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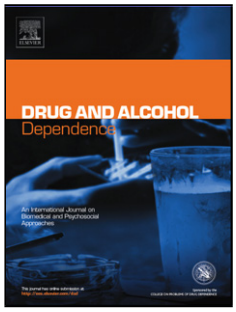

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Smoking cessation for substance misusers: a systematic review of qualitative studies on participant and provider beliefs and perceptions

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Systematic review registered with PROSPERO http://www.crd.york.ac.uk/PROSPERO/display_record.asp?ID=CRD42015024412

HIGHLIGHTS

- Many substance misusers who also smoke are motivated to quit but lack support.
- Professionals require training and resources to support smoking cessation.
- Provision of smoking cessation support when smoking bans are in place is key.

- Development of interventions targeting the unique needs of this group is needed.

ABSTRACT

Introduction: Smoking prevalence among those in substance misuse treatment remains much higher than the general population, despite evidence for effective cessation interventions that do not negatively impact substance misuse outcomes. This systematic review summarises qualitative data on barriers and facilitators to smoking cessation for people in substance misuse treatment, participants' and providers' perceptions about effects of smoking cessation on substance misuse treatment, timing of intervention delivery and aspects of interventions perceived to be effective.

Methods: Systematic review of qualitative studies and thematic synthesis of published qualitative data.

Results: 10939 records and 132 full texts were screened. 22 papers reporting on 21 studies were included. Key themes identified were: strong relationships between smoking and other substance misuse; environmental influences; motivation; mental health; aspects of interventions perceived to be effective/ineffective; barriers and facilitators to intervention implementation; smoking bans/restrictions; and relationships with professionals. Many service users were motivated toward smoking cessation but were not offered support. Some felt interventions should be delivered after substance misuse treatment, whilst others felt concurrent/dual interventions would be beneficial, due to strong associations between smoking and other substances. Treatment

providers felt they lacked training and resources for supporting smoking cessation, and were concerned about impact on substance misuse outcomes.

Conclusions: Many substance misusers who also smoke are motivated to quit but perceive a lack of support from professionals. Additional training and resources are required to enable professionals to provide the support needed. More research is required to develop enhanced packages of care for this deprived group of smokers.

Key words: Smoking cessation; substance misuse; systematic review; qualitative

1. INTRODUCTION

Smoking prevalence amongst those in substance misuse treatment is much higher than the general population. In the United Kingdom (UK), United States of America (USA), Australia, Canada and Switzerland, estimates of smoking prevalence in this group range from 77% to 98% (1-10), whilst smoking prevalence in the general population is estimated at 15.5% in England in 2016 (11), 15.1% in the USA in 2015 (12), 17.7% in Canada in 2015 (13) and 14.7% in Australia 2014-15 (14). According to a 2014 survey of people in residential addiction services in London, UK, among the 88% of respondents who were current smokers, 79% expressed a desire to quit but 56% had never been offered support for smoking cessation and only 15% had been offered support during their current treatment episode (10).

Smoking causes considerable morbidity and mortality among substance misusers. Hser et al. (6) found that the death rate among substance misusers who concurrently smoked was four times higher than non-smoker substance misusers. Hurt et al. (15) found that in a population who had received inpatient treatment for substance misuse, tobacco-related diseases were the leading cause of death. There are a wide variety of smoking cessation methods (16-18) but no specific National Institute for Health and Care Excellence (NICE) guidance on smoking cessation for people in substance misuse treatment/recovery (19-21) and no obvious theoretical framework upon which to base intervention development.

A meta-analysis of 19 randomised controlled trials (RCTs) of smoking cessation interventions for people in substance misuse treatment/recovery found interventions were effective in the short term and associated with a 25% increased likelihood of long term abstinence of other substance misuse, although evidence of intervention effectiveness for smoking cessation in the long term was limited (22). A more recent systematic review of 17 studies found some evidence for the effectiveness of nicotine replacement therapy (NRT), behavioural support and combination approaches, and some evidence of improved substance misuse outcomes (18).

A previous systematic review of qualitative and quantitative (i.e. longitudinal, cross-sectional or cohort surveys) studies has been conducted, with wide inclusion criteria, assessing barriers to smoking cessation across vulnerable groups (23). This previous review included just one qualitative study of substance misusers who were homeless. The review identified common barriers among this group of substance misusers, and the other vulnerable groups studied. Barriers included smoking for stress management, lack of support from service providers and high prevalence and acceptability of smoking. Similarly, a previous mixed-methods systematic review of mental health professionals' attitudes towards smoking cessation among their clients has been conducted (24). Although this review included those working with substance misusers, results for this group were not separately analysed.

This systematic review aims to extend and enhance the findings of existing reviews (18, 22-25) by providing a context for interpreting and explaining the results of the quantitative syntheses on barriers and facilitators for smoking cessation, in the specific

context of substance misuse services. A qualitative synthesis aims to go beyond small, context specific studies to attempt to draw broader, more transferable lessons from the data.

The protocol was registered and published in PROSPERO (26). Review questions were:

- What are the reported barriers and facilitators to smoking cessation/reduction and relapse prevention for people in substance misuse treatment/recovery?
- Do people in substance misuse treatment/recovery or their treatment providers perceive smoking cessation/reduction interventions as having an impact on substance misuse treatment/recovery and how?
- When do people in substance misuse treatment/recovery and their treatment providers perceive to be the right time for a smoking cessation/reduction intervention?
- What aspects of smoking cessation/reduction interventions for those in substance misuse treatment/recovery are perceived to be effective/ineffective and why?

2. MATERIALS AND METHODS

2.1 Inclusion criteria

2.1.1 Participants

People in substance misuse treatment or recovery (‘service users’), and those involved in providing their substance misuse treatment (‘treatment providers’), in any country or setting, of any age were included. We included all forms of substance

misuse, including illegal or prescribed drugs, legal highs and alcohol. 'In treatment' included participants enrolled in inpatient or outpatient treatment programmes. Participants were considered 'in recovery' if they met the UK Drugs Policy Definition of 'voluntarily sustained control over substance use which maximises health and wellbeing and participation in the rights, roles and responsibilities of society' (27).

2.1.2 Interventions

We included studies investigating the effectiveness of smoking cessation/reduction interventions where a qualitative evaluation was performed. Non-interventional studies evaluating smoking cessation/reduction initiatives for substance misusers, including implementation of smoking bans/restrictions, were included. This was considered important as those in treatment or recovery from substance misuse are more likely to spend time subject to smoking bans/restrictions than the general population, e.g. whilst an inpatient in a treatment centre with a smoking ban, and so this has the potential to be a significant barrier or facilitator to smoking cessation for this group. We included studies seeking views on smoking cessation of those in substance misuse treatment/recovery and treatment providers.

2.1.3 Outcomes

We included studies reporting on at least one of the following outcomes:

• Participants' and treatment providers' perceptions about barriers and facilitators to successful smoking cessation/reduction and/or relapse prevention;

• Participants' and providers' views about whether smoking cessation/reduction interventions impact ongoing treatment/recovery from other substance misuse;

• Participants' and providers' views about if/when smoking cessation/reduction is appropriate;

• Participants' perceptions about effective/ineffective aspects of smoking cessation/reduction interventions.

2.1.4 Types of study

Qualitative study designs with any recognised method of data collection (e.g. focus groups) and analysis from any discipline or theoretical tradition (e.g. phenomenological analysis). We included qualitative data reported in interventional and mixed methods studies if it was clearly written in the title/abstract that qualitative data were sought.

