Cambridgeshire County Council

Sheffield Hallam University | Centre for Behavioural Science and Applied Psychology

Promoting smoking cessation amongst adult smokers in Cambridgeshire

Phase one report: Insight gathering and intervention recommendations

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Executive Summary

Sheffield Hallam University were commissioned by Cambridgeshire County Council and Peterborough City Council to undertake research to understand the barriers and facilitators for seven health behaviours.

In Cambridgeshire, we explored:

- Physical activity
- Diet
- Smoking in adults
- Alcohol consumption
- Uptake of NHS health checks
- Vaping in young people

In Peterborough, we explored:

- Uptake of routine childhood vaccinations

This report presents the findings from the smoking in adults workstream in Cambridgeshire. The findings for other health behaviours in Cambridgeshire and Peterborough are presented in separate reports. The aim was to:

- Identify the barriers and facilitators for smoking cessation and uptake of Stop Smoking Services in Cambridgeshire
- Make recommendations for interventions that have the potential to address those identified needs

Our approach

Understanding the barriers and facilitators to a behaviour allows us to identify and recommend interventions that can effectively address that behaviour.

We used the Capability, Opportunity and Motivation – Behaviour (COM-B) model [1,2] to explore factors influencing smoking and/or smoking cessation. We conducted a survey of local residents who smoke and carried out interviews with smokers in Cambridgeshire.

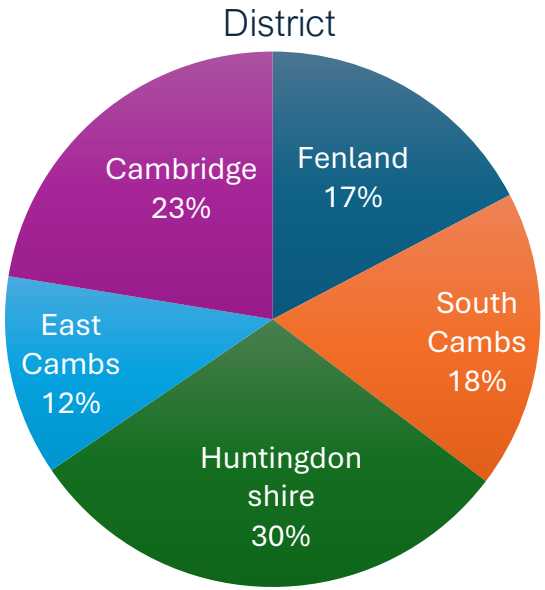
We also conducted a rapid review of evidence using the Behaviour Change Wheel [2] to understand what interventions have previously been effective to improve uptake of smoking cessation services.

We then used a heatmap [3] approach to match effective behaviour change strategies with the barriers and facilitators to quitting smoking for smokers living in Cambridgeshire.

Based on our findings, we have made a series of intervention recommendations for consideration by Cambridgeshire County Council. Our recommendations are appraised based on their likely acceptability, practicality, effectiveness, affordability, side effects and equity [2,4].

Key findings – local survey

We surveyed 272 smokers living across all districts of Cambridgeshire.

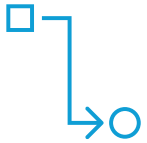


- The majority of people we surveyed (>96%) smoked **manufactured cigarettes and/or roll-your-own cigarettes.**
- Over half (57.7%) of smokers surveyed reported having **never tried to quit or cut down** on smoking.
- Nearly half (47%) of smokers were classed as having **moderate or high nicotine dependence**, calculated using the Heaviness of Smoking Index [5].
- Smoking behaviours (previous quit attempts and heaviness of smoking) varied with gender, ethnicity, household income, education level, area of deprivation, district and health.
- Key barriers to quitting smoking were low reflective motivation (i.e., **low intentions or desire to quit smoking**) and strong automatic motivation (i.e., **smoking is something they do automatically, without thinking about it**).
- **Living in more deprived areas, and/or Fenland or Huntingdonshire** appeared to be associated with more barriers to quitting smoking.
- People from **White Other ethnicity** and those with a **health condition / disability** also appeared to experience more barriers to quitting smoking.

Key findings – interviews with smokers

We interviewed 13 smokers aged between 22 and 68, living in Huntingdonshire and Fenland. We identified a wide range of barriers (B) and facilitators (F) for quitting smoking, including:

Most smokers express a desire to quit (F) but many feel that they are not 'ready' (B).



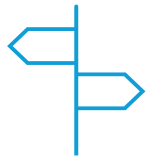
Behavioural cues to smoke are strong and difficult to avoid in particular settings (e.g., socialising, when drinking or eating, in the workplace, at times of stress) (B).

Smoking is highly socially normalised for some people, with everyone around them smoking. Social influence comes from older relatives, friends and other family (B).

Unregulated' cigarettes are widely accessible and make smoking affordable and more difficult to limit (B).

Some smokers believe that quitting smoking is difficult and/or lack belief in the effectiveness of stop smoking services. Others believe they do not need support to quit or that services are not effective or suitable for them (B).

Many smokers express concerns about the consequences of smoking (F) but also have concerns about the short-term consequences of quitting, including weight gain, impact on mood and emotions or social consequences (B).



Smokers have concerns about switching to other products such as NRT and/or e-cigarettes (B).

Key findings – rapid evidence review

We conducted a rapid evidence review to identify what types of interventions have been implemented to promote or support the uptake of community-based smoking cessation services and programmes (excluding those delivered in clinical settings).

We conducted systematic searches and screening, resulting in 18 included studies.

