs or alcohol. As evidenced by the array of recommendations identified in the transcripts, one approach to smoking cessation is not going to be suitable for everyone. Where practical, treatment options should be flexible to encourage uptake and increase self-efficacy. A prescriptive approach does not allow for choice and a sense of agency and can feel restrictive to clients. Different perspectives on recovery and treatment need to be accommodated, so it is important to discuss options and priorities with the client. They may be envisioning a prolonged treatment journey where addressing their primary substance is merely the beginning of them making positive changes, or they may want a quick and practical approach to reducing the harms associated with their substance use. All of these and the vast array of options in-between them should be considered and the client should be empowered to make their own choices about their treatment and recovery. Whilst the evidence can be presented as to what is effective, there is no 'one size fits all' approach. Abstinence and harm reduction are both valid options and should be presented as such. Wherever possible, clients should be able to choose their own treatment outcomes with the support and guidance of the staff team.

Reflections on the pandemic; more challenges:

As the situation continued to unfold, I face additional challenges in continuing my research. The added complexities of doing research online, and from home, brought new challenges that the university, myself, and the treatment services didn't know how to handle. The rules around what was allowed, in terms of government guidance, and university guidance, were constantly changing. Looking back on this period, it seems hard to remember a time before Teams, Zoom and the like were so commonplace, but these were all new media to get used to.

As well as all of this, lockdown isolation and personal issues were taking a toll. In January 2021, I took a leave of absence and put my research on hold. While this was the right thing for me to do at the time, it did create some additional challenges when I eventually returned to the project. Much had changed, and the personal relationships which I had relied heavily on prior to the pandemic had shifted. New management in the services who didn't know me, and people who had agreed six months or a year earlier to take part who had moved on, or simply didn't have the capacity any more meant that I struggled with recruitment.

As well as this, the pandemic and its impacts were ongoing. Services had changed the way they worked, staff were facing huge challenges and burn out was unfortunately common. Research, especially into something like smoking cessation, was no one's priority.

6.7 Conclusions

Barriers to smoking cessation have been identified from different levels: organisational, staff and client. All of these need addressing in different ways, but some suggestions for future work and described below.

Organisation level barriers can be harder to address and require collaboration with services at all levels. Recommendations from the findings above take a more pragmatic approach, addressing staff and client perspectives and barriers to embedding smoking cessation within treatment services. As such, recommendations include the development of a brief intervention for staff to deliver, with an appropriate brief training package. This would include information regarding population specific knowledge and ways to engage clients with the idea of smoking cessation. This could be delivered quickly and easily once the training has been provided and acknowledges that staff have neither the time nor capacity to deliver an extended programme of smoking cessation. Brief interventions can take as little as 90 seconds and could be incorporated into any existing client contact. Another recommendation is the development of a more substantial intervention for clients of the services to address smoking. This would include some of the BCTs identified from participant data, as well as other intervention components such as mode of delivery. This needs to be available, accessible and acceptable to all stakeholders, but with a particular emphasis on acceptability to clients.

Table 21   Status of objectives associated with Study 3.

Objective	Status

To explore what staff and people accessing substance use treatment services think is acceptable in terms of smoking cessation.	This has been addressed using interviews with both staff and PWUD/A, and acceptability has been considered throughout this Study.
To determine which factors need to be considered when developing smoking cessation support for people in substance use treatment.	These factors have been identified and include a range of factors which include practical aspects of interventions, as well as acceptability and the attitudes of both staff and PWUD/A.
To identify barriers and facilitators to the implementation of and engagement with smoking cessation in substance use treatment services.	These have been identified from the analysis of the interview data and include those from staff and client perspectives.

Chapter 7 Behaviour change synthesis

7.1 Introduction

This chapter presents the behaviour change synthesis of the findings from Studies 1, 2 and 3. The first part of the chapter describes and explains the key concepts and theories behind behaviour change how these can be used to develop an intervention. The second part of the chapter will describe the process of creating a behaviour change intervention using the framework based on the BCW. Firstly, there is an overview of the BCW and associated theory, followed by a detailed account of how the preceding studies from Chapters 4, 5 and 6 were used to inform the development of a smoking cessation intervention based on these theories and tailored to a specific population.

7.2   Behaviour change approach

7.2.1   Behaviour change

Behaviour plays a critical role in health, and smoking is one of the behaviours that directly affects health. Changing behaviours is key to reducing health inequalities and reducing morbidity and mortality, especially when it comes to substance use and dependence. Behaviour change interventions attempt to change health and other behaviours, either reducing negative or risky behaviours or increasing positive or healthy behaviours. In smoking cessation, behaviour change interventions may include both; reducing smoking and increasing the use of pharmacotherapy or e-cigarettes. Michie et al describe behaviour change interventions as: *'An action or activity that aims to get an individual or population to behave differently from how they would have acted without such an intervention/ service'* (Michie, van Stralen and West 2011).

There are many different ways in which interventions can try to influence behaviours, and these have not always been well understood. In order to develop an effective and acceptable intervention, it is important to explore the different components of interventions and how they can be utilised. A framework can be useful for this, as it provides a systematic approach to intervention development. The Behaviour Change Wheel (BCW) offers such a framework and has been successfully used to develop many effective behaviour change interventions (Michie, Atkins and West, 2014).

7.2.2   The behaviour change wheel

The BCW was developed based on a systematic review of existing frameworks of behaviour change interventions and was designed to provide a new framework which addressed the issues and limitations that were identified from this review. The issues of comprehensiveness, coherence and links to an overarching theory or model of behaviour were identified, and the BCT aimed to address these, bringing together the best points from other frameworks into one cohesive yet flexible framework.

Figure 9   The Behaviour Change Wheel (Michie et al, 2011).
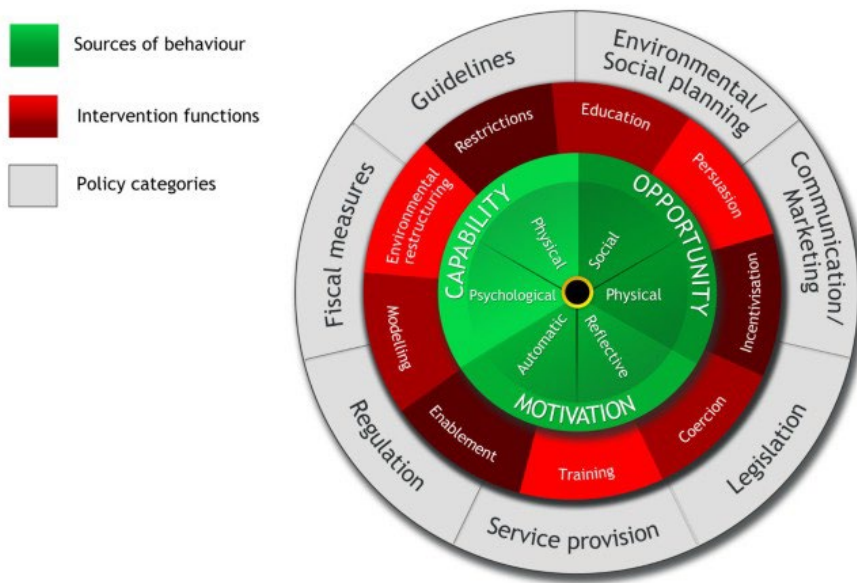
The BCW has three layers: the innermost uses the COM-B model identifies the sources of the targeted behaviour; the second layer identifies nine intervention functions; the outer layer identifies seven policy types which can be used to deliver the intervention. These are discussed in more detail later in this chapter. The BCW also incorporates the Behaviour Change Technique Taxonomy v1, a set of 93 distinct behaviour change techniques which can be used to identify and describe active components of behaviour change interventions. These are discussed below in relation to intervention design and development (Michie et al., 2013).

7.2.3 COM-B

The COM-B model is at the core of the BCW and provides the theoretical starting point for understanding behaviour (Michie, van Stralen and West, 2011). COM-B stands for Capability, Opportunity, Motivation – Behaviour. The central premise is that in order for any behaviour to occur, three conditions must be met: the actor must have the capability to perform it; the opportunity for it must occur and there must be sufficient motivation to perform it. Each of these constructs can be broken down into two types: capability can refer to physical or psychological capability to perform a behaviour; opportunity can either be physical or social; and motivation can be either automatic or reflective. All of these components can be interlinked and behaviour can be influenced by modifying one or more of them. The diagram below illustrates the ways in which these components are linked and influence each other.

Figure 10   **The COM-B model of behaviour (West and Michie 2020).**
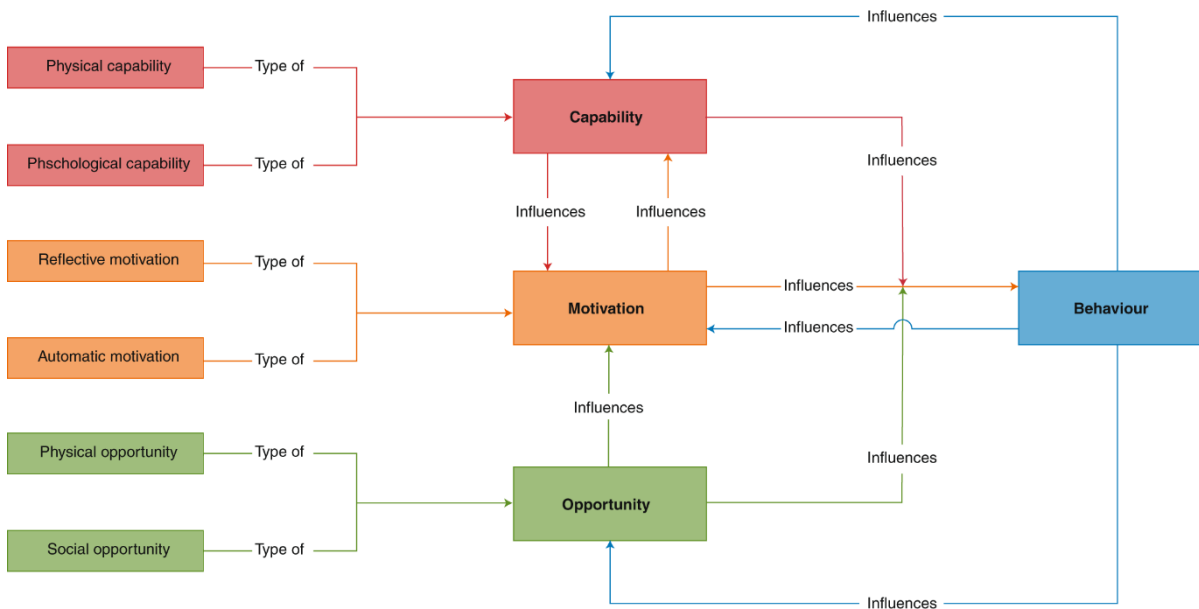
The high-level components identified in the COM-B model can be further elaborated into a more detailed tool which can be used to better understand behaviour. This is known as the Theoretical Domains Framework (TDF) and it is made up of 14 domains which are all sub-constructs of the COM-B model (Michie et al., 2005).

7.2.4   Theoretical domains framework

The TDF was developed by Michie et al, to simplify the use of theory in behaviour change studies and make their usage more accessible. It builds on the COM-B systems to further identify barriers and facilitators to behaviour change and can be used to facilitate the design of behaviour change interventions as it provides a comprehensive and theory-based approach. The revised TDF consists of 84 constructs which are sorted in 14 domains. These are illustrated below in Table 22 as they map onto the COM-B constructs (Cane, O'Connor and Michie, 2012).

Table 22   COM-B and Theoretical Domains Framework.

COM-B	Theoretical Domains Framework
Physical capability	**Physical skills** A physical ability or proficiency acquired through practice.
Psychological capability	**Knowledge** An awareness of the existence of something.
	Cognitive and interpersonal skills A cognitive or interpersonal ability or proficiency acquired through practice.
	Memory, attention and decision processes The ability to retain information, focus selectively on aspects of the environment and choose between two or more alternatives.
	Behavioural regulation Anything aimed at managing or changing objectively observed or measured actions.
Physical opportunity	**Environmental context and resources** Any circumstance of a person's situation or environment that discourages or encourages the development of skills and abilities, independence, social competence, and adaptive behaviour.
Social opportunity	**Social influences** Those interpersonal processes that can cause individuals to change their thoughts, feelings, or behaviours.
Reflective motivation	**Social/professional role and identity** A coherent set of behaviours and displayed personal qualities of an individual in a social or work setting.
	Beliefs about capabilities Acceptance of the truth, reality, or validity about an ability, talent, or facility that a person can put to constructive use.
	Optimism The confidence that things will happen for the best or that desired goals will be attained.
	Beliefs about consequences Acceptance of the truth, reality, or validity about outcomes of a behaviour (in a given situation).
	Intentions A conscious decision to perform a behaviour or a resolve to act in a certain way.
	Goals Mental representations of outcomes or end states that an individual wants to achieve.
Automatic motivation	**Reinforcement** Increasing the probability of a response by arranging a dependent relationship, or contingency, between the response and a given stimulus.
	Emotion A complex reaction pattern, involving experiential, behavioural, and physiological elements, by which the individual attempts to deal with a personally significant matter or event.

7.2.5   Intervention types

The second layer of the BCW looks at intervention types and functions (see Table 23 below) for list and definitions. Once areas which need to change in order for the desired behaviour have been identified using the COM-C and TDF, the next step of intervention design following the BCW process is to identify intervention functions which best suit these.

Table 23   Intervention types.

Intervention type	Definition
Education	Informing or explaining things to increase knowledge or understanding relating to a behaviour.
Persuasion	Using words and images to get people to feel liking or disliking for something in order to influence behaviour.
Incentivisation	Applying rewards to a behaviour.
Coercion	Applying costs or punishments to a behaviour.
Training	Using demonstration, feedback, and practice to improve physical or psychological skills such as ability to analyse information and plan on the basis of that information.
Restriction	Using formal social rules to set boundaries for a behaviour.
Environmental restructuring	Shaping the physical or social world inhabited by a person to make a behaviour easier or harder, or appear more or less normal, or to add or remove prompts.
Modelling	Providing an example for people to imitate, learn from or aspire to.
Enablement	Providing physical or social support, or material or financial resources that make it possible or easier to enact a behaviour.

The COM-B and TDF frameworks can be linked to intervention functions to help identify the most suitable functions, as seen in a table below. The COM-B components and the intervention functions which are relevant to each one are also highlighted in tabular form.

Table 24   Matrix of links between COM-B and intervention types.

		Intervention types (functions)								
		Education	Persuasion	Incentivisation	Coercion	Training	Restriction	Environmental restructuring	Modelling	Enablement
COM-B components	Physical capability					X				X
	Psychological capability	X				X				X
	Physical opportunity					X	X	X		X
	Social opportunity						X	X	X	X
	Automatic motivation		X	X	X	X		X	X	X
	Reflective motivation	X	X	X	X					

Source: Michie, Atkins and Gainforth (2016)

7.2.5.1 Selecting intervention types

The table below demonstrates the intervention functions and relevant COM-B components, with those relevant to smoking cessation interventions for delivery in substance use treatment services indicated with an x. These have been determined following the guidance laid out in the Behaviour Change Wheel: a Guide to Designing Interventions (Michie, Atkins and West, 2014), and those relevant to smoking cessation identified using pre-existing research and knowledge on smoking cessation, as well as the contextual knowledge about the setting and the scope of this research. For example, environmental restructuring may be effective at effecting motivation to smoke (or not) but is not something can be achieved without wider support and financial investment.

Table 25   Indicative mapping of intervention functions onto COM-B construct.

	Capability	Opportunity	Motivation
Education	X		X
Persuasion			X
Incentives			X
Coercion			X
Training	X		X
Restriction		X	
Environmental restructuring			
Modelling			X
Enablement	X	X	X

*grey shading indicates that the intervention type maps on to the COM-B construct, x indicates that is it appropriate for this context.

Some examples of how each COM-B construct can be used in this context are listed in Table 26 below, for both addressing smoking cessation behaviours (which components might need to be addressed in order for clients to consider or undertake smoking cessation) and behaviours which encourage smoking cessation (which constructs might need to be addressed in order for staff to offer, signpost or deliver smoking cessation advice or interventions). These are provided alongside examples of intervention functions which would address each COM-B component. This table indicates that training and education; incentivisation; persuasion; enablement, and modelling are appropriate intervention functions for this context. As above, these have been informed by the BCW and book, as well as by existing research and knowledge of smoking cessation and the context of substance use treatment services.

Table 26 **COM-B influences on smoking cessation behaviours with examples and functions.**

COM-B component	Smoking cessation behaviours	Behaviours for encouraging smoking cessation	Example of intervention function
Physical capability		Need to develop effective communication skills	Training
Psychological capability	Need knowledge of benefits of quitting smoking	Need knowledge and skills to offer smoking cessation advice and information	Training and education
Physical opportunity	Need access to support group and services	Need to create time and opportunity for client encounters	Enablement
Social opportunity	Need opportunity to connect with peers and support each other to change	Need opportunity to model behaviours and connect with clients	Modelling and enablement
Automatic motivation	Need to feel that they want to quit smoking	Need to feel positive about offering smoking cessation	Persuasion
Reflective motivation	Need to develop a plan to improve self-belief	Need to develop beliefs that smoking cessation is important and that staff can have an impact	Incentivisation

7.2.6   BCTs

Behaviour change techniques are the components which make up behavioural interventions. They can be defined as:

> *'planned processes that are the smallest parts of the content of a behaviour change intervention that are observable, replicable and on their own have the potential to bring about behaviour change'*

(Michie et al., 2020).

These BCTs have been developed into a taxonomy, which offers a widely used classification of BCTs which are organised into groups by function. The Behaviour Change Techniques Taxonomy v1 (BCTT v1) includes 93 distinct and non-overlapping, clearly defined BCTs, ordered into 16 groupings by function. This taxonomy offers a standardised way of recognising and replicating the active components of behaviour change interventions, which can be identified in intervention reports and used in evidence synthesis, such as the ICSmoke study discussed in earlier chapters. Recommendation 7 from the NICE guidelines discussed below emphasises the need to use proven BCTs in intervention design, showing there is a need for an understanding of the importance of identifying and reproducing BCTs when designing and implementing an intervention.

7.1.6.1 Selecting BCTs

From the table above, the intervention functions deemed appropriate for this intervention are: Education; Persuasion; Training; Modelling; and Enablement. These were chosen based on a combination of perceived acceptability and practical considerations; any potential intervention needs to be as accessible and available as possible, so anything resource intensive or not deemed to be acceptable were excluded at this point.

Incentives may be effective but have questionable acceptability from some stakeholders, and also require resources which may not be available, and not within the scope of this PhD. Coercion was not deemed to be appropriate or acceptable within the recovery-focused approach, nor was restriction. Environmental restructuring is beyond the scope of this PhD and potential intervention, as it requires organisation support and resources that may not be available.

These intervention functions can be used to identify potential BCTs for the intervention using the BCW and accompanying book. Below are some BCTs which are related to each of these intervention functions. Although there are many BCTs which are related to each intervention function, below are a selection of relevant and commonly used BCTs for each function for interventions targeting individuals (Michie, Atkins and West, 2014, p151).

Table 27   Linking BCTs to intervention functions (Part i).

BCT			Intervention Function
Number	**Label**	**Definition**	
1.1	Goal setting (behaviour)	Set or agree on a goal defined in terms of the behaviour to be achieved.	Enablement
1.2	Problem solving	Analyse, or prompt the person to analyse, factors influencing the behaviour and generate or select strategies that include overcoming barriers and/or increasing facilitators.	Enablement
1.4	Action planning	Prompt detailed planning of performance of the behaviour (must include at least one of context, frequency, duration and intensity). Context may be environmental (physical or social) or internal (physical, emotional or cognitive).	Enablement
1.5	Review behaviour goals	Review behaviour goal(s) jointly with the person and consider modifying goal(s) or behaviour change strategy in light of achievement. This may lead to re-setting the same goal, a small change in that goal or setting a new goal instead of (or in addition to) the first, or no change.	Enablement
2.2	Feedback on behaviour	Monitor and provide informative or evaluative feedback on performance of the behaviour *(e.g., form, frequency, duration, intensity).*	Education
			Persuasion
			Training
2.3	Self-monitoring of behaviour	Establish a method for the person to monitor and record their behaviour(s) as part of a behaviour change strategy.	Education
2.7	Feedback on outcomes of the behaviour	Monitor and provide feedback on the outcome of performance of the behaviour.	Education
			Persuasion
			Training

Table 28   Linking BCTs to intervention functions (Part ii).

3.1	Social support (unspecified)	Advise on, arrange or provide social support *(e.g., from friends, relatives, colleagues,' buddies' or staff)* or non-contingent praise or reward for performance of the behaviour*.* It includes encouragement and counselling, but only when it is directed at the behaviour.	Enablement
4.1	Instruction on how to perform the behaviour	Advise or agree on how to perform the behaviour.	Training
5.1	Information about health consequences	Provide information (e.g., written, verbal, visual) about health consequences of performing the behaviour.	Education
			Persuasion
5.3	Information on social and environmental consequences	Provide information (e.g., written, verbal, visual) about social and environmental consequences of performing the behaviour.	Persuasion
6.1	Demonstration of the behaviour	Provide an observable sample of the performance of the behaviour, directly in person or indirectly e.g., via film, pictures, for the person to aspire to or imitate.	Training
			Modelling
7.1	Prompts / cues	Introduce or define environmental or social stimulus with the purpose of prompting or cueing the behaviour. The prompt or cue would normally occur at the time or place of performance.	Education
8.1	Behavioural practice / rehearsal	Prompt practice or rehearsal of the performance of the behaviour one or more times in a context or at a time when the performance may not be necessary, in order to increase habit and skill.	Training
9.1	Credible source	Present verbal or visual communication from a credible source in favour of or against the behaviour.	Persuasion

This table illustrates the different BCTs, along with their labels and definitions, which link to the chosen intervention functions (Education; Persuasion; Training; Modelling; and Enablement) as suggested by Michie et al. (2014).