2.2 Search strategy

Following searches from similar systematic reviews (18, 23, 25) a draft search strategy was developed in MEDLINE using a combination of MeSH and free text terms. We did not specify study types due to poor indexing of qualitative studies (28). This strategy was then tested against a previously identified sample of relevant papers. Once finalised the search strategy was adapted for other databases. The following databases were searched:

• MEDLINE (via Ovid SP)

• EMBASE (via Ovid SP)

• Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library)

• PsychINFO (via EBSCOhost)

• Cumulative Index to Nursing and Allied Health Literature (CINAHL) (via EBSCOhost)

• Applied Social Sciences Index and Abstracts (ASSIA)

• ProQuest Dissertation and Theses Database

• Web of Science

We searched from database inception to August 2016. We screened reference lists of included studies and systematic reviews identified by our electronic searches. Only studies published in English were included. See Box 1 for MEDLINE search strategy.

2.3 Study selection

Search results were merged across databases using Endnote and duplicates removed. Titles and abstracts were assessed for eligibility by one author according to pre-specified inclusion criteria with 10% of excluded studies double screened by a second reviewer. In all cases, the second reviewer concurred. Full texts of studies potentially meeting our inclusion criteria were retrieved and assessed for eligibility by two independent reviewers. Of 132 full text articles assessed, reviewers disagreed on seven. Disagreements were resolved by discussion with a third reviewer.

2.4 Assessment of study quality

Study quality was assessed using the Critical Appraisal Skills Programme (CASP) Qualitative Research Checklist (29) by one author and checked for accuracy by a

second. An aggregate score was calculated for each included study by giving 1 point if a criterion was met, 0.5 if partially met, and 0 if not met.

2.5 Data extraction

Data were extracted using a standardised data extraction sheet by one author and checked for accuracy by a second. Data extracted included: aims; inclusion/exclusion criteria; recruitment method; participant characteristics, including details of substance misuse and smoking history where available; data collection method; analysis methods; study limitations; and summary of study findings.

2.6 Qualitative synthesis

A thematic content analysis of reported qualitative data was undertaken (30, 31). Data were entered into NVivo version 10 to assist with coding. Published qualitative data were coded by one reviewer, with a second undertaking independent coding of five of the included studies. ‘First-level’ codes aimed to summarise the meaning of the text or capture the authors’ original language. Coding was identified as quoted original data or author interpretation. Data from service users and treatment providers were coded and analysed together, but coding identified whether or not the data were from service users or treatment providers. Synthesis involved organisation of first level codes into second level descriptive themes, summarising first level codes whilst remaining close to the included studies. Third level analytical themes were then developed. This stage involved ‘going beyond’ or ‘interpreting’ the first and second level codes to capture the line of argument (32) and generate new findings from pooled data.

Synthesis worked inductively with the data revealing themes broader than the research questions as published in the protocol and described above. To ensure we identify relevant data beyond the research questions and do not miss anything that might be critical such additional themes were included in the synthesis.

3. RESULTS

The screening process identified 21 studies reported in 22 papers (see Figure 1 for PRISMA flow diagram (33)). Most were carried out in the USA (n=16) (34-50), with two in Australia (51, 52) and one in each of Switzerland, Taiwan and UK (53-55). 11 studies included only service users (34, 35, 37, 40, 44-46, 50, 51, 54, 55), five only treatment providers (41, 42, 47, 48, 52), and five both (36, 38, 39, 43, 49, 53). Results of service users and treatment providers are discussed together under the relevant analytical theme, with differences in perspectives between them highlighted where they were identified. Only one study reported qualitative data on views of a smoking cessation intervention (51). The other 20 studies sought views on smoking cessation in general, rather than in the context of a specific intervention. A total of nine studies reported views of smoking bans/restrictions (39-41, 43-45, 47, 52, 54). Studies were of variable quality according to the CASP checklist, with a median combined rating of 6 out of 10 (range 2-8.5) (see Table 1).

539 first-level codes were identified, organised into 83 descriptive themes and synthesised into the eight analytical themes reported below. The coding diagram (Figure 2) illustrates frequency of reporting categories. Sample quotes were chosen as best exemplifying each theme. Analytical themes are presented beneath the relevant research question.

3.1 What are the reported barriers and facilitators to smoking cessation/reduction and relapse prevention for people in substance misuse treatment/recovery?

Five analytical themes relating to barriers and facilitators to smoking cessation/reduction were identified: environmental influences; motivation; mental health; smoking bans/restrictions; and relationships with professionals.

3.1.1 Environmental influences

The influence of other smokers, including service users, staff and relatives, was considered by service users and treatment providers to be a key barrier to cessation (38, 41, 42, 45, 51, 52, 54). Many reported a strong culture of smoking in substance misuse treatment centres, with smoking seen as 'normal' (47, 52) and an important part of daily routines (38, 40, 52):

> *"Instead of saying we're taking a 5-minute break, the counsellor would be like, 'We're taking a 10-minute smoke break.' Basically because everybody except maybe one person gets up and smokes."* Service user quote (38)

Smoking was considered a way of building relationships to both service users and treatment providers (34, 52, 55):

> *"I've been in hostels before and I've helped out the hostel by tidying the reception area or swept up outside and a member of staff will come outside for a cigarette and offer me one for helping" S*ervice user quote (55)

Equally, the influence of interested relatives and non-smokers was a facilitator to successful cessation for some service users (34, 37, 38, 45, 50, 51), but not all (44):

> *"If (your family are) non-smokers like mine are . . . they are like "Hey man, you're doing well", you know, if they see you're still not smoking. I had a lot of compliments (when I tried to quit smoking)."* Service user quote (52)

3.1.2 Motivation

A significant proportion of service users were motivated to quit (34, 37, 38, 44, 49-52, 55), motivators varied, and factors that motivated some did not motivate others (38). 'Higher priorities', including health, family, children and pregnancy were a key motivator (34, 37, 38, 40, 44, 45, 49-52, 55). Cost was a motivator for some (52), but not others (38).

Deficits in knowledge about the harms of smoking was considered a barrier to motivation for some, whilst others reported service users had knowledge but were not motivated by it (38, 41, 42, 44, 50, 55):

> *"I don't care if it is going to cause me cancer."* Service user quote (38)

Barriers to motivation included enjoyment of smoking (52) and cost of smoking cessation products (38, 52).

3.1.3 Mental Health

Fear of negative outcomes, including weight gain, insomnia and increased alcohol/drug consumption were a key barrier (38, 44, 50, 53). Negative affect (e.g. boredom, depression, anxiety, loneliness) was a perceived trigger for smoking and a

result of cessation (35, 38, 39, 44-46, 48-51). There was a perception that smoking was helpful for stress relief, particularly when there are multiple stressful life circumstances, including substance misuse (38, 44, 48, 51), homelessness (55), pregnancy (40), and social disadvantage (52).

Some service users perceived the addition of smoking cessation to treatment of other substances to increase the burden of negative affect to such an extent they felt both together was too much (44):

> *"It is very difficult to stay focused on why I am here at EH [treatment centre] when I want to smoke. I cannot deal with my feelings or express myself because I am stressed over wanting a cigarette."* Service user quote (44)

There were some reports of mental health benefits of smoking cessation, including hope for the future (51) and feelings of pride (50) and empowerment (40).

3.1.4 Smoking bans or restrictions

Smoking bans and restrictions were controversial and perceived to be a facilitator of smoking cessation by some service users and treatment providers, and a barrier by others.

Perceived advantages include: reduced smoking (39, 41, 43, 45, 50, 55), ability to provide a consistent smoking cessation message (37, 45), health improvements (39, 44), greater intention/motivation to stop smoking (39), sustained smoking cessation after discharge (44, 50), greater awareness of smoking dangers and cessation treatments (39), improved physical environment (39), opportunity to experience a tobacco and addiction-free life (41, 44), prompted review of tobacco policies (41),

improvements in smoking related behaviour problems (42), and allowed service users to focus on substance misuse treatment (39).