Overall, there was evidence that interventions utilising a range of intervention functions (particularly Education, Persuasion and Enablement) are effective at increasing uptake of smoking cessation services:

- Education (used in 16 studies) – *intervention components that aimed to increase knowledge or understanding about smoking cessation and/or the support available to participants*
- Persuasion (used in 8 studies) – *intervention components that used communication to induce positive or negative feelings or stimulate action towards uptake of smoking cessation programmes*
- Enablement (used in 14 studies) - *intervention components that support smokers to take up the offer of smoking cessation services and programmes*
- Incentivisation/Coercion (used in 3 studies) – *intervention components that create an expectation of reward or punishment associated with uptake of a smoking cessation programme*
- Environmental Restructuring (used in 3 studies) – *intervention components that changed the physical or social context around a smoker to support them to uptake a smoking cessation programme*

Our review identified 25 different behaviour change techniques used in our included interventions. The most frequently reported were:

- Social support – practical *(n = 8 papers). Examples included actively referring smokers, making appointments for them or supporting them to enrol*
- Instruction how to perform the behaviour *(n = 7 papers). Examples included providing written materials explaining strategies for successful quitting and/or how to use NRT*
- Information about health consequences *(n = 7 papers). Examples included written leaflets, educational sessions or text messages about the health risks and hazards of smoking*
- Reduce negative emotions *(n = 6 studies). Examples included information about how to manage withdrawal or reduce stress*
- Pharmacological support *(n = 6 studies). Examples included providing NRT patches, lozenges and/or gums, with supply ranging from 1-week to 12-week supply*

Our recommendations

Smoking and/or quitting smoking is a complex behaviour, influenced by a wide range of barriers and facilitators. No single intervention is likely to address all possible influences at once, and those influences may also vary between individual smokers. Acknowledging this, we are making diverse, theory-informed intervention recommendations for promoting smoking cessation in Cambridgeshire.

Intervention recommendation 1: Developing smokers' intentions or readiness to quit

A considerable number of smokers who took part in our survey or interviews expressed low intentions to quit smoking. Many said they wanted to quit but expressed hesitancy about how ready they were to do so. Our first recommendation is therefore an intervention to support smokers to develop the intention or perceived 'readiness' to quit smoking. Whilst more work would be needed to determine the specific content and mode of delivery for such an intervention, it should include:

- Supporting smokers to consider personal reasons for quitting e.g. health consequences of smoking, social consequences (e.g. identity as a parent) and explore the pros and cons of quitting versus continuing to smoke.
- Problem-solving concerns or anxieties about quitting (e.g. weight gain, cravings and triggers, stress and mood).
- Providing opportunities to learn and develop coping strategies and skills for quitting, e.g. through practice quit attempts or a graded approach to cutting down.
- Improve knowledge about how to quit and the support available from SSS (with active referral where possible).

Intervention recommendation 2: Promoting the effectiveness of stop smoking services

In our survey findings, only 10% of those who had previously tried to quit or cut down smoking had accessed local stop smoking support, despite there being a range of services available in Cambridgeshire. Meanwhile, our interview findings suggested that smokers were aware of services, but that some had reservations about their effectiveness and/or suitability for them personally. Messaging and/or communications about the effectiveness of smoking cessation support available throughout Cambridgeshire could potentially increase uptake of stop smoking services and encourage more smokers to try and quit. Communications could be delivered in a variety of formats, such as community-based educational sessions, social media promotions and/or other advertising. To address key barriers, it should include:

- Information about how many people have successfully quit using the support available and how accessing support improves your chances of a successful quit.
- Normalising repeat quit attempts i.e. encouraging those who have previously tried to quit to try again.
- Using credible sources to portray the messages e.g. ex-smokers, previous users of the service, relatable role models.
- Delivery of messages in alternative languages.
- Consider developing a basic decision aid to help people decide what support is best for them.

Intervention recommendation 3: Smoking harm reduction in the workplace

A key theme from our interviews with smokers was that being around others who are smoking, and in situations where there are triggers and cues to smoke was a substantial barrier to quitting. The workplace was one such setting commonly identified by participants, especially those who worked in routine and manual occupations and/or had structured work breaks. An intervention designed to support people to reduce the amount they smoked at work would serve as a harm reduction initiative and a positive first step towards quitting completely.

We recommend an intervention designed to support smokers to identify triggers and cues to smoking, set goals to reduce their smoking and develop action plans to overcome any barriers that might prevent them from meeting that goal. A graded approach, whereby smokers reduce their smoking incrementally over time could be considered, along with practical social support from employers where feasible.

Intervention recommendation 4: Messaging about the risks of unregulated cigarettes

Amongst the smokers we interviewed, all but one were smoking 'unregulated' cigarettes or tobacco, which they described as widely accessible via local shops and/or social contacts. Many expressed concern about the quality and ingredients in these products, with some recounting experiences of having been physically ill from using them. Some also suggested that the low price of these products meant that they smoked more.

Messaging and/or communications to convey the risks and wide-ranging negative consequences (health, social and environmental) of buying unregulated products could encourage more smokers to consider cutting down on how much they smoke, or potentially switching to e-cigarettes. Communications should include clear and accessible information about how to access support for cutting down, switching, or to discuss any concerns about smoking. The acceptability of these messages, and their potential unintended consequences (either positive or negative) would need to be evaluated before such an intervention is implemented.

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Conclusion

This mixed-method research has identified key capability, opportunity, and motivational barriers and facilitators for quitting smoking amongst adult smokers in Cambridgeshire. Factors influencing smoking, quitting and/or cutting down are wide-ranging and complex and will vary between different smokers. A range of different interventions are needed to address the barriers and facilitators to quitting or cutting down smoking.