7.2.7   Intervention development and policy

NICE guidance on individual approaches to behaviour change makes recommendations which inform intervention development for people over 16 to change behaviours which are damaging to health (NICE, 2014). This has been used to demonstrate the links between current policy and guidelines and how this research can fit within these. This will be considered in the recommendations put forward in Chapter 9. The recommendations are listed below, with the ones that are relevant to, or can be addressed by this type of intervention highlighted.

Table 29   NICE Recommendations for behaviour change interventions.

	Recommendations	Can this be addressed in an intervention?
1	Develop a local behaviour change policy and strategy	No
2	Ensure organisation policies, strategies, resources and training all support behaviour change	No
3	Commission interventions from services willing to share intervention details and data	No
4	Commission high quality, effective behaviour change interventions	No
5	Plan behaviour change interventions and programmes taking local needs into account	Yes
6	Develop acceptable, practical and sustainable behaviour change interventions and programmes	Yes
7	Use proven behaviour change techniques when designing interventions	Yes
8	Ensure interventions meet individual needs	Yes
9	Deliver very brief, brief, extended brief and high intensity behaviour change interventions and programmes	Yes
10	Ensure behaviour change is maintained for at least a year	Yes
11	Commission training for all staff involved in helping to change people's behaviour	No
12	Provide training for behaviour change practitioners	No
13	Provide training for health and social care practitioners	Yes
14	Assess behaviour change practitioners and provide feedback	No
15	Monitor behaviour change interventions	Yes
16	Evaluate behaviour change interventions	Yes
17	National support for behaviour change interventions and programmes	No

Many of the recommendations in the table above fall under different policy options that are outside of the scope of this project, however several fit into the category of service provision and can provide a useful guide to ensure that proposed interventions meet these recommendations. This should help to ensure the interventions are in line with current policy and inform practice to be consistently evidence based. The remainder are around training and are therefore not applicable to this stage of intervention development and design.

7.2.8   Policy and the behaviour change wheel

Another function of the BCW is to identify relevant policy options to address the behaviour change needs identified in earlier stages of the design process. As with the NICE guidelines discussed above, many of the policy categories are beyond the scope of this project, as they would require more financial and political support than is available. The BCW links policy categories with intervention functions, as illustrated in the table below. Each policy category is also reviewed based in its suitability for the context of this project, with a brief summary of this is in final column.

Table 30   Policy categories from the behaviour change wheel and suitability in context of the research.

Policy Category	Definition	Suitability for this context	Details

Communication/ marketing	Using communication channels, including electronic, print and broadcast media and correspondence to deliver messaging.	No	Outside the scope of this project
Guidelines	Creating and disseminating guidelines.	No	Potentially effective, but would need buy in from management and higher organisation players
Fiscal measures	Implementing financial rules, including taxation.	No	Outside the scope of this project
Regulation	Creating and implementing regulations short of legislation.	No	Outside the scope of this project
Legislation	Developing and enacting laws.	No	Outside the scope of this project
Environmental/social planning	Using a formal planning process to create and implement changes to the physical or social environment.	No	Potentially effective but requires resources outside the scope of this project.
Service provision	Providing a service or resources.	Yes	Fits the scope of this project

The policy option that this research aligns with is service provision, other policy options are not appropriate at this stage of the intervention development process, although they might be relevant at later stages of implementation and expanding the context of the intervention.

7.2.9 Acceptability

A key aspect of an intervention is not just the smoking cessation component; in order to be effective, it must be acceptable. Without the support of both staff and clients, the intervention will struggle to recruit and to retain participants. Hulscher and Prins (2017) stated that 'choice of intervention should be informed by the factors that influence current behaviour (i.e., barriers and facilitators). The BCW incorporates an assessment tool which can be used to evaluate aspects of the intervention development based on a set of criteria: Acceptability; practicability; effectiveness; effectiveness; affordability; side effects / safety; and equity. The table below summarises each of these with a brief definition.

The APEASE tool can and should be applied at any stage in the intervention process, whether it is deciding whom to target, what behaviour(s) to target, whether it is better to focus on capability, opportunity or motivation, what intervention type(s) to adopt, what implementation option(s) to adopt or the details of the intervention.

Table 31   APEASE criteria and definitions.

Criteria	Definition
Acceptability	How far an intervention or some part of it is or is likely to be liked or engaged with.

Practicability	How far an intervention or part of an intervention can or is likely to be able to be delivered as planned and at the scale intended.
Effectiveness	How far an intervention or part of an intervention achieves or is likely to achieve a desired outcome and provides value for money.
Affordability	How far an intervention or part of an intervention can or is likely to be implemented within an available budget
Side effects / safety	How far an intervention or part of an intervention has or is likely to have unintended positive or negative effects.
Equity	How far an intervention or part of an intervention affects or is likely to affect inequalities.

As discussed previously, acceptability to all stakeholders, but especially to those receiving this intervention is paramount. When utilising the APEASE tool throughout the intervention design process, a particular emphasis has been placed on acceptability. If the component does not meet the acceptability criteria, it is automatically disregarded. This is a departure from the BCW suggestions for the implementation of the APEASE tool but is considered to be a critical element of an intervention for delivery in this context. As discussed in more detail in earlier chapters, and supported by findings from the qualitative study, acceptability to people accessing substance use treatment services is of key importance for both the effectiveness and engagement with any potential intervention.

The table below shows the use of APEASE to assess the intervention functions that have been identified as relevant for this context. Each intervention function is considered using each of the APEASE criteria and summarised with a final yes or no for potential inclusion in an intervention.

Table 32   APEASE assessment for intervention types.

	Acceptability	Practicability	Effectiveness	Affordability	Spillover Effects	Equity	Summary
Education	X	X	X	X	X	X	X
Persuasion	X	X	X	X	X	X	X
Incentivisation	X	X	X			X	
Coercion		X	X	X			
Training	X	X	X	X	X	X	X
Restriction			X	X			
Environmental restructuring	X		X		X	X	
Modelling	X	X	X	X	X	X	X
Enablement	X	X	X	X	X	X	X

*X indicates that the intervention type meets the specific criteria. X is the summary column indicates the intervention types which meet all APEASE criteria.

Acceptability here is the acceptability of an intervention type to all stakeholders, so it must be specially acceptable to the targeted recipients of the potential intervention: the clients of the treatment services. If this cannot be confirmed, then the intervention type is automatically discounted from the possible options. In order to also be feasible given the context of the intervention, intervention functions must also meet the other criteria as illustrated in the table above.

7.3 Applying the behaviour change wheel to intervention development

This section describes how the BCW was used to begin the process of behaviour change intervention development. The primary source of the data for this are the findings of the Qualitative study described in Chapter 6. Semi structured interviews were conducted with both staff and clients of substance use treatment services, and the interview transcripts were analysed to inform this study.

Following this, summaries of BCTs identified from each of the three previous studies will be presented, compared and assessed to produce a set of recommended BCTs for inclusion in the intervention.

Figure 11   Achieving Behaviour Change.

Achieving Behaviour Change
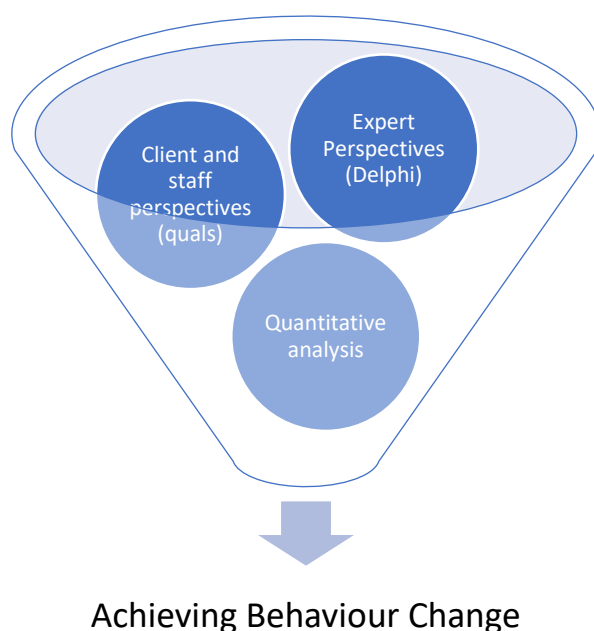
7.3.1   Intervention development

7.3.1.1 Qualitative study findings

The methods for the qualitative study (Study 3) is described in detail in Chapter 6, but the semi-structured interviews conducted in this study were not designed with the TDF or COM-B approach in mind. Instead, retrospective mapping of these models onto the interview schedule that was utilised for the semi-structured interviews that were conducted with both staff and clients has been done. Using questions specifically designed to identify TDF or COM-B constructs can result in the use of unsuitable language and wording for the study population, and may narrow the focus of the interviews, producing limited results. An inductive approach can identify issues which do not fit within the constructs of the frameworks but are still important to capture. By performing both an inductive and a deductive approach, a more nuanced understanding of the topic can be gained. This flexibility is another key feature of the inductive approach to analysis.

Appendix D includes the questions used in this study and illustrates how the questions and subsequently the answers given fit into the frameworks used to analyse the data from a behavioural change perspective, and how different questions were used to elicit information relevant to each domain. As discussed in more detail in Chapter 6, two different analyses were performed on the qualitative data collected in Study 3. Firstly, an inductive thematic analysis was conducted to identify themes within the data. Secondly, a deductive framework analysis was conducted to identify relevant information from the transcript data to map to the COM-B and TDF frameworks. This was sense checked by a researcher with experience in behavioural change research to ensure reliability and validity. The findings from the analysis were mapped onto the TDF and COM-B constructs, as illustrated in the table below.

Table 33   **Themes and sub-themes from thematic analysis of qualitative interview data mapped onto TDF domains and COM-B constructs (Part i).**

Theme	Sub-theme	TDF domain	COM-B micro construct	COM-B construct
Organisation and policy	legal status	Environmental context and resources	Physical	Capability
	barriers to implementation	Environmental context and resources	Physical	Capability
	barriers to implementation	Knowledge	Psychological	Capability
	barriers to implementation	Memory, attention and decision processes	Psychological	Capability
	current provision	Environmental context and resources	Physical	Capability
	capacity	Knowledge	Psychological	Capability
	harm reduction	behavioural regulation	Psychological	Capability
	influence on risk perception	Knowledge	Psychological	Capability
Risk perception and prioritisation	prioritisation based on perceived risk	Knowledge	Psychological	Capability
	misinformation	Knowledge	Psychological	Capability
	social, organisational and treatment norms	Environmental context and resources	Physical	Capability
	influence of legal status	Beliefs about consequences	Reflective	Motivation
	one thing at a time	Beliefs about capabilities	Reflective	Motivation
	social, organisational and treatment norms	Social influences	Social	Opportunity

Table 34 **Themes and sub-themes from thematic analysis of qualitative interview data mapped onto TDF domains and COM-B constructs (Part ii).**

Theme	Sub-theme	TDF domain	COM-B micro construct	COM-B construct
Choice	harm reduction	Knowledge	Psychological	Capability
	practicalities	Environmental context and resources	Physical	Capability
	increased uptake, retention and engagement	Environmental context and resources	Physical	Capability
	self-worth and self-efficacy	Beliefs about capabilities	Reflective	Motivation
	increased uptake, retention and engagement	Social influences	Social	Opportunity
Recovery	holistic, person centred	Environmental context and resources	Physical	Capability
	one thing at a time	Beliefs about capabilities	Reflective	Motivation
	plant the seed	Optimism	Reflective	Motivation
	self-belief	Beliefs about capabilities	Reflective	Motivation
	focus on improved well-being	Beliefs about consequences	Reflective	Motivation

The findings from the deductive analysis of the same qualitative data were also mapped onto the COM- and TDF constructs, which are also displayed in the table below.

Table 35 Themes and sub-themes from deductive analysis of qualitative interview data mapped onto TDF domains and COM-B constructs (Part i).

Idea	Theme	Sub-theme	TDF Domain	COM-B micro construct	COM-B construct
Harm reduction	Choice		Knowledge	psychological	capability
Healthy mind healthy body	Choice		Skills	physical	capability
Offer not enforce	Choice		Knowledge	psychological	capability
Addiction is addiction	Choice		Knowledge	psychological	capability
Reduction	Choice		Knowledge	psychological	capability
Acceptance of relapse	Choice		beliefs about capability	reflective	motivation
One thing at a time	Choice		Beliefs about capability	reflective	Motivation
Vaping	Practicalities	Alternative approaches	Environmental context and resources	physical	capability
Pharmacotherapy	Practicalities	Alternative approaches	Environmental context and resources	physical	capability
Educate	Practicalities	Components	Knowledge	psychological	capability
Build on success	Practicalities	Components	Beliefs about capability	reflective	motivation
Sense of achievement	Practicalities	Components	Beliefs about capability	reflective	motivation
Encourage quitting	Practicalities	Components	Optimism	reflective	motivation
Bio feedback	Practicalities	Components	Reinforcement	automatic	motivation
Incentives	Practicalities	Components	Reinforcement	automatic	motivation
Plant seeds	Practicalities	Components	Optimism	reflective	motivation
Coping strategies	Practicalities	Components	Emotion	automatic	motivation
Tailored outcomes	Practicalities	Components	Knowledge	psychological	capability

Table 36   Themes and sub-themes from deductive analysis of qualitative interview data mapped onto TDF domains and COM-B constructs (Part ii).

Idea	Theme	Sub-theme	TDF Domain	COM-B micro construct	COM-B construct
Ban smoking	Practicalities	Environmental and organisational aspects	Environmental context and resources	physical	capability
Easy for staff	Practicalities	Environmental and organisational aspects	Environmental context and resources	physical	capability
Incorporate into existing programmes	Practicalities	Environmental and organisational aspects	Environmental context and resources	physical	capability
Make smoking less socially acceptable	Practicalities	Environmental and organisational aspects	Environmental context and resources	physical	capability
Use other services GP etc	Practicalities	Environmental and organisational aspects	Environmental context and resources	physical	capability
Integrate as part of service	Practicalities	Environmental and organisational aspects	Environmental context and resources	physical	capability
No smoke breaks	Practicalities	Environmental and organisational aspects	Environmental context and resources	physical	capability
Allocate a champion	Practicalities	Environmental and organisational aspects	Social influences	social	opportunity
Six-week workshop	Practicalities	Set and setting	Environmental context and resources	physical	capability
Follow ups	Practicalities	Set and setting	Intentions	reflective	motivation
Accessible and available	Practicalities	Set and setting	Environmental context and resources	physical	opportunity
Group sessions	Practicalities	Set and setting	social influences	social	opportunity

Idea	Theme	Sub-theme	TDF Domain	COM-B micro construct	COM-B construct
Offer at any stage	Practicalities	Timing	Environmental context and resources	physical	capability
Repeat offer of support	Practicalities	Timing	Environmental context and resources	physical	capability
Motivated to change	Practicalities		Beliefs about capability	reflective	motivation
Later in recovery	Practicalities	Timing	Environmental context and resources	physical	opportunity
Specialist support	Practicalities	Types of support	Knowledge	psychological	capability
Peer influence (positive)	Practicalities	Types of support	Social influences	social	opportunity
Established relationships	Practicalities	Types of support	Social influences	social	opportunity
Need for trust	Practicalities	Types of support	Social influences	social	opportunity
Mental Health support	Practicalities	Types of support	Social influences	social	opportunity
Anxiety around quitting	Practicalities	Types of support	Social influences	social	opportunity

7.2.1.2 Prioritisation

In order to prioritise influences, they were assessed using a combination of frequency (number of times mentioned in interviews), elaboration (number of sub themes / themes) and expressed importance, which are summarised below. This table shows the key ideas, or concepts which were identified from the data analyses, and which theme / sub theme they belong to. Each idea or concept is rated by the frequency with which it was mentioned by all participants, and whether it was mentioned by staff or clients is also indicated.

Table 38   Frequency with which each idea was mentioned throughout the staff and client interviews (Part i).

Idea	Staff	Client	Theme	Sub-theme	Frequency
Accessible and available		x	Practicalities	Set and setting	14
Group sessions		x	Practicalities	Set and setting	13
Harm reduction		x	Choice		9
Healthy mind healthy body	x	x	Choice		9
Later in recovery		x	Practicalities	Timing	8
Offer not enforce		x	Choice		8
Peer influence (positive)		x	Practicalities	Types of support	8
Vaping		x	Practicalities	Alternative approaches	8
Build on success		x	Practicalities	Components	7
Pharmacotherapy		x	Practicalities	Alternative approaches	7
Educate		x	Practicalities	Components	6
Follow ups	x	x	Practicalities	Set and setting	6
Motivated to change		x	Practicalities		6
specialist support	x	x	Practicalities	Types of support	6
Ban smoking		x	Practicalities	Environmental and organisational aspects	5
Established relationships		x	Practicalities	Types of support	5
Need for trust		x	Practicalities	Types of support	5
Offer at any stage	x	x	Practicalities	Timing	5
Sense of achievement		x	Practicalities	Components	5

Table 39 Frequency with which each idea was mentioned throughout the staff and client interviews (Part ii).

Idea	Staff	Client	Theme	Sub-theme	Frequency
Acceptance of relapse		X	Choice		4
Easy for staff	x	X	Practicalities	Environmental and organisational aspects	4
Encourage quitting		X	Practicalities	Components	4
Incorporate into existing programmes		X	Practicalities	Environmental and organisational aspects	4
Make smoking less socially acceptable		X	Practicalities	Environmental and organisational aspects	4
One thing at a time		X	Choice		4
Tailored outcomes	x	X	Practicalities	Components	4
Use other services GP etc	x	X	Practicalities	Environmental and organisational aspects	4
Addiction is addiction	x	X	Choice		3
Bio feedback	x	X	Practicalities	Components	3
Incentives	x	X	Practicalities	Components	3
Integrate as part of service		X	Practicalities	Environmental and organisational aspects	3
MH support		X	Practicalities	Types of support	3
No smoke breaks		X	Practicalities	Environmental and organisational aspects	3
Plant seeds		X	Practicalities	Components	3
Repeat offer of support	x	X	Practicalities	Timing	3
Six-week workshop	x	X	Practicalities	Set and setting	3
Allocate a champion	x	X	Practicalities	Environmental and organisational aspects	2
Anxiety around quitting		X	Practicalities	Types of support	2
Coping strategies	x	X	Practicalities	Components	2
Reduction	x	X	Choice		2

The above table illustrates the frequency for each idea which came up in the staff and client interviews. Each idea is only counted once per participant, to give an idea of how many participants brought up each idea, and whether they were staff or client. Only ideas with a frequency of 2 or more were included here. Each idea has then been coded to one theme, and sub-theme if relevant. A summary table with the frequency for each theme and sub-theme is included below.

Table 40   Summary table of theme frequencies.

Themes	Frequency
Choice, agency and wellbeing	7
Practicalities:	33
Set and setting	(4)
Timing	(3)
Alternative approaches	(3)
Environmental and organisational aspects	(8)
Types of support	(6)
Components of intervention	(9)

This frequency table can be useful when assessing which aspects of an intervention are the most important and provides an overview of which ideas or themes were highlighted by the highest number of participants. However, frequency is not always the most useful way to assess the importance of themes and intervention components. A combination of frequency, elaboration (the number of subthemes within each theme) and expressed importance can be used to ensure that all aspects are considered when deciding on the most important elements to include.

Although the theme of practicalities (Table 39) had a much higher frequency than the theme of choice, agency and well-being (33 vs 7) and elaboration (6 sub-themes vs 0), this does not automatically mean that practicalities are of greater importance than choice, agency and well-being. Rather, both themes are of great importance and should be included when developing any intervention. When interviewing participants, all expressed a great importance on the concept of choice, agency and well-being.

There were many different ideas and suggestions about how this might be applied to an intervention development, but there was a consensus that this ethos of choice and autonomy was key to both acceptability and potential effectiveness for a smoking cessation intervention. This element of the intervention development focuses on the acceptability of potential interventions to both staff and clients; it is this aspect specifically that the participants are experts in.

7.4 Synthesis

The three tables in the results sections from each previous study are here combined to illustrate which BCTs were identified from each study (Study 1: reporting guidelines; Study 2; quantitative analysis; Study 3: qualitative interviews) and how these compare across the studies. The shaded boxes indicate a BCT which was identified from the corresponding study.

Table 41   BCTs recommended from each study (Part i).