The importance of smoking cessation support when a ban/restriction was in place was highlighted (37, 39) and smoking bans encouraged discussions about smoking cessation (39):

> *"It has started more of a discussion with consumers about quitting whereas it wasn't addressed as much before"* Treatment provider quote (39)

Despite these advantages significant concerns were expressed, including fears service users may avoid centres with smoking restrictions or be evicted if non-compliant (39, 41, 45, 47).

Many felt smoking bans were unfair, particularly if similar organisations nearby allowed smoking (54), increased feelings of shame (39) and were potentially detrimental to recovery (36, 39, 42, 44, 45, 54):

> *"All bans have been lifted in prisons throughout Taiwan except here. This is way too unfair."* Service user quote (54)

Enforcement difficulties (39, 47, 52), reduced service user engagement (39, 47), increased irritability (39), smoking outside facilities affecting neighbours (47), danger to service users leaving grounds to smoke (47) and fire risk (39) were other disadvantages.

Planning in advance of implementation (47), supportive policy environments, such as policies requiring organisations to implement similar smoking policies locally, and

support from local policy making organisations in the provision of, and access to, smoking cessation services, were considered by treatment providers as ways of ameliorating these concerns (41, 47):

> *"My hope is that at some point the state will mandate that all licensed programs…have to be non-smoking. Because then we can all do it at the same time. Then you don't run into people avoiding your particular treatment center because they can't smoke."* Treatment provider quote, (47)

3.1.5 Relationships with professionals

Supportive staff were perceived by service users as a motivator for smoking cessation (45, 50):

> *"he speaks to you with concern…for him to catch you smoking would be like you let him down."* Service user quote (45)

Some staff felt smoking cessation was important (49, 52):

> *"if we're addressing one substance we need to address all of them. Cigarettes kill more than every other drug combined, so I'm seeing it as a necessity."* Treatment provider quote (49)

Some service users described lack of support or active discouragement from smoking cessation from professionals, despite being motivated (40, 46, 49, 50, 52, 55):

> *"When you ask a MD [physician] if you should stop smoking, and they look at*

your methadone...they act like it's a joke." Service user quote (46)

"I had said, 'You know, I'm just going to quit'. And they told me that they don't recommend that. They don't recommend you to quit smoking until you have been in recovery for a year because it just is stressful and it's overwhelming." Service user quote (40)

Some treatment providers whose focus was on treating other substance misuse felt assisting with smoking cessation was not a priority nor their role (42, 43, 47, 49, 52):

"it's really interesting to have these conversations with addiction specialists, where it's like – addiction to nicotine really is seen as something entirely different, outside the addiction world…really?...your clients who are trying to get recovery tend to use this product a lot, primarily because of their addiction to this thing called nicotine!" Treatment provider quote (47)

There were concerns from both service users and treatment providers about the effect of staff smoking on service users (42, 47, 49, 52, 54). Some treatment providers felt uncomfortable providing smoking cessation advice (42) and many were concerned about the effects of such advice, or implementing smoking bans, on the therapeutic relationship (39). Some used smoking to build relationships with service users, such as giving cigarettes as rewards (55) or allowing patients to flout smoking restrictions (42).

3.2 Do people in substance misuse treatment/recovery or their treatment providers perceive smoking cessation/reduction interventions as having an impact on substance misuse treatment/recovery and how?

One analytical theme was identified relating to this question, the relationship between smoking and other addictions. Some service users felt this relationship provided a rationale for tackling smoking alongside other substance misuse, whilst other service users and treatment providers were concerned smoking cessation may have a negative impact on substance misuse outcomes, and so the later should be prioritised and smoking cessation delayed.

3.2.1 Relationship between smoking and other addictions

Smoking and substance misuse were perceived as intimately linked (34, 38, 46, 55). How this link affected views on the impact of smoking cessation on substance misuse outcomes varied (34, 36, 38, 42, 55), and there were differences between service users and treatment providers. Some reported previous experience of a 'balancing effect' whereby cessation of one substance was associated with increased use of another (53), whilst for some, relapse to one was associated with relapse to another (37, 38, 44, 55).

Most treatment providers but only some service users felt addictions should be tackled one at a time, with substances other than smoking prioritised as they were perceived more harmful (38-40, 42, 46, 48, 49, 52, 53). Giving up both together was thought 'too much at once' and perceived to lead to increased risk of failure (34, 38, 46, 49) or drug relapse (34, 38, 40, 47, 48):

> *"We want to get them off of the harsher drugs before we treat them for something less severe"* Treatment provider quote (48)

Some service users and a minority of treatment providers perceived smoking as part of a lifestyle of addiction, and giving up all substances together, as part of a complete change of lifestyle, to be effective (34, 38, 44, 50, 53, 55). The idea of being completely 'clean' was identified in three American studies (38, 44, 50):

> *"smoking is attached to the drugs…so anything that gives you a chance to relapse, a reason to use drugs, should be addressed."* [Unclear from paper whether service user or treatment provider] (38)

> *"I really want a lifestyle that is free of all drugs and alcohol including cigarettes."* Service user quote (44)

The desire to tackle smoking alongside other substances was linked to the perception that smoking was like any other addiction (38, 42-44, 46, 47, 49, 51):

> *"[I was digging] in the trash can and finding cigarette butts and stuff to roll up and smoke...it's hard to explain, but anybody that is familiar with addiction, it [smoking] affects you the same way as a drug."* Service user quote (46)

However, a number of studies also reported participants often viewed smoking very differently from use of other substances (34, 38, 46, 49, 52):

> *"Cigarettes are legal and you can buy them over-the-counter, whereas all of the drugs...are illegal and you can be arrested for having them...and long-term the*

effects of cigarettes are not immediate as compared to crack...You can have a heart attack from smoking crack one time, as compared to cigarettes that cause cumulative effects [after] years and years and years of smoking." Service user quote (46)

3.3 When do people in substance misuse treatment/recovery and their treatment providers perceive to be the right time for a smoking cessation/reduction intervention?

Data on perceptions about timing of interventions was limited. As discussed above under 'relationship between smoking and other addictions' service users had mixed views, with some wishing to stop smoking alongside substance misuse treatment and others perceiving this to be too much at once and preferring to tackle smoking after substance misuse. Treatment providers mostly felt that smoking should come after recovery from other substance misuse. However, no more specific views on timing of potential interventions were reported.

3.4 What aspects of smoking cessation/reduction interventions for those in substance misuse treatment/recovery are perceived to be effective/ineffective and why?

To answer this question, characteristics of the interventions perceived to be effective/ineffective are considered, followed by aspects relating to intervention implementation.

3.4.1 Aspects of interventions perceived effective and ineffective

Different types of interventions were perceived variably, with much overlap. Perceived effective interventions were similar among service users and treatment providers and included: application of skills learnt in substance misuse treatment to smoking cessation (37, 38, 40, 44, 50), pharmacotherapy (38, 41, 43, 50), use of incentives/rewards/prizes (41, 43, 45, 47) and smoking cessation champions (42, 47).

The importance of providing information and education about smoking, cessation and treatment options was mentioned multiple times by participants and providers (37, 38, 41, 43, 44, 51, 53), contrasting with views discussed above that many had good knowledge about harms of smoking but were not motivated by this.

Interventions adapted to service user demographics (53) and needs were considered effective, including interventions tailored to those in substance misuse treatment (52), opportunities to complete a smoking cessation program more than once (51) and choice of treatment intensity (41).

Targeting smoking and substance misuse together was perceived effective by some service users and treatment providers (43, 53):

> *"he talks sometimes about what different drugs do with nerve receptors and he included tobacco in that and what different drugs do with the brain, like how it denies oxygen to the brain and that kind of thing."* Service user quote (43)

Pharmacotherapy was perceived effective by some, whilst others considered it ineffective as it targets only the physical addiction and not the habitual aspect (50) and

has side effects (40, 44, 51). Some American service users and staff were reluctant to use 'chemical' help (43, 52):

> *"I don't even understand that [NRT], that's not even quitting." Service user quote (52)*

Only one study mentioned e-cigarettes, and reported that few treatment providers expressed support for their use (47).