We have made a series of recommendations about how to support smokers in Cambridgeshire, including both harm reduction approaches and support to access stop smoking services. These recommendations include supporting smokers to develop the 'readiness' to quit, supporting cutting down on smoking in the workplace, promoting the effectiveness of stop smoking services and messaging and communications about the risks associated with unregulated cigarettes.

Recommended citation:
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Smoking in adults: Main report

Background

- Smoking remains the leading cause of preventable illness and death in the UK [6] and a key driver of health and economic inequalities [7].
- Those experiencing deprivation or marginalisation are more likely to smoke and more likely to suffer smoking-related disease or death [7].
- Although Stop Smoking Services have shown to be effective in helping people to quit [8], those experiencing deprivation or marginalisation are least likely to access these services and find it more difficult to quit with the help of those services [9,10].

Smoking in Cambridgeshire

- Fenland (24%) has a higher proportion of adult smokers compared with England (11.6%) [11]. There are also different population groups (and therefore different needs) within Cambridgeshire.
- For example, within Cambridgeshire, Cambridge (43.6%), Fenland (34.6%), South Cambridgeshire (29.7%), and Huntingdonshire (24.8%) have a higher proportion of adult smokers who are in routine and manual occupations compared with England (22.5%) [11].

Local Authority Name	2019-2023 Current smokers % (5-year rolling average)
Cambridge	13.5
East Cambridgeshire	10.5
Fenland	22.1
Huntingdonshire	12.3
South Cambridgeshire	8.4
Peterborough	14.7
England	**13.0**
UK	**13.2**

- Cambridgeshire currently has commissioned Stop Smoking Services in community, primary care, hospital in-patient and pharmacy settings plus support for smoking cessation during pregnancy and a choice of in-person and digital support options. The Tobacco Control Alliance supports system-wide knowledge and data sharing.
- Discussions with professional stakeholders highlighted gaps in service provision e.g., rural locations, evening/ weekend services and a lack of targeted approaches and expertise to support some underserved/high prevalence groups.

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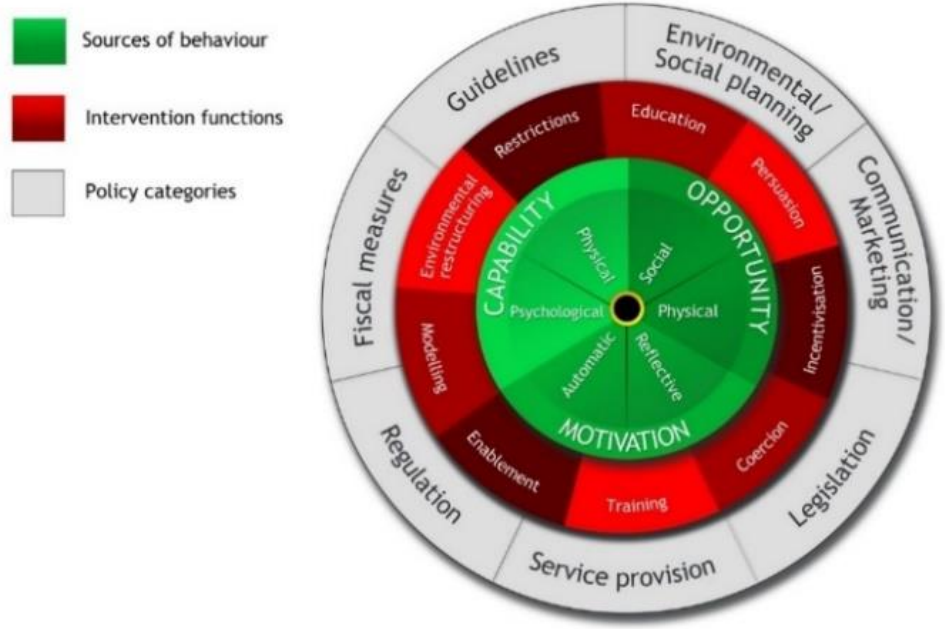
How we used behavioural science in this context

Theoretical approach

We used the Behaviour Change Wheel [2] to make theory-informed intervention recommendations to promote smoking cessation and/or harm reduction. This involved:

- Understanding the barriers and facilitators for quitting smoking, using the capability-opportunity-motivation model of behaviour (COM-B) (green circle) and the Theoretical Domains Framework (TDF) [12]
- Matching the types of intervention functions that are likely to address those identified barriers and facilitators (red circle)
- Matching the types of policy categories that can help to deliver those identified interventions (grey circle).

We described the content of the intervention recommendations in terms of its Behaviour Change Techniques (BCTs), which are the 'active ingredients' of the intervention [13].



We used the APEASE evaluation criteria [2] to explore which intervention recommendations are likely to be acceptable, practical, effective, and affordable, and whether receiving and/or delivering these interventions are likely to result in unintended consequences or impact on inequalities.

Local survey of smokers in Cambridgeshire

We conducted a survey of local residents across Cambridgeshire, including questions regarding multiple health behaviours (i.e., smoking, alcohol, diet, physical activity, uptake of NHS health check uptakes). Survey participants who stated that they were a current smoker were asked specific questions about smoking-related behaviour and their perceived barriers and facilitators to smoking cessation.

The objectives were to:

1. Identify patterns of adult smoking behaviour (e.g., type of tobacco product, levels of smoking) and quit attempts across residents of Cambridgeshire

2. Explore whether adult smoking behaviours (e.g., type of tobacco product, levels of smoking) and quit attempts vary by demographic variables

3. Explore barriers and facilitators to smoking cessation among adult smokers living in Cambridgeshire

4. Identify whether barriers and facilitators to smoking cessation vary by demographic variables

Individuals were recruited via on-street market researchers between August – October 2024. Eligibility criteria included: participants aged 18 or above; Cambridgeshire resident; able to provide consent. A purposive sampling strategy was used to recruit a diverse sample e.g., living in areas of varying deprivation; varying by smoking status; ethnicity; age.