BCT		Study		
Number and Label	**Description**	**1**	**2**	**3**
1.1 Goal setting (behaviour)	Set or agree on a goal defined in terms of the behaviour to be achieved	X	X	
1.2 Problem solving	Analyse, or prompt the person to analyse, factors influencing the behaviour and generate or select strategies that include overcoming barriers and/or increasing facilitators	X		X
1.5 Review behaviour goals	Review behaviour goal(s) jointly with the person and consider modifying goal(s) or behaviour change strategy in light of achievement. This may lead to re-setting the same goal, a small change in that goal or setting a new goal instead of (or in addition to) the first, or no change	X		
1.9 Commitment	Ask the person to affirm or reaffirm statements indicating commitment to change the behaviour	X		
2.1 Monitoring of behaviour by others without feedback	Observe or record behaviour with the person's knowledge as part of a behaviour change strategy			X
2.3 Self-monitoring of behaviour	Establish a method for the person to monitor and record their behaviour(s) as part of a behaviour change strategy			X
2.6 Biofeedback	Provide feedback about the body *(e.g., physiological or biochemical state)* using an external monitoring device as part of a behaviour change strategy	X	X	X
3.1 Social support (unspecified)	Advise on, arrange or provide social support *(e.g., from friends, relatives, colleagues,' buddies' or staff)* or non-contingent praise or reward for performance of the behaviour			X
3.2 Social support (practical)	Advise on, arrange, or provide practical help *(e.g., from friends, relatives, colleagues, 'buddies' or staff)* for performance of the behaviour	X		X
3.3 Social support (emotional)	Advise on, arrange, or provide emotional social support *(e.g., from friends, relatives, colleagues, 'buddies' or staff)* for performance of the behaviour			X
4.1 Instruction how to perform the behaviour	Advise or agree on how to perform the behaviour	X		

Table 42   BCTs recommended from each study (Part ii).

BCT number	BCT description	Study 1	Study 2	Study 3
5.1 Information about health consequence	Provide information (e.g., written, verbal, visual) about health consequences of performing the behaviour			X
5.2 Salience of consequence	Use methods specifically designed to emphasise the consequences of performing the behaviour with the aim of making them more memorable (goes beyond informing about consequences)	X		
5.3 Information about social and environmental consequence	Provide information (e.g., written, verbal, visual) about social and environmental consequences of performing the behaviour	X		
5.6 Information about emotional consequence	Provide information (e.g., written, verbal, visual) about emotional consequences of performing the behaviour	X		
6.2 Social comparison	Draw attention to others' performance to allow comparison with the person's own performance			X
8.1 Behavioural practice/rehearsal	Prompt practice or rehearsal of the performance of the behaviour one or more times in a context or at a time when the performance may not be necessary, in order to increase habit and skill	X		
8.2 Behaviour substitution	Prompt substitution of the unwanted behaviour with a wanted or neutral behaviour	X	X	X
8.6 Graded tasks	Set easy-to-perform tasks, making them increasingly difficult, but achievable, until behaviour is performed	X		
9.1 Credible source	Present verbal or visual communication from a credible source in favour of or against the behaviour	X		X
9.2 Pros and cons	Advise the person to identify and compare reasons for wanting (pros) and not wanting to (cons) change the behaviour	X		

Table 43   **BCTs recommended from each study (Part iii).**

BCT number	BCT description	Study 1	Study 2	Study 3
10.1 Material incentive (behaviour)	Inform that money, vouchers or other valued objects *will be* delivered if and only if there has been effort and/or progress in performing the behaviour			X
10.2 Material reward (behaviour)	Arrange for the delivery of money, vouchers or other valued objects if and only if there *has been* effort and/or progress in performing the behaviour		X	
10.3 Non-specific reward	Arrange delivery of a reward if and only if there *has been* effort and/or progress in performing the behaviour	X		
10.4 Social reward (behaviour)	Arrange verbal or non-verbal reward if and only if there *has been* effort and/or progress in performing the behaviour	X		
10.9 Self-reward	Prompt self-praise or self-reward if and only if there *has been* effort and/or progress in performing the behaviour	X		
11.1 Pharmacological support	Provide, or encourage the use of or adherence to, drugs to facilitate behaviour change		X	X
11.2 Reduce negative emotions	Advise on ways of reducing negative emotions to facilitate performance of the behaviour	X		X
11.3 Conserving mental resources	Advise on ways of minimising demands on mental resources to facilitate behaviour change	X		
12.1 Restructuring the physical environment	Change, or advise to change the physical environment in order to facilitate performance of the wanted behaviour or create barriers to the unwanted behaviour			X
12.2 Restructuring the social environment	Change, or advise to change the social environment in order to facilitate performance of the wanted behaviour or create barriers to the unwanted behaviour			X

Table 44   BCTs recommended from each study (Part iv).

BCT number	BCT description	Study 1	Study 2	Study 3
13.1 Identification of self as a role-model	Inform that one's own behaviour may be an example to others	X		
13.2 Framing/reframing	Suggest the deliberate adoption of a perspective or new perspective on behaviour (e.g., its purpose) in order to change cognitions or emotions about performing the behaviour	X		
13.5 Identity associated with changed behaviour	Advise the person to construct a new self-identity as someone who 'used to engage with the unwanted behaviour'	X		
15.1 Verbal persuasion about capability	Tell the person that they can successfully perform the wanted behaviour, arguing against self-doubts and asserting that they can and will succeed			X
15.3 Focus on past success	Advise to think about or list previous successes in performing the behaviour (or parts of it) Advise to think about or list previous successes in performing the behaviour (or parts of it)	X		X
15.4 Self-talk	Prompt positive self-talk (aloud or silently) before and during the behaviour	X		

Here the BCTs identified from all studies are assessed using the APEASE criteria as described earlier in this chapter, with the coding relating to the acceptability of the BCT to all stakeholders, but primarily to the clients who would be receiving the intervention. As before, any BCTs which are deemed not to be acceptable are disregarded and not considered for inclusion in the intervention. The final column provides the summary across the criteria.

Table 45 **APEASE assessment table for combined BCT recommendations from each study.**

BCT	Acceptability	Practicability	Effectiveness	Affordability	Spillover Effects	Equity	Summary
1.1	√	√	√	√	√	√	√
1.2	√	√	√	√	√	√	√
1.5	√	√	√	√	√	√	√
1.9	?	√	√	√	?	X	?
2.1		√	√	√	X	X	X
2.3	√	√	X	√	√	√	√
2.6	?	?	√	?	?	?	?
3.1	√	√	?	√	√	√	√
3.2	√	√	√	√	√	√	√
3.3	√	√	√	√	√	√	√
4.1	?	√	√	√	X	?	?
5.1	√	√	√	√	√	√	√
5.2	√	√	√	√	√	√	√
5.3	?	√	√	√	?	?	?
5.6	?	√	√	√	?	?	?
6.2	√	√	√	√	√	√	√
8.1	√	√	√	√	√	√	√
8.2	√	√	√	√	√	√	√
8.6	?	?	√	√	?	?	?
9.1	√	√	√	√	√	√	√
9.2	√	√	√	√	√	√	√
10.1	√	√	√	?	?	√	√
10.2	X	√	√	?	?	√	X
10.3	√	√	√	√	√	√	√
10.4	√	√	√	√	√	√	√
10.9	√	√	√	√	√	√	√
11.1	√	?	√	?	?	√	√
11.2	√	√	√	√	√	√	√
11.3	√	√	√	√	√	√	√
12.1	?	X	√	X	X	X	X
12.2	√	?	√	X	√	?	?
13.1	√	√	√	√	√	√	√
13.2	√	√	√	√	√	√	√
13.5	√	√	√	√	√	√	√
15.1	√	√	√	√	√	√	√
15.3	√	√	√	√	√	√	√
15.4	?	√	√	√	√	√	?

* √ indicates inclusion X indicates not for inclusion and ? indicates uncertainty

From the above tables and the APEASE evaluation, the table below presents a summary of the BCTs which are deemed to be suitable for inclusion in the intervention, as they meet criteria for acceptability as well as other components of the APEASE tool and have been identified from at least one of the prior studies as being recommended for inclusion.

Table 46   **Acceptable BCTs from recommendations with definitions (Part i).**

BCT number	BCT description
1.1 Goal setting (behaviour)	Set or agree on a goal defined in terms of the behaviour to be achieved
1.2 Problem solving	Analyse , or prompt the person to analyse, factors influencing the behaviour and generate or select strategies that include overcoming barriers and/or increasing facilitators
1.5 Review behaviour goals	Review behaviour goal(s) jointly with the person and consider modifying goal(s) or behaviour change strategy in light of achievement. This may lead to re-setting the same goal, a small change in that goal or setting a new goal instead of (or in addition to) the first, or no change
2.6 Biofeedback	Provide feedback about the body *(e.g., physiological or biochemical state)* using an external monitoring device as part of a behaviour change strategy
3.1 Social support (unspecified)	Advise on, arrange or provide social support *(e.g., from friends, relatives, colleagues,' buddies' or staff)* or non-contingent praise or reward for performance of the behaviour
3.2 Social support (practical)	Advise on, arrange, or provide practical help *(e.g., from friends, relatives, colleagues, 'buddies' or staff)* for performance of the behaviour
3.3 Social support (emotional)	Advise on, arrange, or provide emotional social support *(e.g., from friends, relatives, colleagues, 'buddies' or staff)* for performance of the behaviour
5.1 Information about health consequences	Provide information (e.g., written, verbal, visual) about health consequences of performing the behaviour
5.2 Salience of consequences	Use methods specifically designed to emphasise the consequences of performing the behaviour with the aim of making them more memorable (goes beyond informing about consequences)
6.2 Social comparison	Draw attention to others' performance to allow comparison with the person's own performance
8.1 Behavioural practice/rehearsal	Prompt practice or rehearsal of the performance of the behaviour one or more times in a context or at a time when the performance may not be necessary, in order to increase habit and skill
8.2 Behaviour substitution	Prompt substitution of the unwanted behaviour with a wanted or neutral behaviour
9.1 Credible source	Present verbal or visual communication from a credible source in favour of or against the behaviour
9.2 Pros and cons	Advise the person to identify and compare reasons for wanting (pros) and not wanting to (cons) change the behaviour

Table 47   **Acceptable BCTs from recommendations with definitions (Part ii).**

10.1 Material incentive (behaviour)	Inform that money, vouchers or other valued objects *will be* delivered if and only if there has been effort and/or progress in performing the behaviour
10.3 Non-specific reward	Arrange delivery of a reward if and only if there *has been* effort and/or progress in performing the behaviour
10.4 Social reward (behaviour)	Arrange verbal or non-verbal reward if and only if there *has been* effort and/or progress in performing the behaviour
10.9 Self-reward	Prompt self-praise or self-reward if and only if there *has been* effort and/or progress in performing the behaviour
11.1 Pharmacological support	Provide, or encourage the use of or adherence to, drugs to facilitate behaviour change
11.2 Reduce negative emotions	Advise on ways of reducing negative emotions to facilitate performance of the behaviour
11.3 Conserving mental resources	Advise on ways of minimising demands on mental resources to facilitate behaviour change
13.1 Identification of self as a role-model	Inform that one's own behaviour may be an example to others
13.2 Framing/reframing	Suggest the deliberate adoption of a perspective or new perspective on behaviour (e.g., its purpose) in order to change cognitions or emotions about performing the behaviour
13.5 Identity associated with changed behaviour	Advise the person to construct a new self-identity as someone who 'used to engage with the unwanted behaviour'
15.1 Verbal persuasion about capability	Tell the person that they can successfully perform the wanted behaviour, arguing against self-doubts and asserting that they can and will succeed
15.3 Focus on past success	Advise to think about or list previous successes in performing the behaviour (or parts of it) Advise to think about or list previous successes in performing the behaviour (or parts of it)

7.5 Intervention components

Although BCTs make up the active components of a behaviour change intervention, there are many other aspects of an intervention which contribute to its success or failure. These can include mode of delivery, setting, inclusion criteria, timing and may more practical considerations (Michie, van Stralen and West, 2011). These factors may not have a direct influence on changing behaviours but can be critical to ensure an interventions acceptability and suitability for the target population. Accessibility is an important factor when considering recruitment and retention for a study or an intervention and is crucial to consider at the design stage.

As discussed in the previous section, BCTs can be used to influence behaviour change in smoking cessation interventions. However, interventions are much more than the sum of the BCTs they incorporate. Other aspects of interventions have been identified and discussed in the preceding chapters, and in this chapter, they will be synthesised and assessed for their suitability for inclusion in recommendations for an intervention to be delivered in substance use treatment services. The different components will be discussed presented below, with the perspectives from each chapter compared where

relevant. Using a similar process to the previous chapter, each will be assessed using a modified version of the APEASE criteria, to emphasise the importance of the acceptability to those receiving the intervention.

Below, each aspect of the intervention is discussed under the sub-headings, with the different recommendations from the previous three studies compared and discussed.

7.5.1   Setting

In Chapter 4, the reporting guidelines study, the study setting was not discussed except in terms of how this was reported. It is important to report this so that the factors which relate to the setting can be further explored. In Chapter 5, setting was explored in relation to which setting PWUD/A were more likely to receive when compared with the wider population. PUWD/A were less likely to receive an intervention in a community setting, which may have more to do with the appropriate settings for RCTs, and ease of access to participants in an in-or-out-patient setting. In Chapter 6 however, both staff and service users expressed that substance use treatment services would be an ideal setting for a smoking cessation intervention. This was for a number of reasons, which might appeal to various stakeholders. Service users found it more convenient to attend an intervention based in the substance use treatment service, as they were already familiar and comfortable with the location, and often felt that it was more suitable to address the needs of this population in terms of multiple substance use. Stigma was a concern when discussing attending an external smoking cessation service or location, due to fears around disclosing their substance use or worries about staff not understanding the additional needs associated with stopping the use of multiple substances.

Substance use treatment services were also seen as convenient locations for staff and potentially for others to deliver interventions, partly due to the preferences displayed by the service users, and partly due to the convenience making service users more likely to attend, especially for drop in or opportunistic services. This could also make interventions more cost effective, as it reduces the need for additional premises and transport, which can present additional barriers to people accessing services. However, it assumed that people are already willing and able to access substance use treatment services, and that they feel comfortable with this.

Recommendation: *Delivery within the substance use treatment service*

7.5.2   Mode of delivery

The reporting guidelines study (Chapter 4) discussed delivery of interventions in relation to reporting, and the challenges of reporting the nuances of delivery styles for interpersonal delivery options. Chapter 5 explored the differences in mode of delivery between substance use focused interventions compared with the wider population and found that PWUD/A were less likely to receive group based interventions. Interestingly, this is in direct contrast with the qualitative study (Chapter 6) in which both staff and service users expressed their preference for group delivery of smoking cessation interventions. There are several reasons for this preference and may be due to practical reasons as well as perceived effectiveness. In substance use treatment services, group sessions are commonly offered and engagement with group programmes if often a prerequisite for accessing additional support. These are generally cost effective as they can maximise the staff time and resources by engaging with multiple service users at one time. In addition, group

interventions can also draw on peer support and the sharing of experiences to enhance motivation and suggest ways to aid in recovery.

Although other options have seen an increase in popularity, especially since the COVID-19 pandemic and the subsequent shift to virtual delivery of healthcare, face to face delivery remains the preferred option for this population. Interpersonal relationships are frequently cited as key to behaviour change and recovery, and developing these new relationships and communities can help with the shifts in identify and self-perceptions that often accompany these changes.

Recommendation: Face to face, interpersonal, group intervention delivery options

7.5.3   Provider

The qualitative study (Chapter 6) discussed the provider, or person who would deliver a potential intervention in some detail, with participants expressing preference for 'experts', whether by experience or by profession to deliver the interventions. Peer support was discussed as a positive option, and several suggested that they would recommend that a peer with lived experience of both smoking and substance use treatment would benefit the delivery of an intervention by making it appear more credible. As with the setting, many participants discussed that they felt comfortable within the substance use treatment service and trusted that the staff there would be well placed to deliver smoking cessation support. Staff did not always reflect this, with several reporting that they did not feel comfortable delivering or even discussing smoking cessation as they doubted their own skills and capability to do this. This led to the recommendation that staff be offered additional training in order to facilitate them delivering smoking cessation support. A collaborative approach may also be beneficial, with substance use treatment services staff working with peer mentors or similar to deliver the sessions, with support and guidance from smoking cessation specialists or materials.

In the reporting guidelines study (Chapter 4), the intervention provider was not discussed. In Chapter 5, PUWD/A were more likely to receive an intervention delivered by a counsellor or health educator. As with other aspects, this may be due to the nature of RCTs and the style of the study rather than a preference indicated by people receiving the intervention. It is important to consider both their preferences and the practicalities of running a study, which may mean that the decision around who delivers an intervention requires more deliberation in order to achieve acceptability for all stakeholders.

Recommendation: intervention delivered by substance use treatment service staff, peers/ people with lived experience, with support from materials, training and smoking cessation specialists.

7.5.4   Outcomes

The subject of study outcomes is a complex and contradictory one, with the different stakeholders having different priorities and perspectives. The CONSORT-SPI-SMOKE suggests a pragmatic approach to this, and suggests ways to reporting the outcomes, along with their rationale, whatever the choices made. Despite a traditional academic and clinical preference for abstinence based outcomes, which use a biochemically verified method, this may not be the only appropriate outcomes to measure. As the qualitative study found, both staff and service users expressed a strong preference for a more flexible and pragmatic approach, which includes a harm reduction aspect. A reduction in FTND or

CPD may be acceptable, and some participants may choose to aim for total abstinence. In order to satisfy the multiple perspectives on this, it is necessary to balance the need for evidence-based measures with the need for acceptability to participants. Whichever outcomes are used, it is important to clearly state these prior to the study commencing, and for them to be consistently and transparently reported through the intervention and follow up periods.

Recommendation: outcomes to include abstinence as well as reduction in cigarettes smoked per day and / or FTND

7.5.5   Outcome measurements

When exploring options for measuring the study or intervention outcomes, it is also important for clarity and consistency. As discussed previously, many reporting guidelines strongly endorse the use of biochemically verified abstinence measures. These may not be acceptable to people accessing substance use treatment services, due to issues relating to stigma and trust. In this case, using self-reported data may be preferable, and there is evidence to suggest that this is reliable and acceptable alternative.

In addition to outcomes relating to smoking abstinence or reduction, there are numerous other outcomes with can be measured and which should be considered when evaluating interventions or assessing the value of smoking cessation programmes. These may be physical measures such as carbon monoxide or lung function tests, which can also be used to encourage motivation and promote cessation. Also, it may be worth considering a qualitative evaluation which assesses participant experiences and how or if the smoking cessation interventions contribute to motivation to quit or the broader process of recovery. Many of the positive outcomes of smoking cessation cannot be measured by abstinence alone.

Recommendation: outcomes to be self-reported unless participants express preference for biochemical measures as an intervention tool. Consider qualitative measures in addition.

7.5.6   Pharmacotherapy

Although pharmacotherapy is included in the previous chapter and discussions around BCTs, if warrants additional discussion here. Evidence suggests that pharmacotherapy combined with behavioural support, offers the best chance of smoking cessation. All of the studies in this thesis support the use of pharmacotherapy, although there was much discussion about its use within the qualitative study (Chapter 6). For PWUD/A, there may be additional concerns about the use of medication to assist with smoking cessation. For some people, they are trying to reduce their reliance on medications or substances and are reluctant to take additional medications at this stage. For others, there are concerns about the interactions with other medications, especially around mental health medications, which many of this population are prescribed. Additionally, both staff and service users were very aware of the potential side effects of stop smoking medications, particularly the risk of depression or suicidality. For many, the process of stopping the use of other substances meant that their mental health was already fragile, and they expressed concerns that this would exacerbate the symptoms. It is therefore suggested that while pharmacotherapy should be offered and provided to any participants who want to take it, the side effects and alternatives should be clearly explained and options explored, and additional support offered where appropriate. PWUD/A should not be disadvantaged further or put off taking part due to concerns about pharmacotherapy, but additional measures may need to be put in place to address these concerns.

The use of e-cigarettes may be a preferred option for this population, although there are many conflicting messages surrounding their use. For this reason, it is important that staff and service users are provided with up to date and appropriate evidence on the use of e-cigarettes, and concerns around their safety should be discussed. In Chapter 6, many staff expressed concern around the use of e-cigarettes, and didn't feel that they were suitably knowledgeable about them to make a recommendation to their service users. This needs to be addressed, and if e-cigarettes are the preferred option, then service users should be encouraged to try them, with the appropriate information given about them. As part of a harm reduction approach, people who smoke should be encouraged to try e-cigarettes as a smoking cessation tool or as a method of reducing smoking frequency or intensity. There may be additional barriers to the use of e-cigarettes, such as financial or practical concerns which should be discussed and addressed where possible.

Recommendation: *pharmacotherapy to be offered or provided in addition to behavioural support, and its use facilitated where possible. E-cigarettes should be explored with additional training on their use and risks.*

7.6 APEASE

The table below illustrates the assessment of each of the recommendations from the previous section using the APEASE criteria. This uses the domains of acceptability, practicability, effectiveness, affordability, spillover effects and equity to evaluate each recommendation and provides a summary based on the combination of domains. As with the previous chapter, any items which are deemed to be not acceptable (coloured in red in the table) will not be considered as a viable option for inclusion in any future interventions.

Table 48   APEASE assessment for intervention recommendations.