Interventions considered entirely ineffective were aversive therapy (37), going 'cold turkey' (47, 50), a 'quit line' (52) and computer reminders to staff (42).

3.4.2 Barriers and facilitators to successful intervention implementation

Change in organisational culture, so smoking is not perceived as normal and is routinely addressed, was considered important but challenging (41, 42, 47, 52). Importance of strong staff leadership was emphasised by treatment providers (42, 43, 47).

Lack of resources was a key issue identified by both service users and treatment providers. Cost to patients, lack of programme funding and research funding were considered barriers (34, 38, 43, 47, 50, 52):

> *"All I can say is give the researchers more money until they hit the nail on the head".* Service user quote (50)

Treatment providers felt they received insufficient training to feel confident in providing smoking cessation support (42, 43, 47):

> *"I wouldn't have a clue. So maybe it's just the lack of confidence on my own part to maybe help a client choose the right replacement. You know, would I be helping…would I be helping them choose the right form of therapy."* Treatment provider quote (43)

Some organisations considered smoking cessation as a separate service from substance misuse treatment, requiring different training and separate funding (47). There were reports of substance misuse treatment programs with no smoking cessation treatment provision (43), programs requiring service users to seek treatment externally (42) with lack of clear external referral pathways and concerns about stigma associated with substance misuse in external services (52), and lack of continuity between different services (43, 50).

Barriers could be overcome by reviewing model programs (42), staff training (42), leadership support (42), providing appealing tobacco free spaces (47) and free treatment (38).

4. DISCUSSION

This qualitative synthesis summarises available literature on barriers and facilitators to smoking cessation among people in substance misuse treatment/recovery, perceptions about the effect of smoking cessation on other substance misuse, timing of interventions and types of interventions perceived effective.

Interactions between themes are complex. The perceived intimate link between smoking and other substance misuse makes the needs of this population unique. Most treatment providers felt giving up multiple addictions together may be too much at once

and increased risk of relapse, and generally prioritised cessation of other substances over smoking. A mixed-methods systematic review of mental health professionals' attitudes towards smoking cessation among their clients, which included those working with substance misusers, although they were not separately analysed, found similar results (24). Quantitative findings suggested the most commonly held beliefs among professionals were that patients are not interested in smoking cessation and that it may be too much to take on alongside mental illness or substance misuse. Qualitative thematic synthesis of six studies on mental health professionals attitudes, which included two of the studies included in our review relating to substance misuse (42, 49), identified five key themes: 1) Beliefs about patients quitting smoking; 2) barriers to the provision of smoking cessation treatment; 3) attitudes to the provision of smoking cessation treatment; 4) acceptance of patients' smoking; and, 5) smoking as a useful tool. Comparing our results to the findings of this study, it seems that attitudes of mental health professionals in general regarding smoking cessation among their clients are similar to those working specifically in substance misuse. In contrast to the views of treatment providers, views of service users were more mixed. Many were motivated for smoking cessation, and whilst some perceived that smoking cessation alongside substance misuse treatment/recovery may be too much at once, others recognised that for them all their addictions are related and contribute to a lifestyle they wish to change completely by tackling substances together. This highlights a key disparity between perceptions of service users and treatment providers, and our results suggest the unique interaction between smoking and other substances makes this populations' needs distinct from the wider mental illness population.

Qualitative data on perceptions about timing of interventions was limited, but suggested there was some appetite for concurrent smoking cessation and substance

misuse interventions. Feasibility studies of interventions for dual tobacco and cannabis cessation suggest such interventions warrant further investigation through adequately powered RCTs (56, 57). A systematic review of smoking cessation interventions for substance misusers found four studies of effective concurrent interventions and highlighted the need for further research on timing of intervention delivery (18).

Negative affect was a trigger for smoking and also a perceived result of smoking cessation. Some felt dual cessation could lead to greater negative affect. Increased negative affect, including feelings of anger, anxiety and depression are inherent to nicotine withdrawal in the short term, lasting up to 4 weeks (58). However, a recent systematic review suggested these symptoms significantly decrease in the longer term, across follow up periods ranging from 7 weeks to 9 years, among those who have stopped smoking compared with continuing smokers (59). The perception that smoking can help relieve stress was also identified as a barrier to remaining abstinent from smoking among pregnant women (60).

A wide range of interventions were perceived effective and ineffective, with much overlap. Perceptions about effectiveness of NRT were mixed, and among those who perceived it to be effective, there was no consensus as to preferred route of administration, or whether use alone or in combination with other interventions (e.g. behavioural support, bupropion) was preferred. A systematic review of 17 studies by Thurgood et al. identified five studies reporting significant effects on smoking cessation for interventions using NRT, behavioural support, and a combination of these (18). Baca et al. suggest that as smokers who also misuse other substances are often highly dependent on nicotine, pharmacotherapy may be more important than for the wider population (9). Our results, combined with the results of these reviews, suggest perhaps a range of interventions should be offered, including pharmacotherapy,

behavioural interventions and combination interventions, with options for dual smoking and substance misuse treatment or separate interventions available at different time points as per the users' needs, and with options to move in and out of smoking cessation treatment. This also fits with emerging evidence that among the general population most smokers make multiple quit attempts and new quit attempts often occur within a few days of relapse (61).

Some felt smoking bans were effective, whilst others considered them to have a negative impact on substance misuse treatment. The conflicting views are similar to those in the literature on smoking restrictions in psychiatric hospitals (62) and prisons (63). There is a need for changing models of organisations to ensure where smoking restrictions are in place, cessation therapy is widely available and quickly accessible at the point of need.

There were examples of enthusiastic treatment providers greatly appreciated by service users, but many more of motivated services users feeling they lacked support from professionals. Unlike most of the general population, those in treatment or recovery from substance misuse may have very close, long-term relationships with professionals as a result of participating in intensive treatment and supported recovery, and so such professionals have a unique opportunity to encourage and facilitate smoking cessation if given the support to do so by their organisation. Most of the treatment providers in the included studies appeared not to be trained in smoking cessation. Most treatment providers prioritised other substance misuse outcomes, which was the focus of their service, over wider health gains for individual substance misusers. Reluctance to provide lifestyle advice is not unique to this group. A qualitative study of pharmacists identified reluctance to provide advice on weight, diet and alcohol use for fear of negative patient response (64). Training for treatment

providers on giving lifestyle advice is needed. The UK initiative 'Making Every Contact Count (MECC)' encourages conversations based on behaviour change methodologies to empower healthier lifestyle choices, including smoking cessation, making every health and social care contact an opportunity for health promotion (65).

A number of possible theoretical frameworks could be used in the development of interventions for service users and treatment providers. The Transtheoretical Stages of Change Model (66) suggests there are stages on the continuum of behaviour change, which are pre-contemplation, contemplation, preparation, action and maintenance. Individuals in the same stage of change are suggested to have similar barriers and facilitators to success and so thought to benefit from similar interventions. Motivational Interviewing (MI) may have a role to play as a brief, patient-centred, learnable set of communication skills that treatment providers could use to support service users to stop smoking, which is non-judgemental and based on compassion, respect and empathy (67). However, neither fully captures the social, economic and environmental factors affecting behaviour, nor specifically discusses the common aetiology of dual substance misuse, which the results of this review suggest may be key.