The survey was designed in consultation with professional stakeholders. Smoking-related measures included:

- Smoking behaviour (Type and amount of tobacco product used; how many cigarettes per day they typically smoke (nicotine dependence [5]; how soon after waking they smoke or use a tobacco product (nicotine dependence); use of e-cigarettes or vapes; quit attempts/ attempts to cut down and methods used).
- Capability, Opportunity and Motivation to quit smoking [14].
- Demographic and health data (i.e., age; partial postcode; gender; ethnicity; country of birth; whether they speak a language other than English at home; employment status; health status; annual household income; education level).

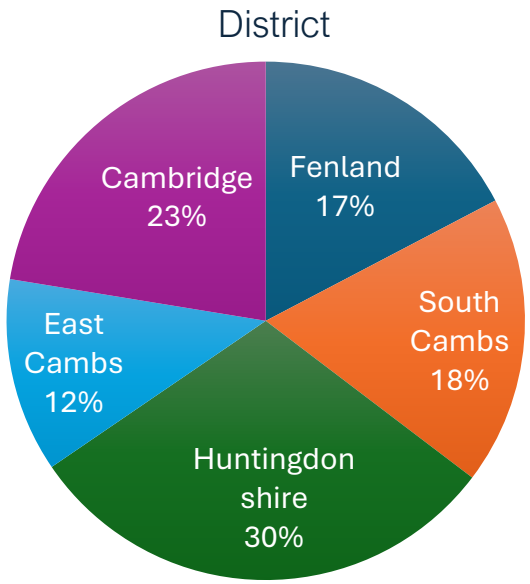
Ethical approval

Ethical approval was granted by Sheffield Hallam University Research Ethics Committee (ID ER65436549) and Cambridgeshire County Council. All participants provided informed consent before participating.

Survey findings

Participants

In total, 272 residents in Cambridgeshire who reported that they currently smoke or use tobacco products took part in the survey.



Smokers who took part lived across all local authority districts of Cambridgeshire.

62.6% of smokers surveyed were employed. Over half of these (55.5%) identified as a routine or manual worker

Almost one third (32.6%) reported having no formal qualifications

Over half (57%) were from moderately deprived areas (IMD deciles 3-6). Only 8.7% (23 participants) were from the most deprived (IMD deciles 1-2)

Almost three quarters (72.5%; 198) were White British. The next largest group in terms of ethnicity was White Other (14.3%; 39)

47 smokers (17.3%) reported speaking a language other than English at home. 19 different languages were identified

Of those reporting income data (n = 97), 30.9% reported an annual income of ≤£20,000.

Research Question 1: *What are the **patterns of adult smoking behaviour** (e.g., type of tobacco product, levels of smoking) and quit attempts for smokers surveyed in Cambridgeshire?*

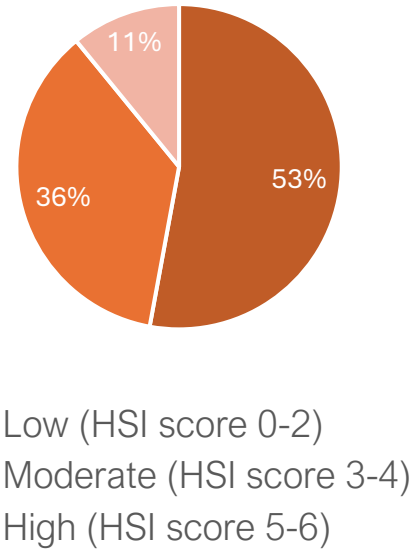
The majority of smokers were using manufactured cigarettes or rolling tobacco

Types of tobacco used in a typical week

Roll your own	52.2%
Manufactured cigarettes	49.6%
Cigars	0.7%
Pipes or 'chillum' pipe	0.7%
Shisha	0.7%
Scented chewing tobacco	1.1%
Snuff	0.7%
Other	0.7%

47% of smokers were classed as having moderate or high nicotine dependence

Nicotine Dependence based on Heaviness of Smoking Index (cigarettes per day + time from waking)



Around 15% of smokers were dual users also using vapes or e-cigarettes

Do you regularly use vapes or e-cigarettes?

Yes: 14.7% (40)
- 65% disposable
- 35% refillable
- 5% both

No: 85.3% (232)

The Heaviness of Smoking Index (HSI) was used to measure nicotine dependence in cigarette smokers. HSI scores were calculated from the time to first cigarette of the day and number of cigarettes per day, giving scores on a 0 to 6 scale, where 0-2 indicates low nicotine dependence, 3-4 indicates moderate dependence and 5-6 indicates high dependence.

Research Question 1 (cont.): *What are the patterns of adult smoking behaviour (e.g., type of tobacco product, levels of smoking) and **quit attempts** for smokers surveyed in Cambridgeshire?*

Over half (57.7%) of smokers surveyed reported having **never tried to quit or cut down** on smoking.

Of those who had attempted to quit or cut down, the **most commonly used quit method was e-cigarettes or vapes** (reported by 40% of smokers).

21 smokers reported having used more than one method to try to quit or reduce smoking.

What method did you use to try and quit or cut down on smoking?