7.7

	Acceptability	Practicability	Effectiveness	Affordability	Spillover Effects	Equity	Summary
Setting: substance use treatment services	X	X	X	X	Increased engagement with service	X	X
Delivery: Interpersonal Group Face to face	X X X	? X ?	X X X	? X ?	Additional emotional support via group delivery	X	X
Provider: substance use treatment services staff Peer / PWLE Include support via training, materials and specialists	X X X	X X ?	X X X	? X ?	Increased confidence and experience for peers	X X X	X
Outcomes: Abstinence CPD / FTND Qualitative	? X X	? X ?	? ? ?	? X ?		?	?
Measures: Self – report Biochemical if supported by participants	X X	X X	X X	X X	Biochemical verification can be used as part of the intervention to enhance motivation	X	X
Pharmacotherapy: Offer and provide Offer and provide e-cigarettes Offer additional support and training	X ? X	X X ?	X X X	? ? ?		X	X

Discussion

From the table above, many of the recommendations from this chapter have been assessed as suitable for inclusion in a future intervention. The main areas of uncertainty are around outcomes to be included in the intervention, and the questions around the different aspects of this. Acceptability of the different outcomes (abstinence, reduction in cigarettes smoked per day, qualitative outcomes) is uncertain as it depends on the individuals taking part, and their feelings around the different outcomes. As stated previously, choice is key to the acceptability of any intervention or aspect of substance use treatment. In this case, offering individuals a choice of outcome to aim for may address this concern. As with the CONSORT-SPI-SMOKE, it is worth adding additional definitions to the above points; in this case, adding the caveat that outcomes should be agreed with participants at the start of the intervention may suffice. This may present additional challenges if each member of the group intervention has different outcome goals, and this may require additional clarification or separate groups or sessions depending on if the group is aiming for abstinence or a

harm reduction approach. As with other aspects of substance use, different goals can be accommodated within the service, although different treatment disciplines may have differing opinions on the acceptability of harm reduction approaches.

Issues of affordability may be presented by the inclusion of qualitative evaluations of interventions and participant experiences, so this may be a barrier to some substance use treatment services in implementing this. Again, a caveat which states 'where possible' may suffice to address this. In keeping with a pragmatic approach, the intervention should not be put on hold due to financial or other constraints, where an effective and safe intervention can be offered.

Likewise with pharmacotherapy, choice is crucial. The acceptability of pharmacotherapy may vary by individual, so the importance of wording here is to include the term 'offer', and to let participants know that this is available but not compulsory. This, combined with supplemental training materials and education around the safe use of pharmacotherapy and e-cigarettes may help to address the concerns around their use. Other concerns may centre around the costs of accessing these tools, which will vary depending on providers and eligibility criteria. As well as providing appropriate education and advice around the use of e-cigarettes or pharmacotherapy, additional support may be needed to support participants to access these options. Also, ongoing support may be necessary to deal with any side effects or emotional concerns associated with their use, and support should be available to discontinue use or change doses or devices as necessary. The choice should lie with the individual participant, although this may present challenges to trialists in ensuring consistency and replicability of the intervention.

Although this chapter has made recommendations for specific and measurable intervention components, there are additional factors which influence the effectiveness of an intervention, and these are much harder to assess. Personal style and group dynamics are just two examples of this hard to define and identify components. Fidelity to interventions is also challenging to ensure and to report in a clear and consistent manner, but this is important to measure and to report.

All of the previous studies have identified the issues of choice, agency and autonomy, acceptability and accessibility as essential to the design and implementation of interventions for PWUD/A. In making recommendations for a future intervention, it is important to recognise that these will vary by individual, and that choice should be offered wherever practical. In doing this, it should be reiterated that smoking cessation interventions should be proactively offered and made available for anyone in substance use treatment services, regardless of their perceived engagement or motivation to quit. If the individual wishes to take part in a smoking cessation (or reduction) programme, then this should be facilitated wherever possible. It is also important to remember that motivation wanes and changes, and lack of engagement should not be used as a reason to exclude someone from taking part. The programme should foster a feeling of encouragement and support individual agency and autonomy, by allowing them to set their own goals and outcomes.

Autonomy and agency are important and distinct concepts, and treatment or interventions, from a recoverist perspective, should respect and support these. Behaviour change interventions can facilitate these by incorporating choice wherever possible, and offering a transparent approach to treatment options. This might look like a discussion about the available treatment options, and the benefits or side effects of each, so that the individual can make an

informed choice. Prescriptive and inflexible options should be avoided, as should controlling or coercive language. By fostering and encouraging personal, intrinsically motivated goal setting, agency and autonomy can be developed. Autonomous motivation is consistently related to sustained behaviour change (Hagger et al., 2014), and is also reflective or a recoverist approach.

The recommendations made in this chapter are all informed by and reflective of the recoverist approach, where the person seeking support is empowered to make positive and sustainable changes in their smoking behaviours and more broadly, towards their own recovery goals. Education, training and sharing of information are key, so that people can make decision for themselves, but are equipped to make informed decisions with support if necessary. Pharmacotherapy is a good example of how this can be done; people should be given enough information about the different options, and can decide if and how they wish to include pharmacotherapy in their smoking cessation plan. Enough information and support is necessary to facilitate this, but people can be empowered by making such decisions collaboratively. The same is true for the use of e-cigarettes. By using self-reported outcomes, participants are placed in a position of trust and autonomy, rather than the disempowering situation of relying on biochemical verification to validate outcomes. Staff training and development are essential to support this, and to empower the staff to feel confident in their own abilities and knowledge to offer appropriate support. It is also hoped that through the open discussions and information sharing, organisational norms and pro-smoking attitudes or situations can be challenged, but in a supportive and collaborative way. As discussed in the literature, coercive or restrictive approaches have limited effectiveness, and are not in line with the recoverist approach. By encouraging people to work together and to explore the available options, as well as the broader, holistic concept of recovery, this can begin to shift norms within treatment settings to healthier and more acceptable ones.

7.8 Conclusion

This chapter described the application of the Behaviour Change Wheel to inform the development of an intervention for smoking cessation for delivery in substance use treatment services. The findings from the previous studies have been utilised to provide a basis for the intervention, and the theoretical concepts laid out in the BCW have been applied. This provides a sound, theory informed basis to develop the next stages of the intervention design process, which will use some of the same processes to explore other components of an intervention. Acceptability has been assessed at each key stage, to ensure that any future intervention will appeal to both clients and staff, which will hopefully increase support for the take up of the intervention. The BCW offers a framework, not a strict set of rules, and as such these have been adapted using a pragmatic approach to meet the aims of this project. There are many existing interventions for smoking cessation which can be used as templates for future interventions, but it is important to go back to the beginning first, to unpick the essential components of the intervention which make it both effective and acceptable within this context.

The second part of this chapter has compared the findings from the previous three studies on different aspects of interventions, including setting, mode of delivery, provider and outcomes. These have been assessed using the APEASE criteria and amended as necessary to ensure that these recommendations are acceptable and appropriate for this population. The recommendations are summarised below.

- Setting: smoking cessation should be offered within the substance use treatment service.

- Delivery: interventions should be offered in a group setting, face to face where possible.

- Provider: the intervention should be delivered by a substance use worker, with support from a peer or person with lived experience.

- Training and support should be provided in the form of education, materials and support from a smoking cessation specialist, and a prescriber if necessary.

- Outcomes should be agreed with the individual and may include abstinence or reduction in cigarettes smoked per day.

- Additional outcomes such as quality of life, motivation to quit or other qualitatively assessed outcomes may be included.

- Outcome measures should be self-reported. They may also be biochemically verified if agreed by participants.

- Pharmacotherapy should be offered to all and provided if appropriate.

- E-cigarettes should be offered and provided if possible.

- Additional training for staff should be provided around pharmacotherapy and the use of e-cigarettes.

The following chapter presents a discussion of these findings and recommendations, based on the different studies which make up this thesis. These are related to the original aims and objectives and discussed in terms of the different stakeholder perspectives and priorities which have been identified and discussed throughout. Key themes will be presented and discussed in relation to the existing research on this topic, and areas for further research will be identified.

Table 49   Summary of behaviour change synthesis.

Objective	Status
To put these findings (BCTs and other intervention components, from the first 3 studies) into the context of substance use treatment services	This chapter has used a BCS approach to synthesise findings from Studies 1, 2 and 3 in terms of both BCTs and other components of interventions.
To evaluate these BCTs, intervention components and characteristics using APEASE criteria.	The APEASE criteria, with a specific emphasis on acceptability to PWUD/A has been used to evaluate the BCTs and intervention components.
To make recommendations which meet APEASE criteria and should be included in smoking cessation interventions in substance use treatment services.	The findings from the synthesis and evaluation are presented as tables in this chapter and will be used to inform the recommendations put forward in Chapter 9.

Chapter 8 Discussion

8.1 Introduction

This thesis has presented the findings from three studies, each offering a different perspective on smoking cessation in substance use treatment services. Study 1 explored the evidence from an 'expert' perspective, using a modified Delphi and expert consensus meeting on reporting guidelines for behavioural trials for smoking cessation. Study 2 offered a quantitative analysis based on a systematic review of randomised control trials for smoking cessation to compare intervention components received by people who use drugs or alcohol with the wider population. Study 3 used a qualitative approach to gather data from staff and service users of substance use treatment services to explore their perspectives on smoking cessation in substance use treatment services. The following chapters offered a synthesis of these findings in order to make recommendations for the design and implementation for future behavioural interventions for people accessing substance use treatment services and a discussion about these recommendations in the context of UK substance use treatment services and wider policies around smoking cessation.

This chapter brings together the findings and discussions from each of the four studies that make up this PhD in order to offer a critical discussion. Aims and objectives will be revisited and findings assessed in the context of these aims. Lastly, the limitations of this research are discussed.

The aims and objectives of this thesis were:

1. Explore evidence on smoking cessation in people who use drugs or alcohol (Study 1, Study 2)
2. Assess the applicability of existing evidence in the context of substance use treatment, using a recoverist lens (Study 3, Chapter 7)
3. Determine which factors need to be considered when developing smoking cessation support for people in substance use treatment from multiple perspectives (Study 3)
4. Explore the concept of acceptability in relation to smoking cessation provision in substance use treatment (Study 3, Chapter 7)

This chapter will discuss the themes and concepts which have been identified through the previous studies, and how they relate to the original aims and objectives of the thesis. Some final reflections on the research are also included in this chapter. Firstly, the approach to integration is explained, followed by a presentation and summary of the key findings from across the four studies. Next, each of these findings is discussed in the context of the broader evidence and critically analysed.

8.2 Integration

As Chapter 7 has demonstrated, the findings of these studies can be integrated in multiple different ways. Chapter 7 offered a Behavioural Change Synthesis, merging the intervention components and BCTs that were recommended in the different studies and assessing them using the APEASE criteria, with an emphasis on the acceptability to multiple stakeholders, but especially PWUD/A. In this way, the recoverist lens was used to prioritise the perspectives of PWUD/A, rather than existing evidence and established hierarchies which do not.

In this section, key themes from each of the previous studies are considered using Fetters, Curry and Creswell's approach to integration in mixed methods research for convergent designs (2013). Mixed methods research uses integration to enhance the value of the findings by merging the findings and attempting to combine the different perspectives captured in each study. As these studies were conducted concurrently and each was used to inform the others, merging is considered an appropriate method of integration (Bahadur, 2018).

Integration in mixed methods research can be difficult, as the different data sources and methods used all have unique and often contradictory approaches (Bazeley, 2016). For this reason, this research has used both a behavioural change synthesis and a merging approach, as it was considered the most appropriate within the pragmatic paradigm, and the best way to answer the research question. Dissonance between the methods and the findings can be considered a challenge, but in this case the aim of the research was to explore different perspectives, so dissonance between these is considered a useful finding, enabling the exploitation of these disparate perspectives as a method of integrating findings (Bazeley, 2016).

The table below illustrates the key themes or aspects of interventions which were identified across the four studies, and which study this theme was present in. Some were found in only one study, but many were common across the majority of the studies.

Table 50   Themes identified from each study.

Theme /component	Study 1	Study 2	Study 3	BCS
Acceptability	▉	▉	▉	▉
Agency		▉		▉
Autonomy	▉	▉		
Barriers to smoking cessation		▉	▉	▉
BCTs	▉	▉	▉	▉
Choice	▉			▉
Competing priorities	▉	▉	▉	
Evidence suitability	▉	▉		▉
Facilitators to smoking cessation	▉	▉	▉	▉
Intervention components	▉	▉	▉	▉
Organisation and policy			▉	
Outcomes	▉	▉	▉	▉
Practical aspects	▉	▉	▉	▉
Recovery	▉		▉	
Risk perception			▉	
Staff perspectives			▉	▉
Treatment discipline	▉		▉	

The following sections will explore each of these themes. Although specific BCTs and intervention components were explored in more detail in the previous chapter, this chapter will offer a discussion on the dissonance between the different evidence sources and the implications of this, as well as reviewing how these fit with the broader aims of this PhD. Findings are discussed below, grouped in relation to the overarching aims of this PhD research.

8.3 Key findings

The first aim of this PhD was to explore evidence on smoking cessation in PUWD/A. This has been addressed through the use of a range of methods and using a range of data sources or evidence types.

The second aim was to assess the applicability of existing evidence for the context of substance use treatment services, using a recoverist lens. This has been done throughout, and a further discussion on evidence suitability if presented later in this chapter, followed by a discussion of the recoverist perspective on the evidence.

The third aim of this PhD was to determine which factors need to be considered when developing smoking cessation support for people accessing substance use treatment services, from multiple perspectives. Each study and the BCS have offered a different perspective on this subject, which are integrated and discussed in more detail below, with sections on BCTs, practical aspects and intervention components, as well as a range of the barriers and facilitators to implementation and engagement with smoking cessation interventions.

Finally, the fourth aim was to explore the concept of acceptability in relation to smoking cessation provision in substance use treatment services. This was done in a systematic way in Chapter 7, BCS, using the APEASE criteria, which was implemented in a slightly modified way to place additional emphasis on the acceptability to all stakeholders, but especially to PWUD/A. A broader discussion on acceptability and its role in smoking cessation interventions for substance use treatment services is presented later in this chapter.

8.3.1 Evidence

This thesis aimed to explore the evidence on smoking cessation for PWUD/A, and to access the applicability of this evidence in the context of substance use treatment services. Studies 1 and 2 explored this evidence, whilst Study 3 and the BCS (Chapter 7) assessed its applicability. Two main themes were identified within this area; the suitability of evidence to this context, and the impact of competing priorities. These are discussed in the sections below.

Evidence suitability

The three studies, as well as the behavoural synthesis presented in Chapter 7, all serve to evaluate the different types of evidence available on this phenomenon and assess its suitability to the context of substance use treatment services. There is plenty of existing evidence around this population, but much of the available smoking cessation literature focuses on methods which may not be appropriate, such as systematic reviews and randomised control trials. As discussed in earlier chapters, these traditionally high-quality sources of evidence may offer a more clinical and rigorous approach to smoking cessation but are often not suitable for this population due to the rigid and restrictive methodologies used. This does not mean that these types of evidence should be ignored, but that they may need to be modified or adapted to better suit the unique needs of this sub-group. A pragmatic approach to both research and delivery of the intervention should be taken, and the end goal of improving the health of PWUD/A kept in mind when designing and implementing these approaches. Involving PWLE in the design and delivery of smoking cessation in substance use treatment services may encourage a shift from traditional methodologies, which may enable a more appropriate approach to addressing this issue. Much current evidence is based on traditional methodologies and does not take into account the perspectives of PWLE, as evidenced by previous chapters. Having these conversations with PWUD/A as well as staff and other stakeholders can help to identify and address barriers to the implementation of smoking cessation in substance use treatment services, as well as highlighting the facilitators which include the overall opinion that smoking is an important issue which can and should be addressed by substance use treatment services.

Overall, there are fundamental issues with much of the existing evidence on smoking cessation which limit the applicability to this context. A further exploration of how this can be adapted, as well as new studies which embody the recoverist approach would be beneficial in addressing these evidence gaps and reducing health inequalities through the implementation of an appropriate evidence base.

Competing priorities

One of the key issues in exploring the evidence base and its suitability for PWUD/A is that of competing priorities. As this research demonstrates, each stakeholder group has different perspectives and priorities, both in terms of research and in healthcare treatment. The challenge in developing and implementing and health related intervention, especially in substance use treatment services, is to balance these different and conflicting priorities. For example, each PWUD/A who accesses services may have different priorities or goals for treatment, which may focus on abstinence, reduction, or recovery in the more holistic sense. These may be linked to risk perceptions and the perceived benefits of smoking, such as anxiety reduction or coping mechanisms to enable engagement with treatment; these should not be ignored as they can present significant barriers to engagement with substance use treatment services as well as smoking cessation. As discussed later in this chapter, immediate priorities may be related to immediate benefit versus delayed costs, as in

early recovery each day can present a challenge, and thinking about longer term goals or recovery can seem overwhelming. Focusing on the immediate benefit can be a useful tool in encouraging engagement with substance use treatment services but represent dissonance with a recovery-informed approach to improving health.

Staff priorities may also vary, and are influenced by organisational factors and policy as well as their perspectives about the goals of treatment, as well as personal experiences and intrinsic factors. These priorities are also influenced by attitudes and risk perceptions; the pervasive belief that smoking jeopardises other substance outcomes, and that it is less damaging than other substances, continue to influence staff attitudes and present barriers to implementation of smoking cessation (Swithenbank, Harrison and Porcellato, 2022). These misconceptions may be linked to the lack of an appropriate, acceptable or relevant evidence base, or t the ways in which evidence is incorporated into treatment, both of which are areas for further exploration.

Funders and commissioners may also have different priorities and systems to work within, and may prioritise traditionally evidence-based research and interventions rather than exploring novel or less established approaches and methodologies. Researchers and trialists will often have different priorities again, with the structures and standards associated with trials and research need to be followed, although these do not always account for the needs or perspectives of PWUD/A, or of other sub-groups within a population. This is evidenced by Study 1 and the example of the CONSORT-SPI-SMOKE, which presents limitations in terms of applicability although it strived for a more inclusive approach (Swithenbank et al., 2024).

8.3.2 Applicability and Recovery

Recovery and Recoverism

The second aim of this PhD was to assess the applicability of existing evidence in the context of substance use treatment, using a recoverist lens. This was discussed in relation to the relevance of such evidence later in this chapter, but here a recoverist perspective is used to explore the findings, and how the concept of recovery and recoverism relates to the findings of this research.

For many recovery becomes part of their social identity and how they perceive themselves and can be an inspiring and motivating group identity which helps to combat stigma, but smoking is not often addressed or even acknowledged. Participants in Study 3 confirmed that from their perspective, smoking remains a social norm in both statutory treatment and mutual aid organisations, as was found in previous work (Heffner and Anthenelli, 2009). As one participant explained, substance use treatment services could be an ideal setting to change this group identity to one that does not include smoking, building on the concept of shared identity and social influence to influence a positive shift in social norms.

Perceptions that smoking is less important than other drugs still contribute to the idea that smoking is less damaging or – possibly as it has fewer social implications as well as no immediate harms, whereas the loss of community support or feeling of belonging could have more immediate detrimental effects. For many types of behaviour change, the crisis or immediate problem is the one which is prioritised and dealt with first (Grigsby, Forster and Sussman, 2015; Hughes, 2009). Whilst this can be necessary and effective in early stages of recovery of behaviour change, the issue lies in the

continuation of this, where the priority (in this case, the reduction or cessation of substance use) continues to take priority over other aspects of health and well-being.

In considering recovery, it is important to explore how it can be sustained and built upon. Whereas for some, making multiple changes at once can be effective and acceptable, for others, facing one issue at a time can be more palatable. Whilst the evidence suggests that the concurrent approach is effective and does not damage substance use outcomes, asking or expecting people to deal with multiple issues at once could be off putting and present a barrier to engagement or to entering treatment. For this reason, and because choice is a crucial element of recovery, these choices should be offered and supported by substance use treatment services. As with other aspects of interventions, this may not be compatible with trial designs or outcome measurements. As discussed in a previous section, allowing people accessing treatment to evaluate their own outcomes and satisfaction with treatment could provide an alternative way of assessing the effectiveness and acceptability of an intervention. Funders or commissioners may not support this approach, however.

The concept of recovery is one that is widely acknowledged as effective and aspirational, especially in terms of UK drugs policy and treatment (DHSC, 2021a; DHSC, 2021b). However, guidelines on what this means or how it should be supported are less clear. This may be one reason that a recovery-informed approach is not universally promoted within substance use treatment services in the UK, and in other organisations such as mutual aid and peer support (Bhuiyan et al., 2017).

A Recoverist perspective on the evidence base and suitability

From a recoverist perspective, there are significant limitations to the existing evidence base for this context. Part of this is due to the competing priorities as discussed above, and the fact that the voices and perspectives of PWUD/A are rarely included, let alone prioritised. A recoverist approach challenges the established hierarchy and stigmatising perspectives that contribute to much of the available smoking cessation evidence, prioritising PWUD/A or are in recovery. This research has attempted to explore and challenge these hierarchies, examining a range of perspectives and applying the concept of acceptability to the evidence base.

As discussed in the section on organisation and policy, a pragmatic approach is to work within existing systems and frameworks where possible and attempt to challenge accepted norms and hierarchies where possible, encouraging a shift in research and treatment norms to ones which recognise and embrace the importance of the voices and perspectives of PWUD/A.

8.3.3   Considerations

This section discusses the findings of this thesis in terms of the third aim, which was to determine which factors need to be considered when developing smoking cessation support for substance use treatment services, from multiple perspectives. This section has been structured under headings which reflect the key themes identified and include a range of factors such as barriers and facilitators to smoking cessation, as well as a more practical consideration of intervention components and BCTs.

The previous studies have identified a range of barriers to the design, implementation and integration of smoking cessation into substance use treatment services. A significant barrier to the implementation is the lack of the consideration given to the voice of PWUD/A in both research and evidence -based policy and treatment, which was evident across all studies.