The PRIME (plans, responses, impulses, motives and evaluations) Theory of motivation may be the most appropriate theory on which to base a smoking cessation intervention for substance misusers in light of the results of this review (68). This suggests addiction can be usefully viewed as a disorder of the 'motivational system', which may include underlying abnormalities of this system which are: independent of the addictive behaviour (e.g. propensity to anxiety or depression or a motivational system that already lacks balance); stem from the addictive behaviour itself by undermining normal checks and balances (e.g. habit); and an unbalanced

environment (e.g. social pressures to engage in the activity). The theme identified in this qualitative synthesis regarding the relationship between smoking and other substance misuse integrates with the theory of disordered motivation, and the other analytical themes identified in the synthesis can be matched to abnormalities of the 'motivational system' independent of the addictive behaviour (mental health), those stemming from the addictive behaviour (habit, discussed under aspects of interventions perceived effective and ineffective) and those stemming from the environment (environmental influences; smoking bans/restrictions; relationships with professionals). Aspects of interventions perceived to be effective could be seen to be targeting each of these areas of disordered motivation.

This review has several limitations. Only one study using qualitative methods in the evaluation of a smoking cessation intervention was found. The other 20 studies sought views on smoking cessation in general, rather than in the context of a specific intervention. There is a lack of qualitative process evaluations performed alongside trials of smoking cessation interventions for substance misusers. The majority of the included studies were performed in the USA, and none of the studies were performed in low or middle income countries. Overall methodological quality was moderate. The CASP checklist was used to give an indication of study quality, and indicative scores were given to each study based on the number of criteria met by the study. However, the checklist was not originally designed to be used in this way, and the scores are for the purposes of discussion and reflection rather than a true quantitative measure of quality.

5. CONCLUSIONS

Too little is being done to address the high prevalence of smoking amongst those in treatment or recovery from other substance misuse. High smoking prevalence, strong relationships between smoking and substance misuse and opportunities for intervention whilst in treatment make this population unique. In view of the considerable morbidity and greater risk of mortality among substance misusers who also smoke, it is important to consider ways to address the identified barriers. Indeed, in the UK context where health care professionals should be 'making every contact count', there is a duty of care to take a holistic approach attending to wider lifestyle behaviours, including smoking cessation, which are likely to have the biggest long term impact on health. Treatment providers need additional training and resources to be able to provide support for smoking cessation. More research is required to build on the limited evidence base to develop enhanced packages of care tailored toward this deprived group of smokers.

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CONTRIBUTORS

CN conceived the idea for the project. SG developed the protocol with support and comments from CN, JC and RH. Searches were performed by SG. Screening, data extraction and analysis were carried out by SG, with a percentage double screened, extracted and coded by CN and JC. The manuscript was drafted by SG, with input from CN, JC and RH. All authors have approved the final article.

CONFLICT OF INTEREST

No conflict declared.

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Figure 1. PRISMA flow diagram

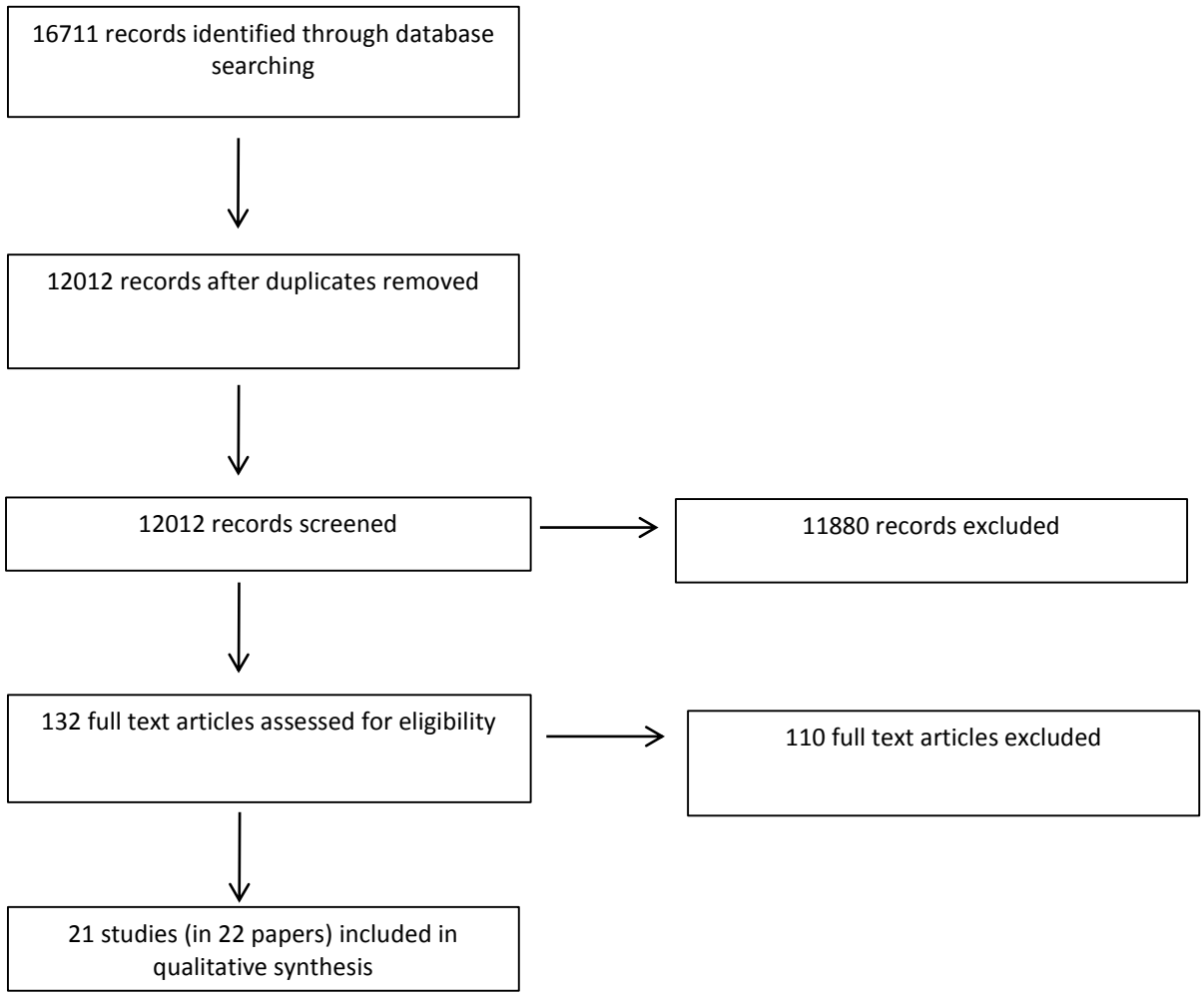
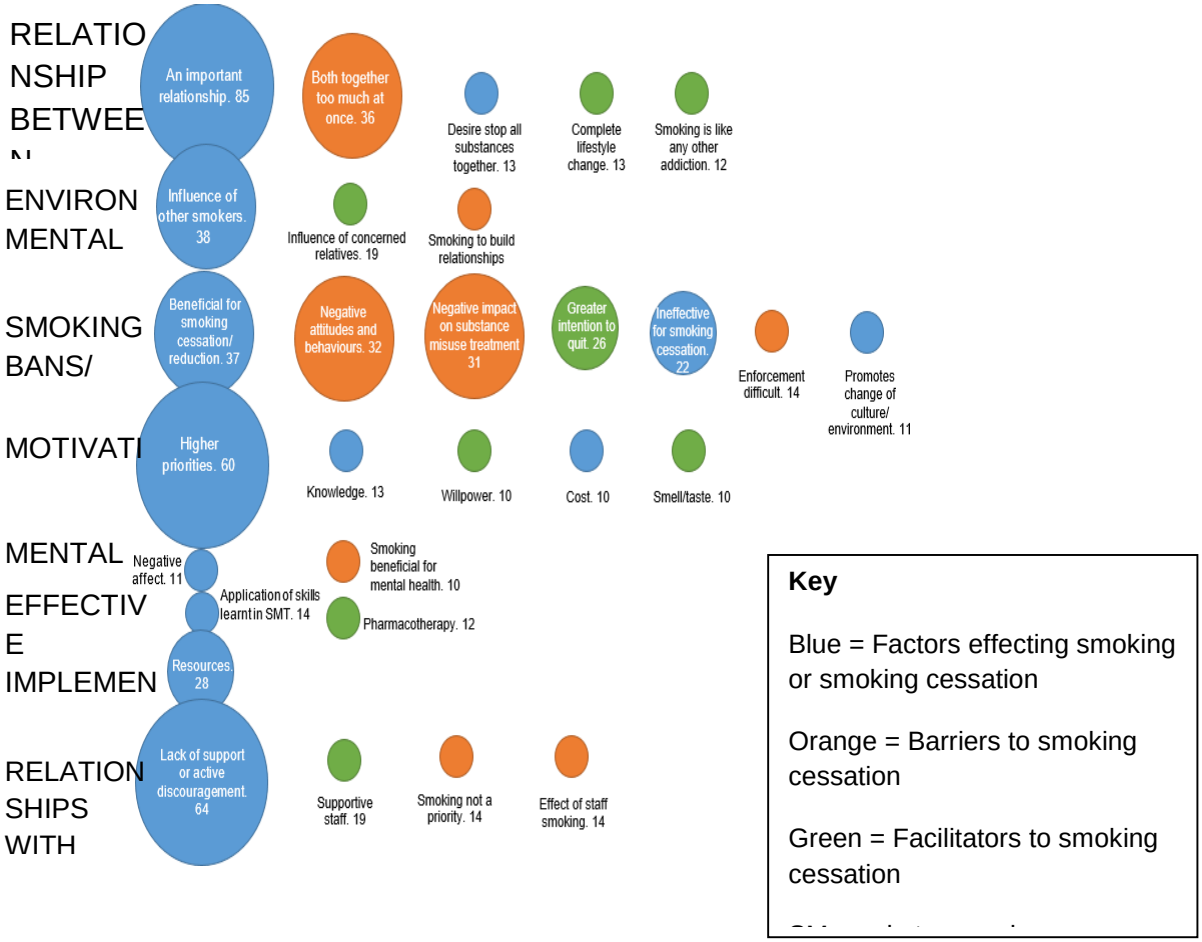