Nicotine replacement therapies	32 (27.8%)
E-cigarettes or vapes	46 (40.0%)
Accessed local Stop Smoking Services	12 (10.4%)
Accessed an online community or support group	2 (1.7%)
Accessed a quit smoking app	4 (3.5%)
Independently or not otherwise specified	34 (29.6%)
Medication	3 (2.6%)
Unsure	6 (5.2%)

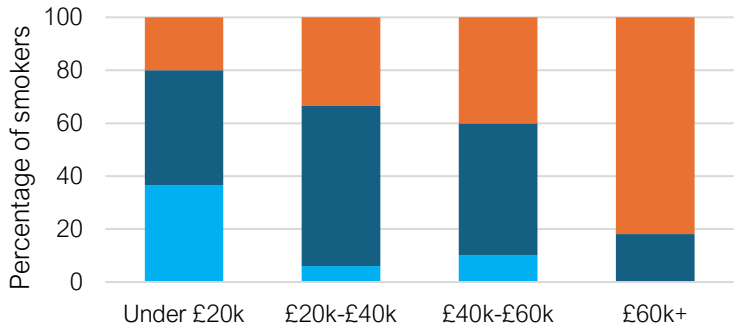
Research Question 2: *Do adult smoking behaviours and quit attempts vary by demographic and health variables?*

Nicotine dependence:

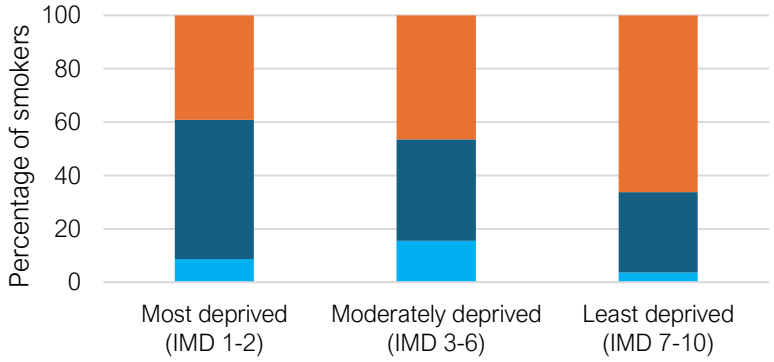
Smokers with moderate or high nicotine dependence tended to be on lower incomes, live in areas of higher deprivation, have fewer formal qualifications and/or have at least one health condition/disability. 75% of smokers with high nicotine dependence lived in Huntingdonshire.

Key:
- High nicotine dependence
- Moderate nicotine dependence
- Low nicotine dependence

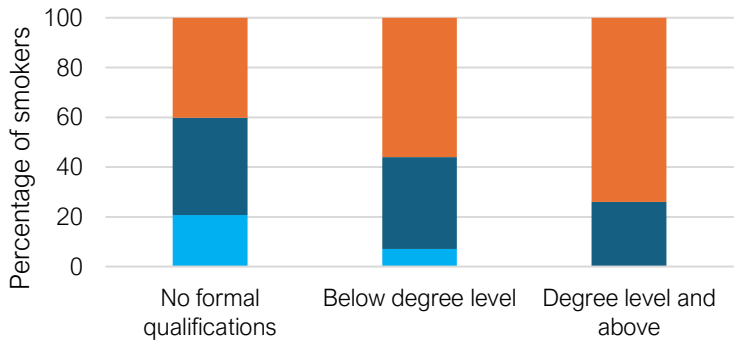
Nicotine dependence by household income



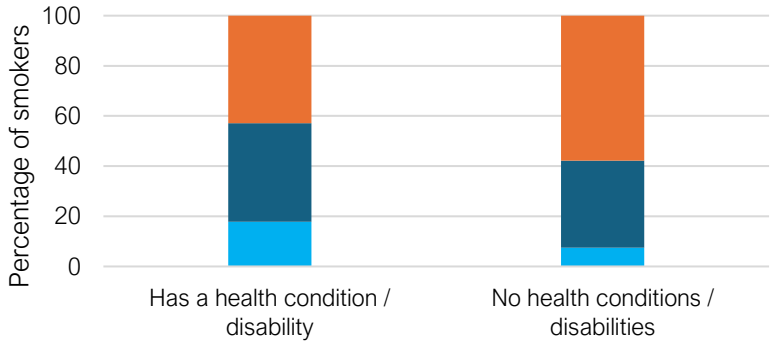
Nicotine dependence by area of deprivation



Nicotine dependence by education level



Nicotine dependence by health



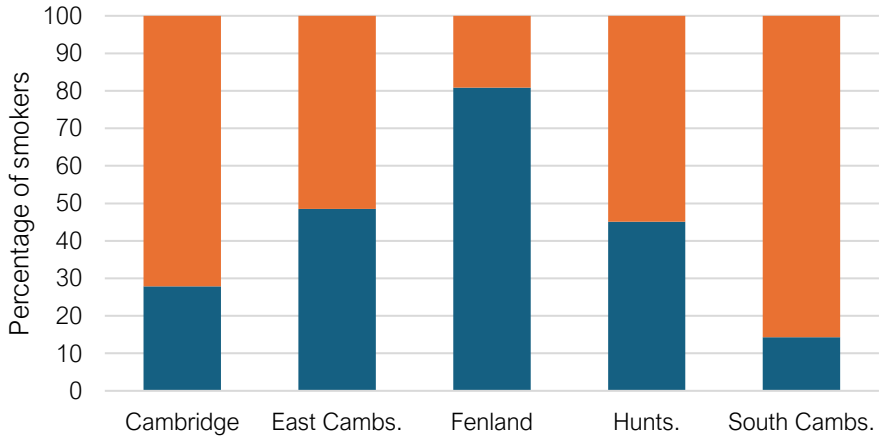
Deprivation based on IMD calculated using participants' postcode data