There is the concern that the evidence base is not being used to inform treatment disciplines, or that this is not communicated appropriately to staff. In Study 3, staff raised concerns that they were not equipped to offer smoking cessation advice, or were unsure on the latest guidelines or policy in this area. Reasons for this were not clearly understood, although capacity limitations and lack of knowledge of or time to explore lates policy updates were suggested as explanations.

The lack of appropriate evidence for this population can present a barrier to the implementation of smoking cessation in substance use treatment services, as it suggests methods and approaches which may not be suitable. This research aims to address this and present alternatives which may be more relevant. Other barriers which have been identified throughout this research include barriers at different levels. Firstly, organisation and policies can present barriers, as there is often a sense that smoking cessation is not part of the remit of substance use treatment services, which was confirmed in the findings of this study as well as in earlier work by Gifford et al (2015) and Knudsen et al (2017).

In the current climate of limited resources and finite capacity, it is easy to assume that smoking should be addressed by someone else, either a GP, pharmacy or specialist smoking cessation service. Whilst this may be the case, often these are either not available, not accessible or simply not suitable for PWUD/A. There are many barriers that can make it difficult for PWUD/A to access healthcare, such as competing priorities and lack of resources. Offering smoking cessation in substance use treatment services can go some way to address these issues, making it easier to access a service that they already attend, and hopefully one where they feel comfortable. Stigma and concerns about a lack of understanding from other health professionals or smoking cessation services can pose a barrier to PWUD/A, so offering this service in a familiar setting with staff who can understand and already know about other substance use problems can mitigate this issue.

This is another example of how the organisational stance and treatment discipline can influence treatment delivery, as most of the staff interviews in this study did not feel that smoking cessation was either their role, or fell within the remit of the service. Staff perspectives are explored in more detail in a later section of this chapter.

Staff perspectives and the way in which they are trained or encouraged to use their knowledge and experience to support service users may influence treatment approaches; personal experiences and anecdotes are often relied upon to provide advice and guidance to service users trying to navigate treatment and recovery, and this often perpetuates long held beliefs and misconceptions. As was discussed in the literature review, many staff in substance use treatment services have lived experiences of recovery or substance use themselves (Kelly et al 2019), and many of them have smoked or continue to do so. There can be a dissonance between the evidence base, and organisational policies and staff experiences within services, which lead to miscommunications and confused messages about smoking and recovery. In

many mutual aid based organisations, shared lived experiences form the basis of the programme, and as such it is easy for such misconceptions to be perpetuated. It is important to consider these organisations as well as other sources of recovery support when considering the social norms that exist within treatment. If these do not align with the evidence base, or present significantly different messages about smoking, it is likely that smoking cessation will not become normalised within this population.

Social identity is often formed through the development of relationships, such as in recovery communities for mutual aid fellowships. These shared experiences and relationships build a sense of relatedness, which is a key part of autonomous motivation (Deci and Ryan, 2015). Adapting these communities or social norms could help to contribute to changing smoking behaviours and improving health, by encouraging autonomous motivation in conjunction with autonomy (as discussed earlier in this chapter) and competence). Sharing experiences and offering support to peers can also build competence, as well as self-belief.

The lack of knowledge about the use of e-cigarettes presented another barrier to their use and provision in substance use treatment services. As it is a constantly developing and relatively new phenomena, many staff do not feel suitably informed or educated about e-cigarettes and do not feel comfortable discussing or endorsing them to service users. Here additional training and education about the risks and use of e-cigarettes may facilitate these discussions and encourage the provision of e-cigarettes as a smoking cessation or harm reduction tool.

An additional organisational barrier can be presented by the treatment discipline of the substance use treatment service. Services which focus on abstinence are less likely to incorporate a harm reduction approach, which can extend to smoking. This 'all or nothing' approach can be beneficial but can also leave people feeling like they have failed and is not appropriate for everyone. A person centred approach should allow for individual goal setting and prioritisation and should include smoking cessation as well as other substances. Harm reduction for other substances may include a reduction in use or a change in mode of administration, and the same principles can be applied to smoking.

A significant barrier to smoking cessation is also posed by the idea of risk perception. This is often reinforced by services, staff and peers claiming that recovery should focus on 'one thing at a time' and the concerns that attempting to quit smoking will jeopardise recovery from other substance use. This is repeated despite evidence to the contrary and is a misconception which needs to be addressed. Many PWUD/A also believe that smoking is not as harmful as other substances and prioritise the cessation of those over and above smoking cessation. In order to address these, more education and training should be provided for staff and service users, to enable them to make more informed choices about their own recovery. Staff should be able to discuss these issues with service users in a non-judgemental manner and encourage them to think about what is right for them.

Legal status can also present a barrier to smoking cessation, as it contributes to social norms around smoking and can influence risk perceptions when compared with other, illicit substances. The legality of smoking means that some of the social and other related harms associated with other substance use are not present, and as such may not be the top priority of PWUD/A. Smoking also does not impair mental state in the same way that alcohol or other drugs do and is often not perceived to pose an immediate risk to health in the same way. For both staff and service users, substances

are often addressed in the order of immediate risk of harm, so someone who is in immediate danger of an overdose or mental health crisis is unlikely to prioritise smoking cessation.

Another barrier to smoking cessation was identified in Study 2: PWUD/A are likely to score higher on the FTND, indicating that they are more dependent on nicotine and smoke than the wider population. This echoes other studies (McClure et al 2014) who identified higher nicotine dependence in people who use opiates, and that this presented a barrier to quitting. Although other studies suggest that PWUD/A, especially those already accessing substance use treatment services, are motivated to quit, further exploration of this is warranted to better understand the implications of higher FTND scores and how this relates to smoking cessation. It is unclear if people with higher dependence scores find it harder to quit due to intrinsic factors, if they lack motivation, or face additional barriers with substance use treatment services and smoking cessation services. Motivation to quit is an important aspect of smoking cessation (Gyudish et al, 2020), for accessing support as well as facilitating a quit attempt, so this should be taken into account when offering smoking cessation support in substance use treatment services. Any per-interventions or conversation which encourage motivation could be effective in increasing uptake and engagement with smoking cessation. Xie et al (2021) highlighted some of the barriers to motivation to quit, which were echoed in some of the Study 3 participant interviews, the most significant being concerns around relapse. This is an important concern, and has been discussed in relation to other themes in this chapter.

Overall, a lack of consideration of the perspectives of PWUD/A, or an acknowledgement that they might face additional challenges to quitting smoking, all contribute to the barriers faced. Identification of the barriers to implementing smoking cessation in substance use treatment services can lead to the development of ways to address these and provide an acceptable and appropriate provision for people who need it.

Facilitators

Many of the barriers mentioned above can be addressed or modified to increase the engagement with and implementation of smoking cessation in substance use treatment services. There are a number of factors which act as facilitators to the implementation of smoking cessation in substance use treatment services. These can be developed to encourage staff and service user uptake of smoking cessation provision. For example, many service users felt that staff working in substance use treatment services already had the skills to help them address their smoking. Staff did not always feel this way, so it may be useful to help them develop these skills and to reassure them that the skills they already have in working with people to address their substance use are relevant to smoking cessation as well. These staff already have the key elements of not just skills and knowledge, but an understanding of how to work with this population to develop effective and supportive therapeutic relationships which can be highly beneficial in encouraging behaviour change as they form the basis of a sense of relatedness, which is, according to self-determination theory, a crucial component in autonomous motivation (Deci and Ryan, 2015).

Staff are crucial in the effective implementation of smoking cessation in substance use treatment services. Understanding their concerns and offering appropriate training and support to supplement their experience should help to make them feel more confident and increase psychological capability which can in turn influence service users to make changes and increase their own psychological capability, self – belief and self-efficacy. As discussed above,

acceptability is a vital component and alienating staff by enforcing smoke free policy or adding to an already heavy workload may effect this. Getting staff involved and addressing their concerns, providing smoking cessation specialist support and peer mentors to act as co-facilitators may be beneficial.

Motivation to change is often underestimated in service users, and many do wish to stop or reduce their smoking (Matthews et al; 2022 Swithenbank, Harrison and Porcellato, 2022). This is an important facilitator and one which should be encouraged and developed wherever possible. However, motivation to quit smoking is not necessary, as people in the pre-contemplation stage of change may still be open to learning more about the options available and the benefits of stopping or reducing smoking. Offering a harm reduction approach, which is often already embedded in substance use treatment services through the provision of needle and syringe exchange programmes, can be extended to include smoking cessation and may encourage initial involvement.

Motivation to change can also be developed by building on successes made with the reduction or quitting of other substances. This is listed as one of the BCTs which may be effective and can be particularly useful with this population and can encourage the development of self-belief. This can also be passed on to others via group intervention delivery or other interactions with peers at the substance use treatment service and can help to shift social norms and challenge misconceptions about smoking and substance use. In a similar vein, the concept of recovery as the improvement of well-being and as a holistic approach can be used to promote the idea of smoking cessation. Smoking can often be counter-intuitive when someone is making significant changes to improve their overall health and well-being and can be encouraged in this way. Challenges to this can be presented by the self-identification as a smoker, and the emotional attachment to this identity. Encouraging the formation of a new identity, as the self as a role model and as someone who is in recovery can help with this adaptation. Social norms can also play a big part in this.

Organisation and policy

Some of the factors relating to organisation and policy have been included in earlier sections of this chapter, as is the case with many of the themes of this research, as they are all related and have significant overlap. This was highlighted in the literature review as being an important issue which plays a significant role in the implementation and delivery of smoking cessation in substance use treatment services.

Although broader policy shifts and interventions which rely on governmental or organisational support and promotion are beyond the scope of this thesis, these are still important factors to consider when planning any smoking cessation intervention. This emphasises the importance of context, as laws and policies vary by geographical location. For example, the implementation of smoking bans in NHS services and their grounds does not apply to substance use treatment services as they are generally not part of the NHS. As such, policies on smoking for both staff and clients can vary across and between regions. Although this can allow for a more specialised, pragmatic approach that suits each service, the lack of overarching policy in this area can lead to inconsistencies (Walsh et al., 2018) which can present challenges when clients move between services (Fallin-Bennet et al., 2018) However, relying on services or organisation to implement smoke free policies often results in poor rates of implementation (Drach et al., 2012). This suggests that there are different layers of influence at play and that a pragmatic approach would be to work within the limitations of current

policy and attempt to change perspectives and norms from the ground up, in the hope that this will promote change on other levels, in a true recoverist approach.

As discussed previously, social norms are heavily influenced by policy and setting in this context and can have a significant influence on changing perspectives and behaviours around smoking (Matthews et al., 2022). As found by earlier studies, the introduction of smoke free policies have been associated with shifting beliefs in staff around the importance of smoking cessation services, as well as increasing their delivery (Campbell et al., 2022). This could be used as part of a training package for staff, to explore their perspectives and attempt to encourage the acceptability of integrating smoking cessation in substance use treatment services.

Treatment discipline

As explained in Chapter 1, treatment discipline in substance use treatment services generally fall under three broad approaches: abstinence, harm reduction and recovery (Comiskey, 2019). The outcomes used in smoking cessation interventions are reflective of these disciplines, and can have implications for both effectiveness measures and acceptability.

Outcomes were discussed in all of the studies which make up this PhD, in varying contexts and representing different perspectives. This is one area in which the different needs and priorities of the different stakeholders can be especially challenging to combine., as all have different aims. This is another example of the challenges presented by different, competing priorities between the different stakeholders.

Study 1 used outcomes based on an abstinence approach to assessing effectiveness. As discussed, abstinence is one of the options for evaluating the success of an intervention or a quit attempt, but only using abstinence measures overlooks the alternative outcomes, such as a reduction in cigarettes smoked per day, which may be more achievable and more acceptable to PWUD/A. The binary success/ failure dichotomy can be demoralising and present a goal which is perceived as unattainable, thereby discouraging engagement with smoking cessation interventions.

The ICSmoke study used biochemically verified smoking status as its primary outcome, as it is widely regarded as the 'gold standard' of outcome measures (West, 2005). The expert consensus meeting analysed in Study 1, as well as the reporting guidelines (CONSORT-SPI-SMOKE) confirm this perspective, which presents an example of the competing perspectives and priorities found between and within these groups of stakeholders. If effectiveness is measured using only biochemical verification and abstinence as a treatment goal, many studies which take a more pragmatic, person-centred approach may be excluded from the evidence base, which subsequently impacts on policy and practice in a range of treatment settings. Funders and policy makers rely on the evidence base to make decisions about services and research to support or implement, so this reliance on abstinence and biochemical verification is perpetuated. This only serves to emphasise the disconnect between PWUD/A and their realities and the research and treatment landscapes.

Although the use of biochemical verification can be used as a BCT (BCT 2.6) and motivational tool to encourage smoking cessation, it can be seen as being stigmatising and punitive. One perspective is that it reinforces the feeling of mistrust

between staff and service users; PWUD/A may feel that their word is not trusted, jeopardising the therapeutic relationship that is crucial to effective treatment.

Staff and service user opinions on this was divided, and often depended on the rationale behind its use. If used as a monitoring tool to assess progress and encourage smoking cessation (or reduction) responses were generally favourable, but if used purely as an outcome measure for the trial or intervention, perspectives were less favourable. This could be seen as evidence of the disconnect between those designing or implementing smoking cessation trials and those accessing those, especially PWUD/A. The real world applications of these trials often fail to take into account the perspectives of the participants, focusing instead on outcomes and trial success.

In order to balance the needs of trialists and the evidence base with those of participants, duration of abstinence was also suggested as an outcome in the reporting guidelines. Recovery can be a slow process, and as such results may take time. In terms of smoking cessation, short term abstinence may not be indicative of a long term change, although this needs to be explored further in this context. Recovery related outcomes are not routinely collected once someone has left structured treatment, presenting an additional barrier to collecting data and evidence to support long term changes (2021).

Although the NDTMS monitoring system attempts to collect data on smokers in substance use treatment services, it does not measure smoking cessation treatment or interventions, nor smoking outcomes beyond treatment exit. Ideally, this would be one way of collecting data to evidence changes in smoking cessation and in other substance use outcomes, but this would require a shift in the way that NDTMS operates, and substance use treatment services. A known limitation of this dataset (NDTMS) is that it only captures information on structured substance use treatment, and as such excludes important aspects of treatment and recovery such as holistic, well-being related outcomes and support given by other organisations or social structures. It also relies on staff capacity and willingness to complete additional questions in their assessments, when, as is discussed later in this chapter, staff are already concerned about capacity and may be influenced by their own smoking status.

Despite these concerns and limitations, the enhancement of routinely collected data via NDMTS or a similar process could help to provide a more accurate representation of the prevalence of smoking cessation, as well the interventions offered and any outcomes. This recommendation for future work is discussed in more detail in Chapter 9, but reflects findings from earlier work by Gifford et al (2013) who highlighted that the diagnosis and documentation of tobacco use and related issues presented a barrier to the routine offering of smoking cessation support. This change might encourage a cultural shift within substance use treatment services to integrate smoking cessation, although this could present a challenge in terms of acceptability to organisations, staff and service users, as well as questions around the appropriate outcome measures to be captured. There is potential that such a modification to the database could provide better data on smoking cessation outcomes and how they relate to other substance outcomes, which could be used to inform the evidence base and demonstrate to service users and staff the realities of these interactions.

Concerns about other substance use outcomes and how they are impacted by smoking cessation continue to be voiced, by both staff and service users. This may be for a number of reasons; organisational priorities as well as those of staff and service users focus on the cessation of using substances other than tobacco – as such anything that may be considered a risk to this is deprioritised. This is indicative of how the organisation priorities can impact on treatment, as

philosophies or disciplines will prioritise different outcomes. Despite literature to refute the belief that smoking cessation hinders the cessation of other substances, these beliefs remain common amongst both staff and services users. Whilst offering a choice in regard to the timing and outcomes of any smoking cessation intervention, better communication of this evidence and how it relates to the individual may help to address these concerns.

8.3.4   Practical aspects of interventions

The third aim of this PhD was to determine which factors need to be considered when developing smoking cessation support for PWUD/A. This chapter has explored some of the broader considerations, but it is also important to look at the specifics and practicalities of smoking cessation support. The BCTs recommended for inclusion in future smoking cessation interventions tailored for delivery in substance use treatment services were presented in the previous chapter as part of the BCS, and as such are not reproduced here (Tables 45 and 46). The intervention components assessed as suitable for inclusion in a smoking cessation intervention for substance use treatment services were also presented in Chapter 7 (Table 47) and as such are not repeated here.

Some of these factors are wide reaching and will be relevant to any substance use treatment service, whereas some may be unique to the participants of this research, and may not be transferable outside the UK, or even the Northwest of England. However, all of these factors were raised through this research and should be considered, even if the methods of implementation vary by context. As discussed elsewhere, recovery is about choice and a person-centred approach should be taken to address the practical aspects discussed here.

As this research has identified, the time and place at which to deliver smoking cessation is important. substance use treatment services can offer a supportive and familiar setting for PWUD/A to access additional support for issues such as smoking, and the qualitative study (Chapter 6) found that participants were in favour of accessing smoking cessation within the substance use treatment service. As discussed above, this is partly due to stigma and concerns about other settings not being as understanding about the interactions between smoking and substance use. This is in keeping with the concept of a recovery focus, where substance use treatment services are places which promote and encourage overall well-being, beyond substance use.

Timing is also very important, and there are differing opinions about when smoking cessation should be offered or provided. The changing of social norms can help to make smoking less acceptable and cessation or reduction an integral part of recovery. Regularly offering or starting conversations about smoking cessation may begin to change the norms within substance use treatment services and encourage PWUD/A to become accustomed to smoking cessation being part of the service, or as several participants put it, 'plant the seed'. It is hoped that if smoking cessation is readily available and accessible then participants will be able to embrace the opportunity as the motivation arises, rather than being faced with additional barriers which may prevent them from accessing support.

It is also necessary to acknowledge that the process of recovery can be slow and non-linear and may involve lapses or relapses. In contrast to many smoking cessation services, substance use treatment services should recognise this aspect and treat such lapses as learning experiences to build upon, rather than failure. As such, continued engagement should be encouraged and participants should be welcomed to resume attendance or begin the programme again as often as is

necessary. Stopping the use of any substance can take multiple attempts, and participants should not be penalised for this. Instead, these instances can be used to identify learning points and ways to address barriers so that the next attempt is more successful. Harm reduction or abstinence should both be offered and goals may change over time. This should be encouraged and any progress acknowledged and praised.

Agency and Autonomy

These themes were discussed in Chapter 7 and have been mentioned throughout the different sections of this chapter, but are key concepts which should be used to inform any intervention or healthcare programme for PWUD/A or for delivery in substance use treatment services. Agency and autonomy are both crucial to concepts of motivation and behaviour change, within a recovery informed lens that places the needs and perspectives of PWUD/A at the heart of any treatment or intervention. These themes inform all of the practical considerations discussed above and support the concept of choice and communication to empower PWUD/A to achieve recovery.

8.3.5   Acceptability

Acceptability to staff can influence the way in which interventions are delivered, as confirmed by Study 3; they may not be delivered in the way in which it was intended and this may have an impact on the effectiveness (Borelli 2005; Proctor 2013). It is also important that staff believe in the appropriateness of the intervention, as any disconnect between personal beliefs and behaviours can result in less authentic and effective delivery of the intervention and undermine the therapeutic alliance between staff and service users which is an important element of substance use treatment services (Ogden et al, 2016).

As the previous chapters have explored, there are many different stakeholders relating to the issue of smoking in people who use substances, and each of these have different perspectives and priorities. In order to address this issue, any service provision needs to acknowledge these different perspectives and address the conflicting priorities. Smoking cessation in this setting is a complex and multi-faceted problem, and one that requires a coordinated effort from all parties to implement effective change. In order for this to happen, any recommendations need to be acceptable to all stakeholders. For example, changing provision of smoking cessation needs support from organisational levels to allow staff to implement new programmes, to offer training and support to staff or peers delivering the services; from staff to encourage and support smoking cessation initiatives and to contribute to changing social norms in substance use treatment services; and from people accessing services. We know that people accessing services are often open to the idea of smoking cessation (or reduction), but that additional support to make this as accessible and available as possible is needed to encourage the uptake of smoking cessation. For these reasons, any future interventions need to be acceptable to all stakeholders. This can be challenging, as the different priorities are not always compatible. However, the common goal to improve the lives and health of people accessing services should provide a source of unity which can bridge the gaps between these stakeholders.

It is also important to adopt a pragmatic approach to delivering and implementing smoking cessation in substance use treatment services; lack of resources may be an issue in many services, but this does not mean that smoking cessation should not be offered. Where possible, low cost and low effort options should be implemented. For example, key workers

broaching the topic of smoking and possible cessation with their clients is an easy way to begin to open dialogue around the issue and changing social norms.as well as challenging stigma (Wood et al, 2018). Identifying barriers and issues which can be addressed may also result from these conversations. Adopting a non-judgemental approach here will be beneficial, as many feel that they are being judged about their smoking behaviours and refuse to discuss it with staff. Discussing options including a harm reduction approach may help to have these discussions and 'plant the seed' as several participants in the qualitative study described it.

Acceptability is important to PWUD/A, as this can affect motivation to quit smoking, and to take part in a smoking cessation intervention. Motivation is linked to increased effectiveness and improved outcomes (Mueller, Petitjean and Wiesbeck, 2012).

Acceptability is essential in any intervention to encourage staff and organisations to implement new smoking cessation programmes, but also to encourage PWUD/A to take part in interventions, as well as to maintain engagement and retention with the programme. Behavioural interventions for smoking cessation do work and should be offered whenever and wherever possible and practical, and participants should be encouraged to take part. For this reason, barriers to engagement should be identified and addressed, and facilitators exploited. The concept of staff acceptability is discussed further in the later section on staff attitudes, but this central to the implementation of any intervention and should be considered when designing and planning the implementation of smoking cessation interventions.