Figure 2. Qualitative synthesis coding overview



Box 1. Search strategy as used in MEDLINE

Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations and Ovid MEDLINE(R) 1946 to Present

1 Substance-Related Disorders/

2 exp Alcohol-Related Disorders/

3 Amphetamine-Related Disorders/

4 Cocaine-Related Disorders/

5 Inhalant Abuse/

6 Marijuana Abuse/

7 exp Opioid-Related Disorders/

8 Phencyclidine Abuse/

9 Substance Abuse, Intravenous/

10 exp Alcohol Drinking/

11 Marijuana Smoking/

12 Methadone/

13 exp Substance Abuse Treatment Centers/

14 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13

15 exp Smoking Cessation/

16 exp “Tobacco Use Cessation”/

17 exp “Tobacco Use Cessation Products”/

18 ((smok* or tobacco) adj4 (quit* or stop* giv* or ceas* or cessation or abstain or abstinen*)).ti,ab.

19 ((smok* or tobacco) adj4 (reduce OR reduction OR reducing OR reduces OR gradual OR gradually OR decline OR declines OR decrease OR (cut* AND down))).ti,ab.

20 (smoke-free or smoke free or smokefree).ti,ab.

21 (tobacco-free or tobacco free or tobaccofree).ti,ab.

22 15 or 16 or 17 or 18 or 19 or 20 or 21

24 14 and 22

Table 1 Study characteristics

Lead author, publication year, reference	Aim/focus, study design and analysis	Country where study was conducted	Participant description and demographics (including if in treatment or recovery or both, substances used, duration of substance misuse, cigarettes smoked per day in pack years)	Summarised findings and conclusions	Quality rating
Ambrose 2012	Aims: 'to 1) contextually explore the relationship between cigarette smoking and injection drug use, 2) identify facilitators and barriers of smoking cessation among recovering injection drug users, and 3) explore perceptions of nicotine replacement therapy (NRT) as an aid to quit smoking.' Study design: focus groups Analysis: thematic analysis	USA Single centre	30 service users in treatment and recovery (30% had recently been treated for alcohol or drug abuse) 50% female 93% African American Median age 44, IQR 47-54 80% current daily smokers 33% actively injecting drugs 37% crack use 60% alcohol use 20% living with HIV	Previous cessation attempts had reduced tobacco exposure among people with a history of injection drug use. "Denormalising" smoking in substance misuse treatment and teaching methods for dealing with cravings recommended. Further research required to develop models of smoking cessation services integrated with treatment for substance misuse and to identify predictors of success for service users successfully quitting smoking and other substances together or via a stepped approach.	5.5
Asher 2003	Aims: 'to report the relative frequency of endorsement of the various barriers as a source of guidance for clinicians wanting to motivate alcoholic patients to quit smoking, and to provide a replication on a second set of substance abusers of general barriers and an extension of previous research by asking about sobriety-specific barriers. Study design: one open ended survey item	USA Single centre	96 alcohol dependent service users in residential treatment completed a quantitative survey, 52 answered the one open ended question 82% Caucasian, 15%, African American, 3% Other. 59% male Mean age 35.4 years (SD = 7.6)	According to coded responses to the one open ended survey item, barriers to smoking cessation included negative affect, habitual aspects of smoking, seeing others smoke, addiction to multiple substances, compulsion and mental urges.	4

Lead author, publication year, reference	Aim/focus, study design and analysis	Country where study was conducted	Participant description and demographics (including if in treatment or recovery or both, substances used, duration of substance misuse, cigarettes smoked per day in pack years)	Summarised findings and conclusions	Quality rating
	Analysis method: two people independently coded the responses and grouped them into categories based on similar content				
Becker 2013	Aims: 'addiction experts participated in the semi-structured interviews about the relationship between tobacco and cannabis use and the demand for and possible design of an ISCP' (integrative smoking cessation program). 'focus group discussions were conducted to gain indepth information concerning users' problems, experiences, and methods of coping with the issues that occurred during cessation attempts.' Study design: Semi-structured interviews with addiction experts and focus groups with service users Analysis: Not specified	Switzerland Single centre	14 past/current tobacco smokers who also use or have used cannabis several times per week and are accessing a counselling service and 12 addiction experts Service users included 10 adolescents aged 16 to 22 years and four adults aged 27 to 39 years	Expert interviews - relationship between tobacco and cannabis use can impact cessation attempts. Those using both may increase use of the other when attempting to stop one of the substances. Quitting both simultaneously might prevent this balancing effect, but co-smokers may struggle to give up both together. Participant focus groups - reported experiencing the balancing effect. Willingness to quit both substances together low, but an intervention targeting both may be useful because of the strong relationship between the substances.	4.5
Bobo 1986	Aims: 'summarize findings reported to date on smoking among alcoholic populations and then detail the experiences	USA	14 adult service users in recovery following graduation from an intensive alcohol treatment program who had	Those recovering from alcohol misuse can successfully stop smoking whilst maintaining abstinence from alcohol.	3