Research Question 2 (cont.): *Do adult smoking behaviours and quit attempts vary by demographic and health variables?*

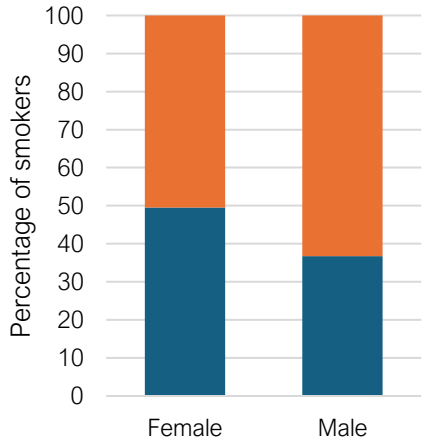
Previous quit attempts:
Smokers who had previously tried to quit or cut down were more likely to be from more deprived areas, with Fenland having the highest proportion of smokers who had previously tried to quit / cut down.

Smokers who had never tried to quit or cut down were more likely to be male and/or of White Other ethnicity.

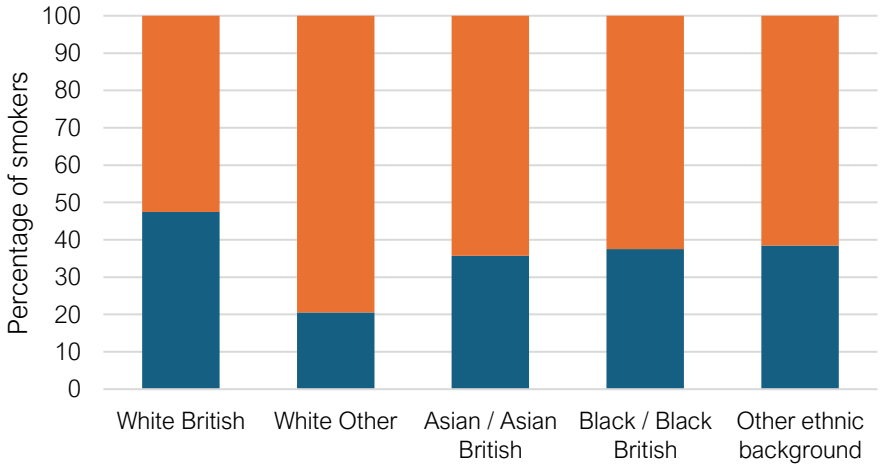
Quit attempts by district



Quit attempts by gender



Quit attempts by ethnic background

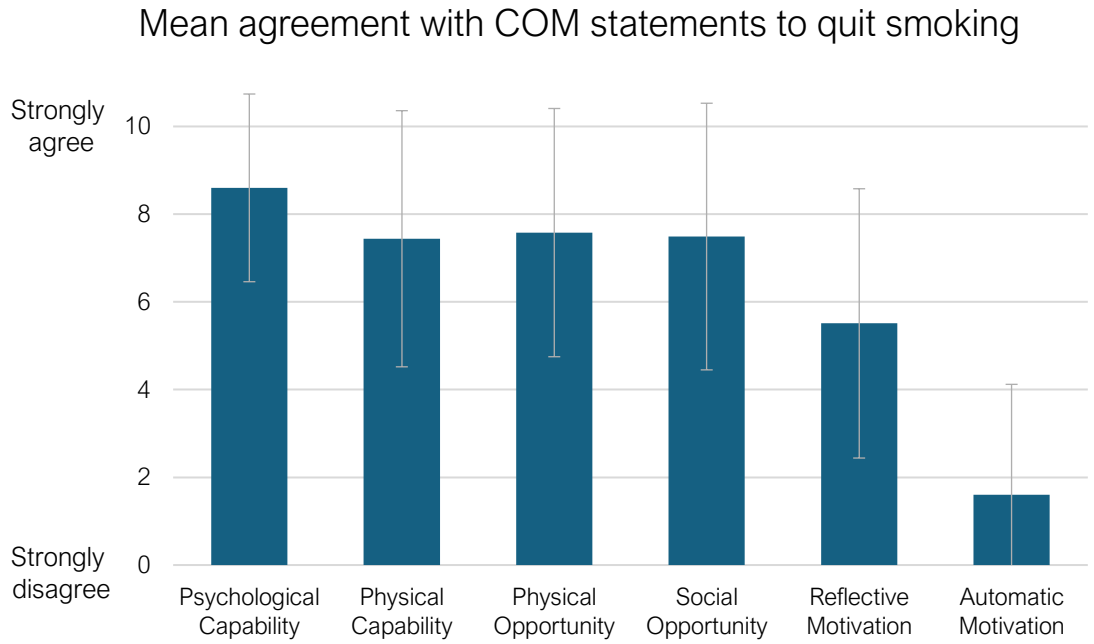


Key:
- Previously tried to quit / cut down smoking
- Never tried to quit / cut down smoking

Research Question 3: *What are the barriers and facilitators to smoking cessation among adults living in Cambridgeshire?*

All participants who smoked were asked to rate their agreement with six statements about smoking, adapted from a brief measure of capability, opportunity and motivation [14], on a scale from 0 ("strongly disagree") to 10 ("strongly agree").