Choice

One of the overarching themes to emerge from this research is that of choice. This is an essential component as it contributes to a sense of empowerment and autonomy. This can be implemented in many different ways, some of which are outlined in this chapter, and should include goals and desired outcomes, as well as the preliminary choice of taking part in any smoking cessation interventions in the first place. Allowing individuals to make these choices can enhance motivation to quit or to change and providing them with adequate information and support to allow for informed decisions to be made can also support a sense of agency. Although the goal of substance use treatment services and for any smoking cessation intervention is to improve health, there are many ways in which this can take place and ways in which people can be encouraged and supported to make meaningful changes to their own lives. The underlying ethos of the recommendations made here for smoking cessation interventions are to support recovery and positive behaviour changes. Recovery can involve a radical shift in behaviours and in ways of life, and small changes which support this can have an impact, even if the initial outcomes are not as significant as total abstinence. Accepting that these changes may take time and that this is necessary to ensure sustainable changes in behaviours and in lifestyle is important when implementing smoking cessation programmes. Many smoking cessation interventions focus on short term abstinence yet have less impressive long term impacts. Small, sustainable and incremental changes can be effective in achieving longer term success and should be encouraged. Choice is a key component in recovery and is discussed under this section later in this chapter. It also links to agency and autonomy, also discussed later on.

The perspectives of staff have been discussed in the earlier sections on barriers and facilitators, but a key finding of this PhD relates to staff perceptions around competence to delivery smoking cessation. There is an existing body of evidence surrounding staff perspectives and how they can influence the health beliefs and behaviours of their clients (Kelly et al, 2019). Despite this, few interventions have been designed to address these issues. A recommendation from this research is the development and implementation of a staff training programme, which explores the issues from the staff perspective and addresses some of the issues identified through this and other work.

One of the issues here is the smoking status of staff. Whilst it would be inappropriate and unethical to ban staff in substance use treatment services from smoking, especially in research which advocates for choice, this does present a barrier to the implementation and motivation for delivering smoking cessation. The importance of the therapeutic alliance has been discussed elsewhere in this chapter, but it is also worth noting that staff can be perceived as role models (Guydish et al 2023), as confirmed by staff interviews in Study 3. The dissonance between their behaviour and their role can be problematic for both staff and service users in terms of promoting or discussing smoking cessation. However, the duality of positions held by some staff could be useful in exploring the barriers from another perspective, to ensure that this conflicting position is addressed appropriately.

As previous research found, staff smoking status impacts on how they feel about and promote smoking cessation (Teater and Hammond, 2009), and also relates to prevalence of client smoking in their services (Guydish et al, 2023). This research also found that staff experience of smoking influenced how they felt about offering smoking cessation, some worrying about appearing hypocritical if they encouraged clint smoking cessation when they smoked themselves. Although there is no easy solution to this challenge, it does highlight the need for staff perspectives to be explored and their concerns addressed, potentially though a discussion space where they can explore their feelings about smoking, or by encouraging staff smoking cessation in addition to clients'.

Identifying these competing perspectives is one of the reasons that a mixed methods approach, and one that includes a range of stakeholders is beneficial. Any intervention or shift in organisational norms needs to be supported and understood by the full range of people involved. The staff interviews in Study 3 all expressed concerns about capacity, which is unexpected given the increased pressures placed on the during and since the pandemic. In this light, it is important to consider how to address their concerns, training needs and the other barriers that were identified, without losing their support by adding to their workload. One of the key recommendations suggested in the next chapter is for the development of an intervention targeting staff, to better understand and address their concerns. This will be discussed more in the following chapter, but this research identified an important area for further work.

In order for behaviour to change, an individual must possess competence, relatedness and autonomy (Deci and Ryan, 2015). This is true for staff as well as people accessing substance use treatment services, so any preliminary intervention or approach to improve the acceptability of smoking cessation to staff must address these. One of the barriers presented by staff in study 3 was that they did not feel that they had the knowledge or skills to deliver smoking cessation, although most of the clients interviewed felt that staff were ideally placed to deliver it. This is interesting as it presents a contrast with a recent study by Martinez et al (2023) who found that staff believed they had the skills, whereas only a third of

clints agreed. Increasing competence and self-belief of staff in terms of knowledge and skills for delivering smoking cessation could play a significant role in changing their behaviours.

Additionally, organisation support is needed to implement and encourage any significant changes. Whilst an intervention for staff could offer tailored and targeted training to address concerns around knowledge and competence, an organisational shift to emphasise the importance of smoking cessation as an important part of recovery would be required. Changing policies to incorporate smoking cessation would reinforce the position of staff who are motivated to promote or deliver smoking cessation, making it easier for them to do so through the use and availability of a relevant and appropriate evidence base, and increased their feeling of competence and relatedness.

8.4 Conclusions

There is a need for further work to better understand how these recommendations can be implemented and presented as a flexible yet comprehensive toolkit for smoking cessation interventions in substance use treatment services. However, the identification of barriers and facilitators, ways to address and enhance these and support all stakeholders in changing the social norms around smoking in substance use treatment services offer a solid grounding for the development and implementation of such programmes. This can begin to address the health inequalities facing this population by adopting a more holistic, person centered approach to treatment. Behavioural interventions for smoking cessation are evidence based and effective, and with the adaptations discussed here can be made acceptable and accessible for people who use drugs or alcohol. This is essential for gaining the support of all stakeholders in order to promote engagement and improve health outcomes.

The final chapter which follows summarises the recommendations for interventions to support smoking cessation or reduction in substance use treatment services, using the findings from the different studies which make up this thesis. As discussed in this chapter, all of these recommendations are based on a pragmatic, recoverist approach which should be flexible and encourage agency, autonomy and choice wherever possible, in order to improve not just smoking related outcomes, but broader, recovery -focused outcomes which can improve the lives, health and well-being of PWUD/A as well as their friends, families and communities.

Table 51   Summary of PhD aims.

Aim	Status
Explore evidence on smoking cessation in people who use drugs or alcohol	This has been addressed through the use of a range of methods and using a range of data sources or evidence types.
Assess the applicability of existing evidence in the context of substance use treatment, using a recoverist lens	The concept of recovery has been used throughout this thesis to assess applicability of evidence in this context, with a number of barriers and limitations suggested, along with ways to address some of these.
Determine which factors need to be considered when developing smoking cessation support for people in substance use treatment from multiple perspectives	This has been addressed using both the BCS and integration of the findings of Studies 1,2 and 3. Practical factors, BCTs and other intervention components are discussed in this chapter, with specific recommendations give in the following chapter.
Explore the concept of acceptability in relation to smoking cessation provision in substance use treatment	This was done in a systematic way in Chapter 7, BCS, using the APEASE criteria, which was implemented in a slightly modified way to place additional emphasis on the acceptability to all stakeholder, but especially to PWUD/A. A broader discussion on acceptability and its role in smoking cessation interventions for substance use treatment services is presented in this chapter.

Reflections at the end of the PhD:

As I bring this thesis together, and reflect back over the last five years, the concept of pragmatism seems increasingly relevant. This research bears very little resemblance to the project I planned back in 2018, but this is due to the many opportunities for learning and building upon my knowledge as well as a response to some of the challenges that presented along the way.

The reflective practice has made me think differently about my positionality and how I frame myself as a researcher. Instead of my lived experience being something I was ashamed of, I am able to embrace the uniqueness of my position; a hybrid researcher and person with lived experience. These are strengths to be acknowledged from this, as it allows me to bridge two disparate worlds, in an attempt to better understand both.

The process of exploring the multiple types and sources of data has made me think more critically and more broadly about what constitutes 'good' evidence, and the relevance of that to specific contexts. I started this research with a belief that 'we' as a community of health researchers should and could be doing more to acknowledge and address the unique needs of, and challenges faced by PWUD/A. This has only been reinforced as my PhD progressed, and I have developed a deeper understanding of how and why this should be done.

I maintain my commitment to championing PWUD/A from a recoverist perspective, although I have only recently found the name for my stance. Recoverism is a concept I have struggled with, as is recovery. It means many different things to many different people, and I have come to terms with my own journey of recovery and what it means to me. This PhD has been a big part of my journey over the last five years, and the experiences I have had during this process will continue to form part of who I am for a long time to come.

Chapter 9 Conclusion

9.1 Introduction

This chapter presents recommendations for interventions for implementation in substance use treatment services, both in terms of specific component and BCTs, and in terms of a broader, recovery-informed ethos. These were explained in more detail in Chapter 7. The BCTs recommended are presented in Tables 46 and 47, which includes an example of how these could be implemented in smoking cessation interventions. A brief discussion of the extent to which these recommendations address they key issues and limitations of existing evidence will follow, with the next section examining the strengths and limitations of this study, before making suggestions for future research.

9.2 Recommendations

9.2.1 Ethos

Recommendations for a smoking cessation / reduction intervention for adults accessing substance use treatment services, which should be underpinned by a recovery-informed approach:

Choice

Choice should be offered wherever possible and practicable. Ensure that everyone is given the opportunity to take part and to set their own goals, whether that relates to cessation or harm reduction.

Agency and autonomy

Allow participants to take control of their own recovery and decide what that looks like. Offer support and information to ensure they can make informed decisions and respect their autonomy and right to make those decisions.

Availability and accessibility

Ensure that wherever possible, interventions are made accessible to all who wish to take part. Missing a session should not lead to exclusion, although the individual may have to wait until a convenient point to re-join the group. Participants should not be excluded due to failure to meet goals, instead they should be supported to reaffirm their goals and keep trying. Where necessary, adapt the timing and location of the group to accommodate participants.

9.2.2 Practical aspects

The following are recommendations for the design and implementation of the intervention:

- **Setting:** smoking cessation should be offered within the substance use treatment service.
- **Delivery**: interventions should be offered in a group setting, face to face where possible.
- **Provider:** the intervention should be delivered by a substance use worker, with support from a peer or person with lived experience.
- **Training** and support should be provided to staff in the form of education, materials and support from a smoking cessation specialist, and a prescriber if necessary.

- **Outcomes** should be agreed with the individual and may include abstinence or reduction in cigarettes smoked per day.
- **Additional outcomes** such as quality of life, motivation to quit or other qualitatively assessed outcomes may be included.
- **Outcome measures** should be self-reported. They may also be biochemically verified if agreed by participants.
- **Pharmacotherapy** should be offered to all and provided if appropriate.
- **E-cigarettes** should be offered and provided if possible.
- **Additional training** for staff should be provided around pharmacotherapy and the use of e-cigarettes.

9.2.3   BCTs

The following behaviour change techniques should be included in the intervention where possible and relevant, with examples of how this could be done in relation to smoking cessation.

Table 52   Recommended BCTs with examples (Part i).

BCT number	BCT description	Example
1.1 Goal setting (behaviour)	Set or agree on a goal defined in terms of the behaviour to be achieved	Agree on a quit date with the client.
1.2 Problem solving	Analyse, or prompt the person to analyse, factors influencing the behaviour and generate or select strategies that include overcoming barriers and/or increasing facilitators	Identify specific triggers (e.g. being in a pub, feeling anxious) that generate the urge/want/need to smoke and develop strategies for avoiding environmental triggers that motivate smoking.
1.5 Review behaviour goals	Review behaviour goal(s) jointly with the person and consider modifying goal(s) or behaviour change strategy in light of achievement. This may lead to re-setting the same goal, a small change in that goal or setting a new goal instead of (or in addition to) the first, or no change	Review with the client if the main goal of abstinence from cigarettes has been achieved. This may lead to resetting a quit date if the client has lapsed.
2.6 Biofeedback	Provide feedback about the body *(e.g., physiological or biochemical state)* using an external monitoring device as part of a behaviour change strategy	Inform the person of their measured expired-air carbon monoxide concentration to encourage smoking cessation
3.1 Social support (unspecified)	Advise on, arrange or provide social support *(e.g., from friends, relatives, colleagues,' buddies' or staff)* or non-contingent praise or reward for performance of the behaviour	Advise the client to ask for social support during the quit attempt from family members, friends, or colleagues Advise the person to call a 'buddy' when they experience an urge to smoke

Table 53   Recommended BCTs with examples (Part ii).

3.2 Social support (practical)	Advise on, arrange, or provide **practical** help *(e.g., from friends, relatives, colleagues, 'buddies' or staff)* for performance of the behaviour	Advise client to ask partner to remove all smoking materials from their shared home. Advise the client to get a friend, relative or colleague to drive them to the pharmacy to get stop smoking medication, if it is difficult to get to the pharmacy, or to the substance use treatment services to attend a group Ask the partner of the client to put their stop smoking medication on the breakfast tray so that the client remembers to take it.
3.3 Social support (emotional)	Advise on, arrange, or provide **emotional** social support *(e.g., from friends, relatives, colleagues, 'buddies' or staff)* for performance of the behaviour	Advise the client to contact a 'buddy' to provide emotional support if the client has a difficult time staying abstinent.
5.1 Information about health consequences	Provide information (e.g., written, verbal, visual) about health consequences of performing the behaviour	Give the client a leaflet on the health consequences of smoking or verbally explain them.
5.2 Salience of consequences	Use methods specifically designed to **emphasise** the consequences of performing the behaviour with the aim of making them more memorable (goes beyond informing about consequences)	Show the client a 'tar jar' which contains all tar that passes through the lungs in a year, to increase awareness of the health consequences of smoking
6.2 Social comparison	Draw attention to others' performance to allow comparison with the person's own performance	Show the proportion of patients who have had previous failed quit attempts and have successfully quit smoking Draw attention to how well other group members have managed to use stop smoking medication and compare this with the person's own performance
8.1 Behavioural practice/rehearsal	Prompt practice or rehearsal of the performance of the behaviour one or more times in a context or at a time when the performance may not be necessary, in order to increase habit and skill	Advise to practice or rehearse not smoking in a context or time prior to the quit date, to increase the habit of not smoking

Table 54   Recommended BCTs with examples (Part iii).

8.2 Behaviour substitution	Prompt substitution of the unwanted behaviour with a wanted or neutral behaviour	Prompt the client to substitute smoking a cigarette with a wanted or neutral behaviour (e.g. brief physical exercise, eating a lollipop)

9.1 Credible source	Present verbal or visual communication from a credible source **in favour of or against the behaviour**	Present verbal or visual communication from a high-status health expert in favour of smoking cessation
9.2 Pros and cons	Advise the person to identify and compare reasons for wanting (pros) and not wanting to (cons) change the behaviour	Advise the client to generate a list of reasons why they do and why they do not want to stop smoking
10.1 Material incentive (behaviour)	Inform that money, vouchers or other valued objects **will be** delivered if and only if there has been effort and/or progress in performing the behaviour	Inform that a financial payment will be made each month the client has not smoked Inform the client that vouchers will be given for each week in which stop smoking medication is used correctly
10.3 Non-specific reward	Arrange delivery of a reward if and only if there **has been** effort and/or progress in performing the behaviour	Identify something (e.g. an activity such as a visit to the cinema) that the person values and arrange for this to be delivered if and only if they have stayed abstinent for a week (or met an agreed reduction goal)
10.4 Social reward (behaviour)	Arrange verbal or non-verbal reward if and only if there **has been** effort and/or progress in performing the behaviour	Congratulate the person for each week they do not smoke Give praise or encouragement for improving their adherence to stop smoking medication
10.9 Self-reward	Prompt self-praise or self-reward if and only if there **has been** effort and/or progress in performing the behaviour	Encourage the client to praise themselves if and only if they have been abstinent for 2 days
11.1 Pharmacological support	Provide, or encourage the use of or adherence to, drugs to facilitate behaviour change	Enact the necessary procedures to ensure that the client gets their stop smoking medication easily and without charge where appropriate

Table 55   Recommended BCTs with examples (Part iv).

11.2 Reduce negative emotions	Advise on ways of reducing negative emotions to facilitate performance of the behaviour	Advise on the use of specific relaxation techniques to the client to make it easier to stay abstinent
11.3 Conserving mental resources	Advise on ways of minimising demands on mental resources to facilitate behaviour change	Advise the client to relax as much as possible and get a good night's sleep while trying to stop smoking.
13.1 Identification of self as a role-model	Inform that one's own behaviour may be an example to others	Inform the client that if they quit smoking, they would be a good role-model for smoking friends
13.2 Framing/reframing	Suggest the deliberate adoption of a perspective or new perspective on behaviour (e.g., its purpose) in order to change cognitions or emotions about performing the behaviour	Suggest the client deliberately adopts a different, more positive view on past failed quit attempts or lapses (e.g. advise that lapses can be viewed as a valuable learning experience that can help with this quit attempt)
13.5 Identity associated with changed behaviour	Advise the person to construct a new self-identity as someone who 'used to engage with the unwanted behaviour'	Ask the person to articulate their new identity as an 'ex-smoker'
15.1 Verbal persuasion about capability	Tell the person that they can successfully perform the wanted behaviour, arguing against self-doubts and asserting that they can and will succeed	Tell the person that they can quit smoking even though previous quit attempts have not been successful
15.3 Focus on past success	Advise to think about or list previous successes in performing the behaviour (or parts of it) Advise to think about or list previous successes in performing the behaviour (or parts of it)	Ask the client to describe times when they have successfully gone without a cigarette in a situation in which they would normally have smoked

9.2.4 Discussion

These recommendations support the underpinning principles of a recoverist approach, and aim to address some of the limitations of the existing evidence for smoking cessation in this setting. As highlighted throughout this thesis, traditional approaches to research and evidence take a 'top-down' approach, with the views of PWUD/A being disregarded, or at best included in a tokenistic and minimal way. This research aims to challenge this hierarchy and prioritise the views of PWUD/A and their needs and wants in relation to substance use treatment. This is done via the use of a recoverist lens, which focuses on a tailored, contextualised and person-centred approach. By promoting agency, this work aims to reduce health inequalities by addressing PWUD/A as individuals who have the right and ability to make informed choices about their health. Adoption of this approach is likely to encourage an increased number of quit attempts, successful quits and an overall reduction in the harms that this group face.

The recommendations made above are consistent with this approach, and all have been assessed using the APEASE criteria with an emphasis on the acceptability to PWUD/A as well as those delivering services. Although effectiveness is an important consideration, implementation and engagement are essential to achieving effectiveness, and cannot be achieved without interventions being accepted by PWUD/A and treatment staff. All of these recommendations are tailored and contextualised to this setting and population, which aims to provide a more relevant, acceptable and effective intervention.

A key element of the recommendations is choice; many of these aim to encourage autonomy via enabling PWUD/A to make informed decisions about their treatment. This is also true of staff, as the recommendation to provide additional staff training aims to address concerns around competence and confidence in their own knowledge and abilities to deliver interventions for smoking cessation. If staff feel better equipped to enter into discussions around e-cigarettes or pharmacotherapy, this in turn should enable them to share their knowledge and encourage autonomous decision making and motivation.

This also applies to outcome reporting and the inclusion of additional outcomes, as these are designed to offer choice and promote autonomy. Recognising that an individual can chose their own goals and outcomes should be an empowering process, which is supported by experts (this might be experts by training or by experience). With self-reported outcomes, this aims to build trust and shift the balance of power in favour of PWUD/A.

With the majority of the recommendations, the key word is 'offered'. E-cigarettes, pharmacotherapy, biochemical verification of smoking status, harm reduction in general, should all be offered, rather than provided or enforced. Choice should be given to foster agency and autonomy, and these decisions should be supported. It is also important to acknowledge that any treatment options need to be flexible and proactive in order to address the inequalities related to substance use. However, it is worth noting that substance use treatment faces challenges regarding funding, which may limit the availability of such flexible offerings. This represents a systemic problem which perpetuates stigma and health inequalities, and requires a multi-faceted approach to address.

Offering choices and information all work towards reducing stigma, by recognising the value of the individual and their rights to autonomy over their treatment. Challenging the hierarchy of evidence and the failure to adequately include or

represent PWUD/A can also be seen as working to challenge stigma, within research and evidence as well as healthcare. This is of utmost importance to encourage a systemwide change in how PWUD/A are viewed and how they are included in their own care.

9.3 Strengths and limitations:

The strengths and limitations of each study have been discussed in the relevant chapters, but a broader overview is considered here. A key strength of this study is the novel approach to evidence synthesis, using a unique set of data sources. This was underpinned by a pragmatic, recoverist approach which aimed to use the most appropriate method to answer the research questions, and as such was not bound by strict boundaries or limitations of a more traditional methodology, This enabled the use of a recoverist lens to examine and assess the different data sources and their applicability to the setting of substance use treatment services. This methodology could be seen as a weakness, as it is less reliant on established methodologies, but is still informed by a theoretical framework and rigorous methods, with efforts made to ensure reliability and validity wherever possible.

A central aspect of this thesis is the use of the BCW and the associated processes to create recommendations which are tailored to this context. Some of the strengths and limitations of this approach are discussed in Chapter 2, but warrant a further discussion here in terms of how this research has addressed these limitations and built on the strengths. The main limitation of the BCW approach is that it can oversimplify human behaviours and fails to take into account contextual factors. This has been addressed by contextualising the research to PWUD/A in treatment settings, and using this to underpin all aspects of the research. Much of the published literature on smoking cessation in specific populations overlooks this need, making assumptions that what is effective in one context will translate to another. Using the recoverist lens to view this topic has enabled an approach which shifts the focus away from what is proven to be effective in the wider population, to explore what is acceptable and how effective components can be translated into the context of substance use treatment.