Lead author, publication year, reference	Aim/focus, study design and analysis	Country where study was conducted	Participant description and demographics (including if in treatment or recovery or both, substances used, duration of substance misuse, cigarettes smoked per day in pack years)	Summarised findings and conclusions	Quality rating
	of 14 recovering alcoholics who successfully quit smoking.' Study design: Telephone interviews Analysis: Summary data presented	Unclear if single/multicentre	successfully stopped smoking for at least 6 months 100% Male 93% Caucasian Mean age 40 (range 29 to 64)		
Bobo 1993	Aims: 'This paper summarizes our findings on the tobacco use experiences of a sample of 124 CDU [chemical dependency unit] counselors in Nebraska who identified themselves as recovering alcoholics or problem drinkers.' Study design: Free text space for comments at the end of a questionnaire Analysis: Not specified	USA Treatment providers in 34 chemical dependency unit study approached for participation	125 chemical dependency unit staff with a personal history of alcoholism or problem drinking, 80% (n=99) with a smoking history 80% White and non-Hispanic, 16% Native American, 4% either Hispanic or Asian 43% female 10% were between the ages of 20 and 29; 36% were between 30 and 39; 30% between 40 and 49; and 24% were over 50.	Some reported service users should not be pressured into smoking cessation, although one participant supported a smoking ban. Some participants felt service users may benefit from provision of information about health effects. There were reports of successful smoking cessation, and others who remained determined to continue smoking. Some felt cessation alongside substance misuse treatment was a big challenge, and both together may be too much at once.	2
Chang 2010	Aims: 'to understand smoking behavior, the needs for smoking cessation, and the perceptions of the implementation of smoking bans among drug abusers in a prison in Taiwan.' Study design: Focus groups	Taiwan Single centre	77 service users in a prison-based substance misuse treatment centre 100% Male Average age was 37 years (SD 8.1). Before entering the prison 42.9%s used heroin or	Unintended consequences occurred when a smoking ban was implemented at this prison-based substance misuse treatment centre in Taiwan. Service users felt the policy was hypocritical, encouraged a black market in tobacco and that there was a lack of support and treatment for those wanting to stop smoking.	6.5

Lead author, publication year, reference	Aim/focus, study design and analysis	Country where study was conducted	Participant description and demographics (including if in treatment or recovery or both, substances used, duration of substance misuse, cigarettes smoked per day in pack years)	Summarised findings and conclusions	Quality rating
	Analysis: Content analysis		morphine only, 40.3% used heroin or morphine combined with amphetamines and 16.8% used only amphetamines.		
Cooperman 2015	Aims: 'To develop an Information-Motivation-Behavioral Skills (IMB) Model of behavior change based smoking cessation intervention for methadone maintained smokers, we examined smoking cessation related IMB factors in this population.' Study design: Focus groups with service users and individual interviews with treatment providers. Analysis: Content analysis using deductive and inductive approaches.	USA Two urban methadone clinics	35 service users and 10 treatment providers in methadone maintenance clinics Service users: 65% White, 29% Black, 9% Hispanic Treatment providers: 70% White, 20% Hispanic, 20% Black Service users: 54% female Treatment providers: 70% female Service users: median age 46 (IQR 39-51) Treatment providers: median age 46 (IQR 35-58)	Smokers on methadone may benefit from further research into a IBM model based smoking cessation intervention that is individualised and addresses IBM factors common among all smokers and those specific to this population.	8.5
Eby 2012	Aims: 'explores counselors' and clinical supervisors' perceptions of the [smokefree] regulation by content analyzing responses to open-ended questions asking about the positive and negative effects of the regulation approximately 1 year after its official passage.'	USA 50 freestanding substance abuse treatment centres affiliated with 16 treatment organizations	261 substance abuse treatment counsellors and 80 clinical supervisors working in treatment centres/affiliated organisations in New York State.	Treatment provider's views of smoking bans within substance misuse treatment centres were mixed. The most commonly cited advantages was positive behaviour change, and development of 'addict behaviours' the most frequently reported negative.	7

Lead author, publication year, reference	Aim/focus, study design and analysis	Country where study was conducted	Participant description and demographics (including if in treatment or recovery or both, substances used, duration of substance misuse, cigarettes smoked per day in pack years)	Summarised findings and conclusions	Quality rating
	Study design: Two open ended survey items Analysis: Inductive content analysis using grounded theory to categorise responses of the two open ended survey items separately for service users and treatment providers.	throughout New York State	60%/70% of counsellors/clinical supervisors Caucasian 61%/58% of counsellors/clinical supervisors female Average age 44 (SD 13.5 years)/48 (SD 11.71) for counsellors/clinical supervisors. The most frequently reported substances used among patients seeking treatment were alcohol (39%), marijuana (29%), cocaine (27%), and heroin (27%).		
Fallin 2016	Aims: 'to describe: (1) facilitators and barriers to engaging in tobacco treatment among pregnant, opioid dependent women receiving MAT [medication assisted treatment]; and (2) strategies to tailor tobacco treatment interventions with this population.' Study design: Semi-structured focus groups	Southern USA Single centre	22 service users receiving MAT during pregnancy and up to 6 weeks post-partum. Mean age 28 (range 22-37) with 'no racial or ethnic diversity.'	Participants motivated to stop smoking but faced multiple barriers. Authors suggest integrating smoking cessation and MAT to allow for the provision of tailored treatment in a supportive environment.	6.5

Lead author, publication year, reference	Aim/focus, study design and analysis	Country where study was conducted	Participant description and demographics (including if in treatment or recovery or both, substances used, duration of substance misuse, cigarettes smoked per day in pack years)	Summarised findings and conclusions	Quality rating
	Analysis: Codebook developed prior to data analysis based on researcher team experience of focus groups and literature. Transcripts coded to consensus, codes then examined to identify themes and patterns.				
Foulds 2006	Aims: 'This paper aims to summarize the lessons learned from the experience in New Jersey.' [the first state to require all residential substance misuse treatment programmes have smoke free grounds]. Study design: Qualitative feedback survey Analysis: Not specified.	USA 30 centres	Executive and clinical directors of 30 New Jersey residential programs – exact sample size not specified	Treating tobacco in substance misuse treatment considered valuable by treatment providers, but they were concerned about the effect of inconsistent smoking restriction polices, which was perceived to risk reduced admissions and revenues for smoke free centres. Importance of staff training, developing treatment services prior to implementing smoking restrictions, and integration of inpatient and outpatient treatment were emphasised.	2
Garner 2013	Aims: 'to explore homeless smokers' views, attitudes, experiences and knowledge with regard to smoking and quitting in an urban UK setting.' Study design: Semi-structured face-to-face interviews conducted with homeless smokers in Nottingham, UK.	UK Single centre	15 homeless smokers addicted to drugs or alcohol accessing a community harm reduction service 27% female Mean 33, range 18-53 53% alcohol, 40% cannabis, 27% heroin, 27% crack, 20% amphetamine 40% methadone currently on	The homeless substance misusing population accessing a drug harm reduction service included in the study were confident they could quit smoking if they wanted to and some were motivated to do so, but in the past they had rarely been offered support for smoking cessation and sometimes received active discouragement, so an opportunity to offer smoking cessation support to this vulnerable group is potentially being missed.	6.5

Lead author, publication year, reference	Aim/focus, study design and analysis	Country where study was conducted	Participant description and demographics (including if in treatment or recovery or both, substances used, duration of substance misuse, cigarettes smoked per day in pack years)	Summarised findings and conclusions	Quality rating
	Analysis: framework analysis.		60% in treatment for drug/alcohol misuse		
Gifford 2015	Aims: 'this qualitative study examined how SC [smoking cessation] treatment is delivered in VHA [Veteran Health Association] substance use disorder residential treatment programs (SRTPs) and the barriers and opportunities for growth that exist within these settings.' Study design: Semi-structured interviews Analysis: Content analysis.	USA 15 study sites	25 treatment providers across 15 study sites directly involved in or knowledgeable about smoking cessation implementation efforts Of licensed participants 75% were Caucasian, 17% preferred not to say, 8% were other and 0% answered African American. Of not licensed participants 62% were Caucasian, 15% African American, 15% prefer not to say and 8% other 56% female	There were considerable barriers to implementing smoking cessation treatment, including lack of local leadership and poor enforcement of local and national policies undermining accountability and uptake. There was evidence of inadequate knowledge and experience among staff, perpetuating ambivalence to the provision of smoking cessation treatment.	6
Hunt 2012 **Richter 2012**	Aims: 'to obtain descriptions of tobacco treatment services across different substance abuse treatment settings' (43) and 'identify subjective experiences and social processes that may influence facility adoption of tobacco treatment policies and practices' (49). Study design: qualitative interviews conducted until theoretical saturation reached.	USA 8 facilities	8 clinical directors, 25 staff and 29 service users in treatment in outpatient substance misuse facilities 69% of directors and staff White, 91% non-Hispanic. 69% of service users white and 96% non-Hispanic. 69% of directors/staff and 45% of service users female 69% of clients were <45 and 76% were 18-35 on entering treatment.	Service users often had to specifically request treatment and few staff reported encouraging unmotivated smokers to quit. There were no systems to facilitate consistent, evidence-based smoking cessation treatment.	8