Psychological capability "I know about the importance of quitting smoking and have skills to make decisions and plans to quit smoking"
Physical capability "I have the physical skills and enough physical stamina to quit smoking"
Physical opportunity "I have sufficient time and the necessary resources (e.g., access to stop smoking services, nicotine replacement) to quit smoking"
Social opportunity "I have the necessary support from people (e.g., from friends and family) to quit smoking"
Reflective motivation "I intend to (or want to) quit smoking"
Automatic motivation "Smoking is something I do automatically (without thinking about it)" *



*For this item, scores were reverse coded, as the question asked about smoking automatically (i.e. habit) rather than quitting. For this item, lower scores indicate stronger agreement that smoking is something they do automatically. Error bars on charts represent one standard deviation above and below the mean.

Research Question 3 (cont.): *What are the barriers and facilitators to smoking cessation among adults living in Cambridgeshire?*

The data were highly skewed for **capability** and **opportunity** items, with a high proportion of respondents agreeing (score of 10/10) with each item. Across the entire sample (n = 272), respondents reported that:

- They know about the importance of quitting smoking and have the skills to make decisions and plans to quit smoking (psychological capability).
- They have the physical skills and enough physical stamina to quit smoking (physical capability).
- They have sufficient time and the necessary resources (e.g., access to stop smoking services, nicotine replacement) to quit smoking (physical opportunity).
- They have the necessary support from people (e.g., from friends and family) to quit smoking (social opportunity).

There was a different pattern of results for the **motivation** items. Across the entire sample (n = 272), respondents reported that:

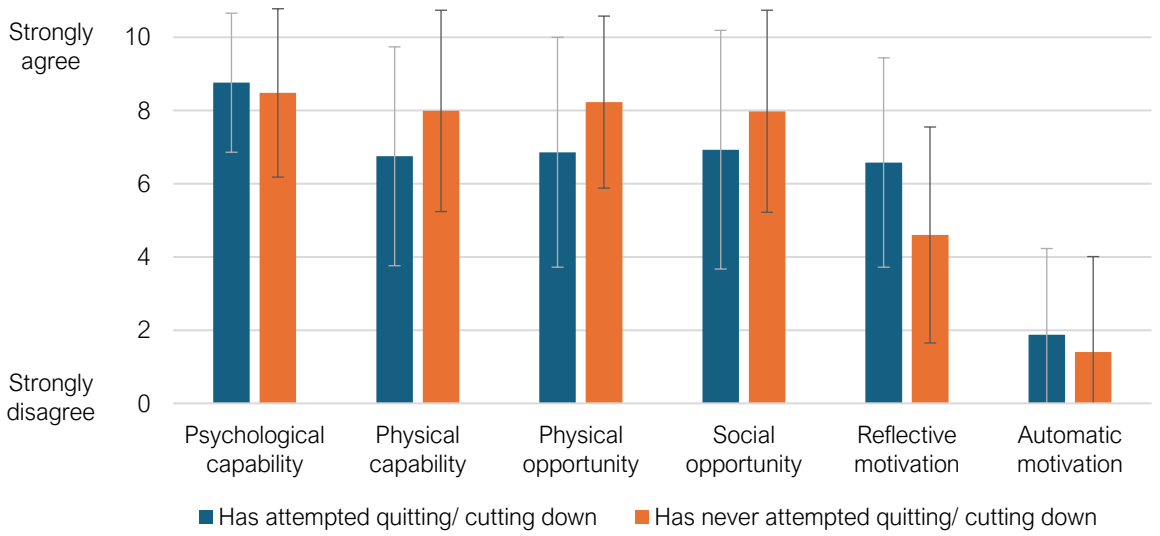
- Smoking is something they do automatically, without thinking about it (automatic motivation)
- They had weaker intentions (or willingness) to quit smoking (reflective motivation), although this item had the most varied responses (see figure).

Research Question 3 (cont.): *What are the barriers and facilitators to smoking cessation among adults living in Cambridgeshire?*

Respondents who had previously tried to quit smoking or cut down were more likely to report:

- Weaker beliefs that they have: the physical skills and enough physical stamina to quit smoking (physical capability); sufficient time and the necessary resources (e.g., access to services, nicotine replacement) (physical opportunity) and have the necessary support from people (e.g., from friends and family) to quit smoking (social opportunity)
- Stronger beliefs that: they intend to (or want to) quit smoking (reflective motivation); smoking is something they do automatically (without thinking about it) (automatic motivation)

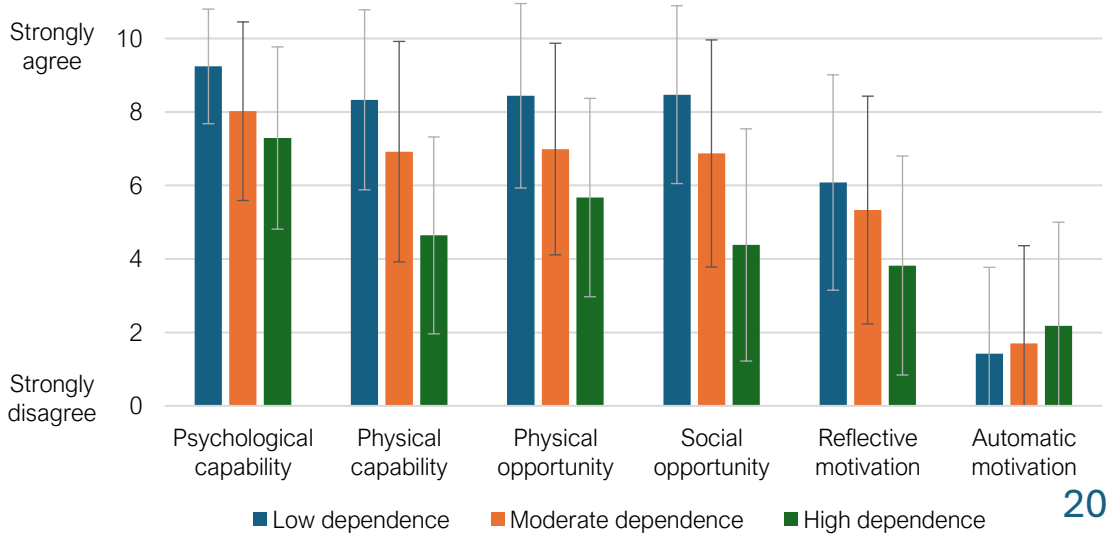
Mean agreement with COM statements to quit smoking by previous quit attempts



Respondents who were classified as having high nicotine dependence tended to report weaker capability, opportunity, and reflective motivation to quit smoking, compared with those classified as having lower dependence.