Using a variety of evidence sources and taking a critical approach to their suitability for the population, has allowed for a more nuanced application of the BCW. Contextualising the evidence to substance use treatment aims to reduce stigma and empower PWUD/A to take control of their own treatment. The use of additional evidence sources has also allowed for a broader approach which supplements the BCW framework, building on its strengths but addressing some of the intervention components which are beyond the scope of the BCW. The BCW is a theory based framework which offers a flexible approach to intervention design, and this flexibility has been utilised here to adapt the framework to allow for a more contextualised approach. Using stakeholder interview data as well as quantitative secondary data analysis has enabled the identification of these components for inclusion in the recommendations. This also helps to contextualise the BCT recommendations, as do the examples listed in Tables 52-55.

Modifying the APEASE criteria by shifting the emphasis to the acceptability of components or BCTs to PWUD/A as well as those delivering treatment has also facilitated a recoverist approach, by putting the needs and wants of these groups at the forefront of intervention design. The use of the acceptability criteria has also addressed the limitation of the BCW which relates to the potential harms of some BCTs or their delivery. By assessing each for acceptability, any which present harm or may be alienating or intimidating have been removed, as have any associated with coercion or enforcing behaviours, as these do not promote a recoverist approach. The BCTs used aim to promote autonomous motivation and facilitate autonomy through the sharing of information and allowing people to make informed decisions.

The role of the researcher has been discussed throughout and presents on of the key strengths of this research. The unique, hybrid role the researcher held enabled a deeper understanding of the data and enabled the inclusion and prioritisation of the voices of PWUD/A, as well as the staff in substance use treatment services, whilst following a robust research methodology. The personal journey that this research embodied has been explored through the reflections presented, which has captured the unique position of the researcher, as well as the challenges and benefits presented through the context of this research. The challenge of conducting research during a pandemic was considerable but served to reinforce the importance of researching PWUD/A in a recovery-informed way.

One of the key themes for this research is that of competing priorities, and this has been true throughout the research process. Balancing the personal priorities of the researcher with the demands of a PhD, the requirements of a funding body and the challenges of a pandemic have been difficult but reflects the challenges of doing research in this context. The different perspectives and data sources used in this thesis highlight that much of the existing evidence is not appropriate for PWUD/A, as it fails to take into account their needs or perspectives, and therefore may have limited usefulness, as it doesn't consider confounding or supporting factors unique to this group.

This research has raised bigger questions about research culture and established hierarchies which extend beyond PWUD/A and include any marginalised groups or communities. Whilst there is a benefit of using existing evidence to draw comparisons and conclusions where relevant, often it is not acknowledged that the 'general population' studies may have limited relevance to other, distinct subgroups. This is an important area for future work to explore how best to address these challenges and redress hierarchies in research culture and healthcare.

9.4 Recommendations for future work

Below are some recommendations for future work in this area, based on the findings and issues highlighted. The first provides a natural continuation of this work; to design and implement a smoking cessation intervention for delivery in substance use treatment services, based on the recommendations of this thesis.

Using these as a basis, a co-produced pilot would be delivered, with the aim of producing a template for substance use treatment services to use for interventions. This takes into account the unique needs and differences of different populations and substance use treatment services, but the production of a template based on a group- delivered intervention would allow for an evidence-based framework to be shared, whilst allowing for the flexibility and choice that a recovery-informed approach demands.

This would build on the BCTs to provide appropriate and acceptable examples of how these can be incorporated into an interventions – often it is not clear how to do this so using a co-production approach could provide a user-friendly guide to implementation.

Another key finding from this research is the importance of acceptability of smoking cessation interventions to substance use treatment services staff. An intervention to increase motivation and enthusiasm for smoking cessation, as well as to address gaps in knowledge around the smoking cessation, e-cigarettes and the interactions between smoking and other substance use could be beneficial in this regard. As with the client intervention, a co-production approach would be used

to ensure acceptability and relevance to the staff, as well as organisations who operate substance use treatment services. This may take the form of an accessible, online learning platform, or a tailored intervention based on appropriate evidence, and should include some kind of social aspect or discussion forum to allow for support and sharing experiences.

Another suggestion to enhance the evidence base for this population would be the development and production of a systematic review, along the lines of the ICSmoke database but using an approach which is more suitable for PWUD/A, including more appropriate outcomes such as improved quality of life, other physical and mental health outcomes as well as smoking related ones, to include a reduction in CPD. This was discussed in Chapter 5.

The following suggestion is broader in scope but does have potential to have significant impact on PWUD/A. One of the issues highlighted through this research is the lack of relevant data in smoking cessation in substance use treatment services, from prevalence to interventions and outcomes. An addition to the NDTMS dataset, or a complementary data collection system which would collect this data, again, focused on recovery-informed outcomes in addition to abstinence could address these challenges.

9.5 Summary of final chapter

This PhD critically analysed evidence from a dataset of randomised control trials of behavioural interventions for smoking cessation and use this evidence, along with qualitative data, to inform practice by producing recommendations. This chapter summarised recommendations in terms of the general ethos and the practical aspects, then going on to specifically consider recommendations in relation to BCTs. Following a recognition of the strengths and limitations of the PhD, a series of recommendations for future work were outlined.

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Appendices

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Swithenbank, Zoe

From:	researchethics
Sent:	18 July 2019 15:13
To:	researchethics; Swithenbank, Zoe
Cc:	Hay, Gordon; Porcellato, Lorna
Subject:	Approved - Swithenbank - 19/PHI/037
Attachments:	Ethics application July 19 ZS.pdf

Follow Up Flag:	Flag for follow up
Flag Status:	Flagged

Dear Zoe

With reference to your application for Ethical Approval

Zoe Swithenbank, PGR - Psychosocial interventions for smoking cessation in substance use treatment services (Gordon Hay/Lorna Porcellato)

UREC reference: 19/PHI/037

The University Research Ethics Committee (UREC) has considered the above application. I am pleased to inform you that ethical approval has been granted and the study can now commence.

Approval is given on the understanding that:

- any adverse reactions/events which take place during the course of the project are reported to the Committee immediately by emailing researchethics@ljmu.ac.uk;
- any unforeseen ethical issues arising during the course of the project will be reported to the Committee immediately emailing researchethics@ljmu.ac.uk;
- the LJMU logo is used for all documentation relating to participant recruitment and participation e.g. poster, information sheets, consent forms, questionnaires. The LJMU logo can be accessed at http://www2.ljmu.ac.uk/corporatecommunications/60486.htm;
- The study consent forms, data, information etc. will be accessible on request to a student's supervisory team and/or to responsible members of Liverpool John Moores University for monitoring, auditing and data authenticity purposes.

Where any substantive amendments are proposed to the protocol or study procedures further ethical approval must be sought (https://www2.ljmu.ac.uk/RGSO/93205.htm)

Applicants should note that where relevant appropriate gatekeeper / management permission must be obtained prior to the study commencing at the study site concerned.

Please note that ethical approval is given for a period of five years from the date granted (18/07/19) and therefore the expiry date for this project will be 5 years from the approval date. An application for extension of approval must be submitted if the project continues after this date.

Yours sincerely

**Mandy Williams, Research Support Officer
(Research Ethics and Governance)
Research and Innovation Services**
Kingsway House, Hatton Garden, Liverpool L3 2AJ
t: 01519046467 e: a.f.williams@ljmu.ac.uk

Title of Project: Psychosocial interventions for smoking cessation in substance use treatment services

Name of Researchers: Zoe Swithenbank

Please tick to confirm your understanding of the study and that you are happy for your organisation to take part and your facilities to be used to host parts of the project.

This part of the research will involve staff being invited to one on one interviews about smoking cessation.

1. I confirm that I have read and understand the information provided for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2. I understand that participation of our organisation and clients in the research is voluntary and that they are free to withdraw at any time, without giving a reason and that this will not affect legal rights.

3. I understand that any personal information collected during the study will be anonymised and remain confidential.

4. I agree for our organisation and clients to take part in the above study.

5. I agree to conform to the data protection act

Name of Gatekeeper: Date: Signature:

Name of Researcher: Date: Signature:

Name of Person taking consent: Date: Signature:
(if different from researcher)

Title of Project: Psychosocial interventions for smoking cessation in substance use treatment services

Name of researcher: Zoe Swithenbank, Public Health Institute PhD student

1.   **What is the reason for this letter?**

   I am writing to request consent to carry out a research project as part of my PhD in Public Health which will explore behavioural interventions for smoking cessation for adults in substance use treatment.

2.   **What is the purpose of the study/rationale for the project?**

   The PhD aims to develop, implement and evaluate a group-based smoking cessation intervention for adults in treatment for substance use. Smoking rates are significantly higher in this population, and this research aims to explore the reasons for this, and ways to address this issue . This part of the study aims to explore staff attitudes, barriers and perspectives on smoking cessation interventions and current practice.

3.   **What we are asking you to do?**

   In order to carry out this research study I need your consent to access the service and to invite staff to participate in interviews with myself. These will take place at a mutually convenient time (but during staffed hours), at the service itself. Access to a counselling room or similar would be necessary. You will be asked to invite staff to attend a brief presentation about the study, given by myself at your service.

4.   **Why do we need access to your staff?**

   This study will only include participants who are currently working in substance misuse treatment services. Therefore it is necessary to access a treatment service.

5.   **If you are willing to assist in the study what happens next?**

   If you are willing to assist in the study, I will arrange a time that is mutually convenient for me to come to the service and to explain the study to the staff. You will be asked to invite staff, either in person or via email, to attend the session. Participant information forms will be distributed and any questions answered. After a week I will return to the service to ask any willing participants to complete consent forms and to discuss arrangements for the interviews. These will take up to one hour each, and will be conducted by the researcher.

6.   **How we will use the Information?**

All information collected during the study will be kept confidential. I will transcribe interview tapes myself and these will be kept secure at all times. Any paper notes will be kept secure. Names and any identifying information will be anonymised during the transcription process. Once typed all information will be kept on a password protected computer that will be accessed only by the research team.

7.   Will the name of my organisation taking part in the study be kept confidential?

The name of the organisation will be kept confidential at all times. Any reference to it during the interviews will be removed or anonymised during the transcription process.

8.   What will taking part involve? What should I do now?

Sign and return the Gatekeeper Consent Form provided.

Should you have any comments or questions regarding this research, you may contact the researchers:
Zoe Swithenbank, *z.a.swithenbank@2019.ljmu.ac.uk, (Mobile number to be updated)*

This study has received ethical approval from LJMU's Research Ethics Committee *(insert REC reference number and date of approval)*

Contact Details of Researcher *Zoe Swithenbank,   z.a.swithenbank@2019.ljmu.ac.uk, 0151 231 5829*
Contact Details of Academic Supervisor: *Dr Gordon Hay, g.hay@ljmu.ac.uk, 0151 231 4385*

If you have any concerns regarding your involvement in this research, please discuss these with the researcher in the first instance. If you wish to make a complaint, please contact researchethics@ljmu.ac.uk and your communication will be re-directed to an independent person as appropriate.

Study 1 (Staff interviews)

LIVERPOOL JOHN MOORES UNIVERSITY
CONSENT FORM

Title of Project: Psychosocial interventions for smoking cessation in substance use treatment services

Name of Researchers: Zoe Swithenbank

1. I confirm that I have read and understand the information provided for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and that this will not affect my legal rights. ☐

3. I understand that any personal information collected during the study will be anonymised and remain confidential ☐

4. I agree to take part in the above study *(if appropriate please specify the type of study or particular intervention you are seeking consent for – eg focus group, interview, training programme)* ☐

5. I understand that the interview will be audio recorded and I am happy to proceed

6. I understand that parts of our conversation may be used verbatim in future publications or presentations but that such quotes will be anonymised. ☐

Name of Participant   Date   Signature

Name of Researcher   Date   Signature

Name of Person taking consent   Date   Signature
(if different from researcher)

Note: When completed 1 copy for participant and 1 copy for researcher

LIVERPOOL JOHN MOORES UNIVERSITY
Participant Information Sheet For Staff

LJMU's Research Ethics Committee Approval Reference:

YOU WILL BE GIVEN A COPY OF THIS INFORMATION SHEET

Title of Study: Psychosocial interventions for smoking cessation in substance use treatment services

You are being invited to take part in a study. Before you decide it is important for you to understand why the study us being done and what participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for taking the time to read this.

1. Who will conduct the study?
Study Team
Principal Investigator: Zoe Swithenbank, PhD student
Co-investigator: Dr Gordon Hay (supervisor), Dr Lorna Porcellato (supervisor) and Dr Paula Watson (supervisor)

School/Faculty within LJMU: Public Health Institute

2. What is the purpose of the study?
This study aims to explore staff attitudes, barriers and perspectives on smoking cessation interventions and current practice in substance use treatment services..

3. Why have I been invited to participate?

You have been invited because you work at a substance use treatment service. For this part of the study, 12 people will be taking part.

The exclusion / inclusion criteria are: you must be over 18, comfortable conversing in English and you must currently be working at a substance use treatment service.

4. Do I have to take part?
No. It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. You can withdraw at any time by informing the investigators without giving a reason and without it affecting your rights.

5. What will happen to me if I take part?

I will talk you through the study procedures and give you the chance to ask any questions. I will return in one week to answer any additional questions you may have, and to ask you to complete a consent form should you agree to take part.
Next, I will schedule an appointment with you, here at the service. We will conduct an interview which will last approximately one hour. You will be free to decline to answer any

questions, take a break or end the interview at any time. I will be asking you questions around your current knowledge and practice regarding smoking cessation. We will also talk about potential barriers to offering or accessing support, and any suggestions you might have.

6.   **Will I be recorded and how will the recorded media be used?**

The audio recording is essential to your participation but you should be comfortable with the recording process and you are free to stop the recording at any time

The audio recordings of your activities made during this study will be used only for analysis. No other use will be made of them without your written permission.

Interviews will be audio recorded on a password protected audio recording device and as soon as possible the recording will be transferred to secure storage and deleted from the recording device.

7.   **Are there any possible disadvantages or risks from taking part?**

I do not anticipate the interviews causing any distress, however, you have the right to withdraw at any time, or to skip any questions which you would prefer not to answer. We can stop for a break at any time if you would like to. Talk to your manager if you have any concerns.

If you would like further information or advice about smoking cessation then you may want to access The National Centre for Smoking Cessation and Training (NCSCT) or local smoking cessation services. https://www.ncsct.co.uk/

8.   **What are the possible benefits of taking part?**

There are no direct benefits to taking part, but the study hopes to use your views in order to influence future service provisions which will benefit future staff and clients.

9.   **What will happen to the data provided and how will my taking part in this project be kept confidential?**
The information you provide as part of the study is the **study data**. Any study data from which you can be identified (e.g. from identifiers such as your name, date of birth, audio recording etc.), is known as **personal data**. This includes more sensitive categories of personal data (**sensitive data**) such as your race; ethnic origin; politics; religion; trade union membership; genetics; biometrics (where used for ID purposes); health; sex life; or sexual orientation.

When you agree to take part in a study, we will use your personal data in the ways needed to conduct and analyse the study and if necessary, to verify and defend, when required, the process and outcomes of the study. Personal data will be accessible to the study team only. In addition, responsible members of Liverpool John Moores University may be given access to personal data for monitoring and/or audit of the study to ensure that the study is complying with applicable regulations.

When we do not need to use personal data, it will be deleted or identifiers will be removed. Personal data does not include data that cannot be identified to an individual (e.g. data collected anonymously or where identifiers have been removed). However, your consent form, contact details, audio recordings etc. will be retained for 10 years.

Personal data collected from you will be recorded using a linked code – the link from the code to your identity will be stored securely and separately from the coded data

You will not be identifiable in any ensuing reports or publications.

We will use pseudonyms in transcripts and reports to help protect the identity of individuals and organisations unless you tell us that you would like to be attributed to information/direct quotes etc.

10. **Limits to confidentiality**

In certain exceptional circumstances where you or others may be at significant risk of harm, the investigator may need to report this to an appropriate authority. This would usually be discussed with you first. Examples of those exceptional circumstances when confidential information may have to be disclosed are:
   - The investigator believes you are at serious risk of harm, either from yourself or others
   - The investigator suspects a child may be at risk of harm
   - You pose a serious risk of harm to, or threaten or abuse others
   - As a statutory requirement e.g. reporting certain infectious diseases
   - Under a court order requiring the University to divulge information
   - We are passed information relating to an act of terrorism

11. **What will happen to the results of the study?**

The investigator intends to publish the results in a PhD thesis and journal article, and they may be presented at conferences.

12. **Who is organising and funding the study?**

This study is organised by Liverpool John Moores University and funded by the Society for the Study of Addiction.

13. **Who has reviewed this study?**

This study has been reviewed by, and received ethics clearance through, the Liverpool John Moores University Research Ethics Committee (Reference number: 19/PHI/037).

14. **What if something goes wrong?**

If you have a concern about any aspect of this study, please contact the relevant investigator who will do their best to answer your query. The investigator should acknowledge your concern within 10 working days and give you an indication of how they intend to deal with it. If you wish

to make a complaint, please contact the chair of the Liverpool John Moores University Research Ethics Committee (researchethics@ljmu.ac.uk) and your communication will be re-directed to an independent person as appropriate.

15. Data Protection Notice

Liverpool John Moores University is the sponsor for this study based in the United Kingdom. We will be using information from you in order to undertake this study and will act as the data controller for this study. This means that we are responsible for looking after your information and using it properly. Liverpool John Moores University will process your personal data for the purpose of research. Research is a task that we perform in the public interest. Liverpool John Moores University will keep identifiable information about you for 10 years after the study has finished.

Your rights to access, change or move your information are limited, as we need to manage your information in specific ways in order for the study to be reliable and accurate. If you withdraw from the study, we will keep the information about you that we have already obtained. To safeguard your rights, we will use the minimum personally-identifiable information possible.

You can find out more about how we use your information by contacting secretariat@ljmu.ac.uk.

If you are concerned about how your personal data is being processed, please contact LJMU in the first instance at secretariat@ljmu.ac.uk. If you remain unsatisfied, you may wish to contact the Information Commissioner's Office (ICO). Contact details, and details of data subject rights, are available on the ICO website at: https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/individuals-rights/

16. Contact for further information

Zoe Swithenbank
z.a.swithenbank@2019.ljmu.ac.uk
Public Health Institute
Liverpool John Moores University
3rd Floor, Exchange Station
Liverpool
L2 2QP
0151 231 4542

Thank you for reading this information sheet and for considering to take part in this study.

Note: A copy of the participant information sheet should be retained by the participant with a copy of the signed consent form.

Appendix C   Participant Information (Client)

Title of Project: Psychosocial interventions for smoking cessation in substance use treatment services

Name of Researchers: Zoe Swithenbank

Please tick to confirm your understanding of the study and that you are happy for your organisation to take part and your facilities to be used to host parts of the project.

This part of the study will involve clients taking part in one on one interviews about smoking cessation.

1. I confirm that I have read and understand the information provided for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2. I understand that participation of our organisation and clients in the research is voluntary and that they are free to withdraw at any time, without giving a reason and that this will not affect legal rights.

3. I understand that any personal information collected during the study will be anonymised and remain confidential.

4. I agree for our organisation and clients to take part in the above study.

5. I agree to conform to the data protection act

Name of Gatekeeper: Date: Signature:

Name of Researcher: Date: Signature:

Name of Person taking consent: Date: Signature:
(if different from researcher)

Title of Project: Psychosocial interventions for smoking cessation in substance use treatment services

Name of researcher: Zoe Swithenbank, Public Health Institute PhD student

1.   **What is the reason for this letter?**

   I am writing to request consent to carry out a research project as part of my PhD in Public Health which will explore behavioural intervention for smoking cessation for adults in substance use treatment.

2.   **What is the purpose of the study/rationale for the project?**

   The PhD aims to develop, implement and evaluate a group-based smoking cessation intervention for adults in treatment for substance use. Smoking rates are significantly higher in this population, and this research aims to explore the reasons for this, and ways to address this issue. This part of the study aims to explore client attitudes, barriers and perspectives on smoking cessation interventions and their experiences.

3.   **What we are asking you to do?**

   In order to carry out this research study I need your consent to access the service and to invite staff to identify clients to participate in interviews with myself. These will take place at a mutually convenient time (but during staffed hours), at the service itself. Access to a counselling room or similar would be necessary.

4.   **Why do we need access to your clients?**

   This study will only include participants who are currently accessing substance misuse treatment services. Therefore it is necessary to access a treatment service.

5.   **If you are willing to assist in the study what happens next?**

   If you are willing to assist in the study, I will arrange a time that is mutually convenient for me to come to the service and to explain the study to the staff, who will be asked to identify any suitable clients. A brief presentation will be given to any interested clients, and participant information forms will be distributed and any questions answered. After a week I will return to the service to ask any willing participants to complete consent forms and to discuss arrangements for the interviews.

6.   **How we will use the Information?**

All information collected during the study will be kept confidential. I will transcribe interview tapes myself and these will be kept secure at all times. Any paper notes will be kept secure. Names and any identifying information will be anonymised during the transcription process. Once typed all information will be kept on a password protected computer that will be accessed only by myself.

7.   Will the name of my organisation taking part in the study be kept confidential?

The name of the organisation will be kept confidential at all times. Any reference to it during the interviews will be removed or anonymised during the transcription process.

8.   What will taking part involve? What should I do now?

Sign and return the Gatekeeper Consent Form provided.