Lead author, publication year, reference	Aim/focus, study design and analysis	Country where study was conducted	Participant description and demographics (including if in treatment or recovery or both, substances used, duration of substance misuse, cigarettes smoked per day in pack years)	Summarised findings and conclusions	Quality rating
	Analysis: Content analysis.				
Jones 2007	Aims: 'How are women in treatment for chemical dependency whose children are with them affected by the ban of the use of tobacco products in the treatment facility?' Study design: Interviews and focus groups and a survey with some open ended questions Analysis: Surveys analysed using SPSS. Focus groups and interviews hand transcribed as author felt participants may not wish to be recoded. Transcripts reviewed for repetitious words, phrased and sentiments, organised into themes and categories of themes.	USA Single centre	13-20 service users in a halfway house for chemically dependent women whose children reside with them in the treatment facility, who have been in treatment for at least 30 days (7 service users interviewed, 13 participated in focus groups, unclear if overlap of participants) Interviews: 3 Caucasian, 3 African American, 1 Cuban Focus group: 3 Caucasian, 4 Black, 1 Native American, 1 Hispanic 100% female Interviews: mean age 31.7 (6.7) Not reported for focus groups	Participants were motivated to remain tobacco free, but felt that the smoking ban affected their substance misuse treatment.	5.5
Ker 1996	Aims:' examines the issues around involuntary smoking cessation (ISC) and women in substance abuse treatment.' Study design: Two focus groups with service users	USA Single centre	34 service users at a residential substance misuse treatment program where mothers stay with their children and where smoking is banned	A properly designed smoking ban can be instituted at a residential substance misuse treatment centre for women without excessive program disruption and with positive results.	5.5

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	Analysis: Transcripts 'analysed and coded' by one author, checked for accuracy and validity by a second author.		21% Mexican America, 64% European American, 14% African American 100% female Mean age 30.8		
McCool 2003	Aims: 'examined patients' observations of what is unique about methadone and other drugs that led the vast majority to smoke. Identifying the contexts and consequences of patient smoking may help us to develop more successful interventions in this population devastated by tobacco-related morbidity and mortality.' Study design: Focus groups and individual interviews Analysis: Focus groups and interviews audiotaped and professionally transcribed. Transcriptions compared with audiotapes by authors and discrepancies corrected. Focus group and interview recordings by each participant were matched.	USA 5 methadone maintenance treatment centres	59 service users receiving methadone maintenance treatment continuously for at least 2 years 78% white 58% female Mean age 44 years Mean duration of methadone maintenance 11 years	Most patients linked smoking, methadone, and drug use, reporting they were complementary and shared similar cues and withdrawal symptoms. They reported that smoking differed from other substance misuse as it had fewer acute consequences. Due to the relationships between smoking and substance misuse future interventions should consider addressing them in combination.	8
Mikahilovich 2008	Aims: qualitative data provided rich accounts of peoples'	Australia Single centre	6 service users from a residential drug and alcohol rehabilitation service, who	Interventions involving NRT for special populations, including those in residential drug and alcohol rehabilitation, requires a more	6.5

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	experiences in the [smoking cessation] program.' Study design: Narrative interviews with service users Analysis: Not specified.		had been through a detoxification programme, resident with their children, who had participated in a smoking cessation programme	intensive, customised approach, delivered by appropriately trained staff.	
Pagano 2016	Aims: 'The present study examines facilitators of, and barriers to, tobacco use policies and tobacco cessation services as reported by directors from a nationwide sample of addiction treatment programs participating in the NIDA Clinical Trials Network (CTN).' Study design: semi-structured telephone interviews Analysis: thematic analysis	USA 8 outpatient, 9 residential and 7 methadone programmes	24 programme directors 83.3% White, 8.3% Native American, 4.2% African American, 4.2% Hispanic 58.3% female Mean age 51 (SD 10.9) Of the directors themselves 9.1% were in recovery from substance misuse and 17.4% were current smokers.	Substance misuse treatment programs are starting to place greater emphasis on smoking cessation but substantial infrastructural and cultural change is still needed.	7
Richter 2002	Aims: '(a) to identify ways to tailor nicotine dependence treatment to patients, and (b) to assess whether smoking reduction and nicotine maintenance are attractive and potentially harm-reducing options for people who do not consider quitting an option.'	USA 5 methadone maintenance treatment clinics	78 service users enrolled continuously in methadone maintenance for last 2 years 78.2% White 57.5% female Mean age 43.6 years Average of 10.8 years in methadone maintenance treatment	Successful quitters generally used a combination of methods. Nicotine craving was cited as the biggest challenge to staying stopped, but NRT was favoured by only a few participants with major health problems who thought a quit attempt would be unlikely to succeed. Some feared quitting smoking would divert them from their goal of quitting substance misuse, but others felt the skills they had	4.5

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	Study design: Focus groups and interviews Analysis: Demographic data analysed using SPSS. Interviews and focus groups audiotaped and coded using QSR Nudist IV. Inter-rate reliability for 24 key codes 83% agreement (kappa score of 0.57 which is 'fair').		Continuous smokers, relapses and successful quitters from	learnt in substance misuse treatment could be successfully applied to smoking cessation. Smokers were interested in smoking reduction as an alternative to quitting; but those who had failed to reduce smoking preferred complete cessation.	
Richter 2006	Aims: 'presents qualitative and quantitative information on provider attitudes regarding tobacco treatment in drug treatment.' Study design: Survey including open ended questions Analysis: Responses to open ended questions transcribed in Microsoft Excel, examined for common terms and comments categorised as to whether or not each common theme applied to them. Quotes exemplifying each theme were displayed in an illustrative table.	USA 408 clinics	408 treatment providers (medical directors, clinic directors, head nurses and supervising counsellors) from clinics providing methadone maintenance.	Many treatment providers felt treatment of other substance misuse was more important than smoking cessation, and that patients should not change too many things at the same time. They felt that smoking cessation may not be appropriate when service users were new to treatment, experiencing stress, reducing methadone dose or undergoing a detox. Some felt smoking was beneficial for managing negative affect and as a substitute for other drug use.	4
Wilson 2015	Aim: 'to explore service users and treatment providers' experiences, attitudes and	Australia	10 treatment providers from 4 programs 60% female Mean age 52 Age range 32-65	Both service users and treatment providers would like more to be done about smoking in substance misuse treatment. Staff reported	7.5

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	beliefs about smoking cessation in substance misuse treatment settings.' Study design: Semi-structured interviews with treatment providers and focus groups with clients Analysis: Data were transcribed and analysed using constant comparative analysis, an inductive method.	4 government funded treatment programs (a community based opiate treatment program, an inpatient and an outpatient hospital based service and a detoxification unit).	2 current smokers. 11 service users 9% female Mean age 34 Age range 24-53 All current smokers.	barriers, including lack of time, organisational culture, lack of enforcement of smoking restrictions, belief that it is not a priority, belief that smoking helps service users cope with substance misuse treatment, and perceptions that smoking cessation is ineffective or not used. Service users reported smoking due to habit, enjoyment, for stress relief, after seeing staff smoking, due to cost of NRT and concerns about NRTs addictiveness.	