Should you have any comments or questions regarding this research, you may contact the researchers:
Zoe Swithenbank, *z.a.swithenbank@2019.ljmu.ac.uk, (Mobile number to be updated)*

This study has received ethical approval from LJMU's Research Ethics Committee *(insert REC reference number and date of approval)*

Contact Details of Researcher *Zoe Swithenbank,   z.a.swithenbank@2019.ljmu.ac.uk, 0151 231 5829*
Contact Details of Academic Supervisor: *Dr Gordon Hay, g.hay@ljmu.ac.uk, 0151 231 4385*

If you have any concerns regarding your involvement in this research, please discuss these with the researcher in the first instance. If you wish to make a complaint, please contact researchethics@ljmu.ac.uk and your communication will be re-directed to an independent person as appropriate.

Study 2 (client interviews)

LIVERPOOL JOHN MOORES UNIVERSITY
CONSENT FORM

Title of Project: Psychosocial interventions for smoking cessation in substance use treatment services

Name of Researchers: Zoe Swithenbank

1. I confirm that I have read and understand the information provided for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and that this will not affect my legal rights.

3. I understand that any personal information collected during the study will be anonymised and remain confidential

4. I agree to take part in the above study *(if appropriate please specify the type of study or particular intervention you are seeking consent for – eg focus group, interview, training programme)*

5. I understand that the interview will be audio recorded and I am happy to proceed

6. I understand that parts of our conversation may be used verbatim in future publications or presentations but that such quotes will be anonymised.

Name of Participant   Date   Signature

Name of Researcher   Date   Signature

Name of Person taking consent   Date   Signature
(if different from researcher)

Note: When completed 1 copy for participant and 1 copy for researcher

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LIVERPOOL JOHN MOORES UNIVERSITY
Participant Information Sheet For Clients

LJMU's Research Ethics Committee Approval Reference:

YOU WILL BE GIVEN A COPY OF THIS INFORMATION SHEET

Title of Study: Psychosocial interventions for smoking cessation in substance use treatment services

You are being invited to take part in a study. Before you decide it is important for you to understand why the study us being done and what participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for taking the time to read this.

1. **Who will conduct the study?**

Study Team
Principal Investigator: Zoe Swithenbank, PhD student
Co-investigator: Dr Gordon Hay (supervisor), Dr Lorna Porcellato (supervisor) and Dr Paula Watson (supervisor)

School/Faculty within LJMU: Public Health Institute

2. **What is the purpose of the study?**
    This study aims to explore client attitudes, barriers and perspectives on smoking cessation interventions and any experiences of smoking or cessation support in substance use treatment services.

3. **Why have I been invited to participate?**

You have been invited because your keyworker or another staff member suggested that you might be interested in taking part. For this part of the study, 10 people will be taking part.

The exclusion / inclusion criteria are: you must be over 18; you must be a smoker; you must currently be a client of this service; you must be comfortable being interviewed in English.

4. **Do I have to take part?**
    No. It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. You can withdraw at any time by informing the investigators without giving a reason and without it affecting your rights/any future treatment/service you receive.

5. **What will happen to me if I take part?**

We will talk you through what we would like you to do, and give you the chance to ask any questions. I will return in one week to answer any additional questions you may have, and to ask you to complete a consent form should you agree to take part.

Next, I will arrange an appointment with you, here at the service, at a time that suits you. We will conduct an interview which will last approximately one hour. You will be free to decline to answer any questions, take a break or end the interview at any time. I will be asking you questions around your smoking history, current smoking habits and any treatment or support you have received about quitting smoking. We will also talk about potential barriers to accessing support, and any suggestions you might have about what would work for you.

6. Will I be recorded and how will the recorded media be used?

The audio recording is essential to your participation but you should be comfortable with the recording process and you are free to stop the recording at any time

The audio recordings of your activities made during this study will be used only for analysis. No other use will be made of them without your written permission.

Interviews will be audio recorded on a password protected audio recording device and as soon as possible the recording will be transferred to secure storage and deleted from the recording device.

7. Are there any possible disadvantages or risks from taking part?

I do not anticipate the interviews causing any distress, however, you have the right to withdraw at any time, or to skip any questions which you would prefer not to answer. We can stop for a break at any time if you would like to. Talk to your keyworker or any member of staff if you have any concerns.

If you are personally affected by participation in this study, you may wish to seek support/advice from your keyworker.

8. What are the possible benefits of taking part?

It is hoped that at least some people will quit or reduce their smoking, and the study hopes to use your views in order to influence future service provisions which will benefit future clients.

9. What will happen to the data provided and how will my taking part in this project be kept confidential?

The information you provide as part of the study is the **study data**. Any study data from which you can be identified (e.g. from identifiers such as your name, date of birth, audio recording etc.), is known as **personal data**. This includes more sensitive categories of personal data (**sensitive data**) such as your race; ethnic origin; politics; religion; trade union membership; genetics; biometrics (where used for ID purposes); health; sex life; or sexual orientation.

When you agree to take part in a study, we will use your personal data in the ways needed to conduct and analyse the study and if necessary, to verify and defend, when required, the process and outcomes of the study. Personal data will be accessible to the study team only. In addition, responsible members of Liverpool John Moores University may be given access to personal data for monitoring and/or audit of the study to ensure that the study is complying with applicable regulations.

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   o   The investigator believes you are at serious risk of harm, either from yourself or others
   o   The investigator suspects a child may be at risk of harm
   o   You pose a serious risk of harm to, or threaten or abuse others
   o   As a statutory requirement e.g. reporting certain infectious diseases
   o   Under a court order requiring the University to divulge information
   o   We are passed information relating to an act of terrorism

11. **What will happen to the results of the study?**

The investigator intends to publish the results in a PhD thesis and journal article, and they may be presented at conferences.

12. **Who is organising and funding the study?**

This study is organised by Liverpool John Moores University and funded by the Society for the Study of Addiction.

13. **Who has reviewed this study?**

This study has been reviewed by, and received ethics clearance through, the Liverpool John Moores University Research Ethics Committee (Reference number: 19/PHI/037).

14. **What if something goes wrong?**

If you have a concern about any aspect of this study, please contact the relevant investigator who will do their best to answer your query. The investigator should acknowledge your concern within 10 working days and give you an indication of how they intend to deal with it. If you wish to make a complaint, please contact the chair of the Liverpool John Moores University Research Ethics

Committee (researchethics@ljmu.ac.uk) and your communication will be re-directed to an independent person as appropriate.

15. Data Protection Notice

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Your rights to access, change or move your information are limited, as we need to manage your information in specific ways in order for the study to be reliable and accurate. If you withdraw from the study, we will keep the information about you that we have already obtained. To safeguard your rights, we will use the minimum personally-identifiable information possible.

You can find out more about how we use your information by contacting secretariat@ljmu.ac.uk.

If you are concerned about how your personal data is being processed, please contact LJMU in the first instance at secretariat@ljmu.ac.uk. If you remain unsatisfied, you may wish to contact the Information Commissioner's Office (ICO). Contact details, and details of data subject rights, are available on the ICO website at: https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/individuals-rights/

16. Contact for further information

Zoe Swithenbank
z.a.swithenbank@2019.ljmu.ac.uk
Public Health Institute
Liverpool John Moores University
3rd Floor, Exchange Station
Liverpool
L2 2QP
0151 231 4542

Thank you for reading this information sheet and for considering to take part in this study.

Note: A copy of the participant information sheet should be retained by the participant with a copy of the signed consent form.

Appendix D   Interview Schedule

Semi structured interview questions for pre-intervention interviews (staff and clients, 12 of each)

Purpose: To gain perspectives and ideas about the design, feasibility and potential barriers to the intervention.

Staff:

What are your experiences of smoking cessation or support in the service?

Can you tell me about any personal or work related experiences of smoking or smoking cessation?

Clients:

What are your experiences of smoking cessation or support in the service?

Can you tell me about any personal experiences of smoking or smoking cessation?

All:

How do you feel about smoking in treatment services, and what do you feel should be the role of the service?

What barriers might prevent staff from asking / offering advice?

What barriers might prevent clients from asking for / taking advice on smoking cessation?

What might facilitate discussions or action on SC?

What would prevent / facilitate a group-based intervention run here in the service?

If you were to run an intervention, please think about the following questions:

- Who should deliver it?
- What type of intervention – group-based, self-help support, combined?
- If a group, how big should it be?
- What should the mode of delivery be– face to face, online?
- How long should each session be? How frequent, and how many?
- Where and when should it be held?
- Who should be included in the group / intervention?
- How should outcome measures be reported? Self reported via a diary, recorded weekly in the session, biochemical?
- What types of interventions have you taken part in before? Are there any aspects of those you think worked well, or might be useful here? Anything you didn't like or that didn't work?

Is there anything else you think is important or would like to add?

Appendix E   Screenshots of NVivo themes (client interviews)

Appendix F   Screenshots of NVivo themes (staff interviews)

Appendix G: ICSmoke Search and Screening Process

Overview of literature search

The Cochrane Tobacco Addiction Review Group Specialized Register (CTAGSR) (via the Cochrane Register of Studies Online (CRSO) was searched for studies published from 1996 onwards (see http://onlinelibrary.wiley.com/o/cochrane/clabout/articles/TOBACCO/frame.html). This register is developed through continued and regular electronic searching of MEDLINE, EMBASE, and PsycINFO, together with hand searching of specialist journals, conference proceedings, and reference lists of previous trials and overviews. The CTAGSR is indexed on whether or not studies were included in existing Cochrane reviews. The current reviews' inclusion criteria for study design, population, and outcome were partly based on those used by the Cochrane tobacco addiction group.

Inclusion criteria

- RCTs with a minimum follow-up period of 6 months
- Interventions directed at adult smokers (defined as those over 18)
- Trials describing (1) behaviour change interventions with or without pharmacotherapy compared to (a) different behaviour change interventions with or without pharmacotherapy, (b) treatment-as-usual with or without pharmacotherapy, (c) pharmacotherapy alone, or (d) no treatment.
- Biochemically verified smoking cessation rates (primary outcome) reported at least 6 months after the start of the intervention.
- Trials published in peer-reviewed journals from 1996 onward.
- Trials published in English.
- Trials with the primary aim to change smoking behaviour (i.e., papers focusing on interventions aimed at changing multiple health behaviours simultaneously (e.g., diet, exercise and smoking) will be excluded)

Trials describing behaviour change interventions, defined as '(a set of) materials and/or activities designed to change behaviour through social and psychological processes', were included in the review. Only trials published in the last 20 years were considered for inclusion for two reasons. First, more recent trials will be more relevant to current practice. Second, it was judged to be unlikely we could retrieve accurate information about intervention and comparison groups for trials published longer ago. Only trials published in English were included, because no resources are available for the translation of intervention and comparison group protocols/materials, or the trial paper. Only trials

with a primary aim to change smoking behaviour will be included, because it was considered impossible to tease apart the effects of BCTs to change different health behaviour from effects of BCTs aimed at changing smoking behaviour.

A total of 284 potentially eligible trials were identified. Because this number exceeded the number of trials we originally aimed to include (i.e., 150-200) we decided to include only papers reporting biochemically verified smoking cessation rates at six months follow-up. Additionally, all papers included by one screener (i.e., eligible) were assigned to at least one other screener in the data extraction phase, who will then confirm if study inclusion was justified. Thus, all included papers will have been included by two screeners, minimizing the risk of including ineligible trials. One-hundred thirty-nine papers were excluded because they did not report biochemically verified smoking cessation rates (107) or were excluded for other reasons in the data-extraction phase (34). The final number of eligible studies was 143.
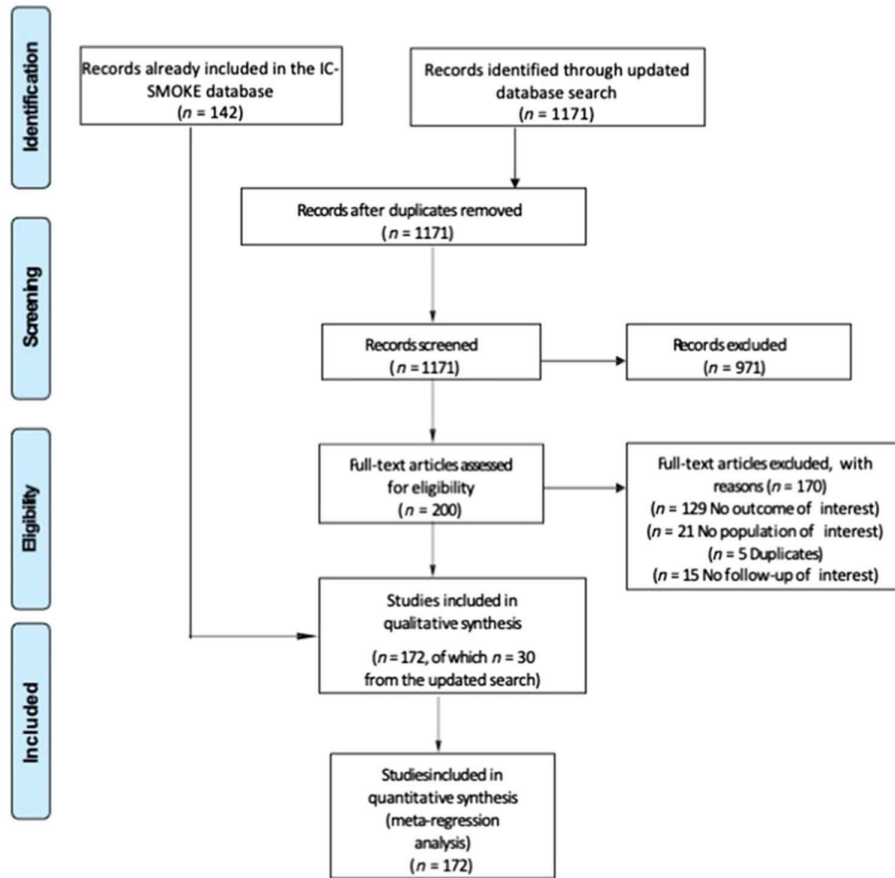
Updates

In 2018, the ICSmoke database was updated by using the same methods as described above, by searching for trials published since 1/11/2015 (date of last search) in the Cochrane Tobacco Addiction Group Specialized Register (CTAGSR). This update was referred to as ICSmoke2, and the original dataset was since referred to as ICSmoke1.

In October 2021, the search was run again to identify studies published after 2018. The Cochrane register yielded 3946 results, which were screened by two researchers to identify the relevant trials for inclusion. As with ICSmoke2, the protocol for ICSmoke1 was followed to ensure the reliability and validity of the data.

The existing database was not updated, despite an updated search being conducted. None of the studies identified after the initial screening included or focused on people with substance use issues, so it was decided to halt the process at this point. Additional studies would have added to the non SU dataset, but not the SU set. Given the limited benefits of this, and the challenges of gathering the comprehensive data to maintain the high standards of the existing dataset, it was not practical to continue. In order to meet the requirements of the review, authors would need to be contacted to gather additional information including the TAU questionnaire, additional study materials. This is time consuming and challenging, even the ICSmoke study struggled to reach authors with a full team of well-respected researchers in the field, so the chances of this update getting adequate responses was small. As such, the database collected during the ICSmoke 2 phase was used for all data analysis.

Table A1: PRISMA flow chart for ICSmoke2

Identification

Records already included in the IC-SMOKE database
($n = 142$)

Records identified through updated database search
($n = 1171$)

Screening

Records after duplicates removed
($n = 1171$)

Records screened
($n = 1171$)

Records excluded
($n = 971$)

Eligibility

Full-text articles assessed for eligibility
($n = 200$)

Full-text articles excluded, with reasons ($n = 170$)
($n = 129$ No outcome of interest)
($n = 21$ No population of interest)
($n = 5$ Duplicates)
($n = 15$ No follow-up of interest)

Included

Studies included in qualitative synthesis
($n = 172$, of which $n = 30$ from the updated search)

Studies included in quantitative synthesis (meta-regression analysis)
($n = 172$)

Additional data collection

For all intervention and comparator groups, we sought to gain detailed information describing the active content delivered, beyond the information provided in the primary articles. This involved a systematic procedure of first retrieving publicly available materials (e.g., intervention development papers, protocols, supplemental materials, self-help materials) and then contacting authors of all trials to request additional privately held materials (e.g., practitioner manuals, training manuals, checklists). To retrieve these privately held materials, first/corresponding authors were contacted by email (including two reminders); if no response was received, we contacted them by telephone, and if unsuccessful the second and last authors were contacted by email, followed by middle authors where necessary.

Variables extracted.

The usual variables including outcome data, risk of bias, sample characteristics, recruitment and attrition data and study characteristics were extracted. Additionally, the following were extracted/coded:

- Active content of intervention/comparator group support:
- delivery of pharmacological support,
- use of behaviour change techniques (BCTs),
- the targeted behaviour of the BCTs (quitting smoking, remaining abstinent, adhering to medication, engaging with treatment),
- tailoring of the BCTs (tailored vs. not tailored to the recipient),
- active participation with the BCTs (recipient actively participated with the delivery of the BCTs vs recipient was passive in the delivery of the BCTs)
- Quality of intervention/comparator support descriptions: the degree to which all active ingredients of the interventions were described in the available materials (3 = well-described, 2 =moderately described, 1 = poorly described, 0 = not described).
- Additional intervention/ comparator support characteristics including primary mode of delivery, number of sessions, duration (minutes) of intervention exposure, provider, setting

Appendix H: ICSmoke Systematic Review Papers

1. Abrantes AM, Bloom EL, Strong DR, et al. A preliminary randomized controlled trial of a behavioral exercise intervention for smoking cessation. *Nicotine Tob Res.* 2014;16(8):1094-1103.

2. Abroms LC, Boal AL, Simmens SJ, Mendel JA, Windsor RA. A randomized trial of Text2Quit: A text messaging program for smoking cessation. *Am J Prev Med.* 2014;47(3):242-250.

3. Abroms LC, Windsor R, Simons-Morton B. Getting young adults to quit smoking: A formative evaluation of the X-Pack Program. *Nicotine Tob Res.* 2008;10(1):27-33.

4. Ahluwalia JS, Okuyemi K, Nollen N, et al. The effects of nicotine gum and counseling among African American light smokers: A 2× 2 factorial design. *Addiction.* 2006;101(6):883-891.

5. Alessi SM, Petry NM. Smoking reductions and increased self-efficacy in a randomized controlled trial of smoking abstinence–contingent incentives in residential substance abuse treatment patients. *Nicotine Tob Res.* 2014;16(11):1436-1445.

6. Allen Jr B, Pederson LL, Leonard EH. Effectiveness of physicians-in-training counseling for smoking cessation in African Americans. *J Natl Med Assoc.* 1998;90(10):597-604.

7. Ames SC, Patten CA, Werch CE, et al. Expressive writing as a smoking cessation treatment adjunct for young adult smokers. *Nicotine Tob Res.* 2007;9(2):185-194.

8. Ames SC, Pokorny SB, Schroeder DR, Tan W, Werch CE. Integrated smoking cessation and binge drinking intervention for young adults: A pilot efficacy trial. *Addict Behav.* 2014;39(5):848-853.

9. An LC, Klatt C, Perry CL, et al. The RealU online cessation intervention for college smokers: A randomized controlled trial. *Prev Med.* 2008;47(2):194-199.

10. Aveyard P, Brown K, Saunders C, et al. Weekly versus basic smoking cessation support in primary care: A randomised controlled trial. *Thorax.* 2007;62(10):898-903.

11. Baker A, Richmond R, Haile M, et al. A randomized controlled trial of a smoking cessation intervention among people with a psychotic disorder. *Am J Psychiatry.* 2006;163(11):1934-1942.

12. Bakkevig O, Steine S, Hafenbrädl Kv, Lærum E. Smoking cessation: A comparative, randomised study between management in general practice and the behavioural programme SmokEnders. *Scand J Prim Health Care.* 2000;18(4):247-251.

13. Becoña E, Vázquez FL. Effectiveness of personalized written feedback through a mail intervention for smoking cessation: A randomized-controlled trial in Spanish smokers. *J Consult Clin Psychol.* 2001;69(1):33-40.

14. Bize R, Willi C, Chiolero A, et al. Participation in a population-based physical activity programme as an aid for smoking cessation: A randomised trial. *Tob Control.* 2010;19(6):488-494.

15. Blebil AQ, Sulaiman SAS, Hassali MA, Dujaili JA, Zin AM. Impact of additional counselling sessions through phone calls on smoking cessation outcomes among smokers in Penang State, Malaysia. *BMC Public Health.* 2014;14(1):460-468.

16. Bobo JK, Mcilvain HE, Lando HA, Walker RD, Leed-Kelly A. Effect of smoking cessation counseling on recovery from alcoholism: Findings from a randomized community intervention trial. *Addiction.* 1998;93(6):877-887.

17. Bock BC, Fava JL, Gaskins R, et al. Yoga as a complementary treatment for smoking cessation in women. *J Womens Health.* 2012;21(2):240-248.

18. Bock BC, Papandonatos GD, De Dios MA, et al. Tobacco cessation among low-income smokers:

Motivational enhancement and nicotine patch treatment. *Nicotine Tob Res.* 2014;16(4):413-422.

19.   Borrelli B, Novak S, Hecht J, Emmons K, Papandonatos G, Abrams D. Home health care nurses as a new channel for smoking cessation treatment: Outcomes from project CARES (Community-nurse Assisted Research and Education on Smoking). *Prev Med.* 2005;41(5-6):815-821.

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