However, smokers who were classified as having high nicotine dependence tended to report stronger automatic motivation to quit smoking (i.e., weaker habits for smoking), which is counter-intuitive and might reflect a lack of awareness of the automaticity of their smoking habits.

Mean agreement with COM statements to quit smoking by nicotine dependence



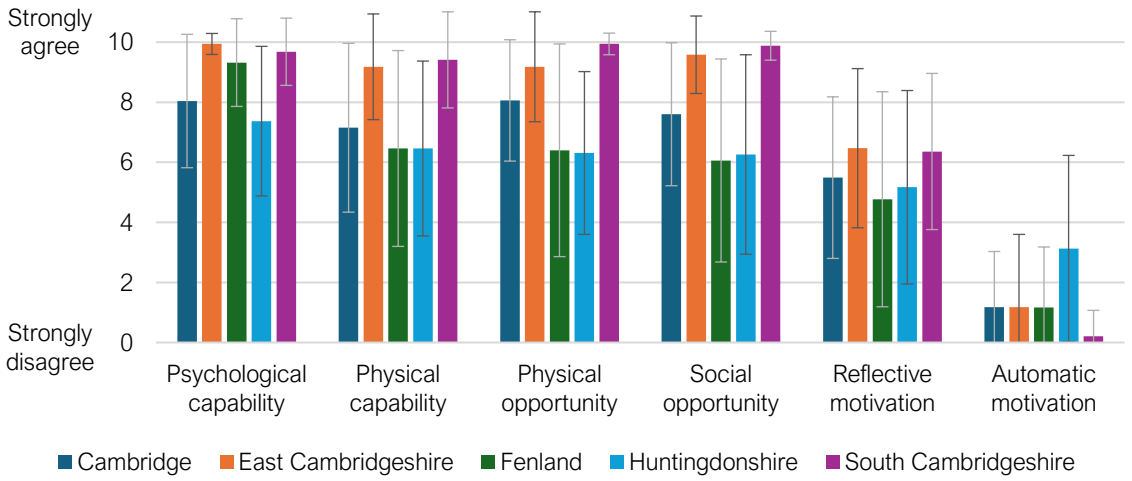
Research Question 4: *Do the barriers and facilitators to smoking cessation vary by demographic and health variables?*

Smokers in Fenland and Huntingdonshire reported the weakest physical capability, physical opportunity and social opportunity to quit smoking.

Smokers in East and South Cambridgeshire reported the strongest capability and opportunity to quit smoking.

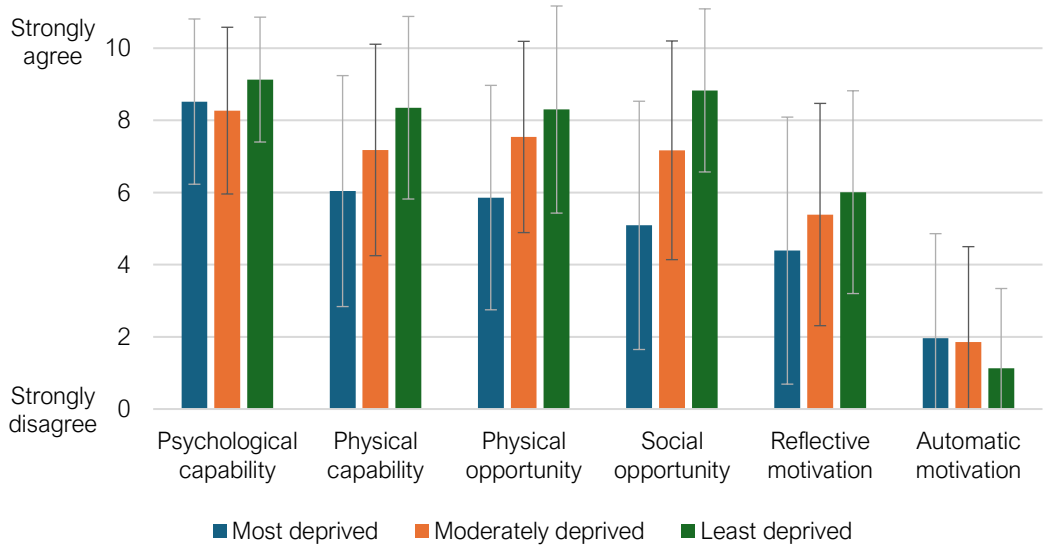
Smokers in Huntingdonshire reported the weakest beliefs that they know about the importance of quitting smoking and have skills to make decisions and plans to quit smoking (psychological capability), but also reported the weakest beliefs that that smoking is a habitual behaviour (automatic motivation), compared with residents from other districts.

Mean agreement with COM statements to quit smoking by district



There was a trend for smokers living in more deprived areas to report weaker physical capability, physical opportunity, social opportunity and reflective motivation to quit smoking.

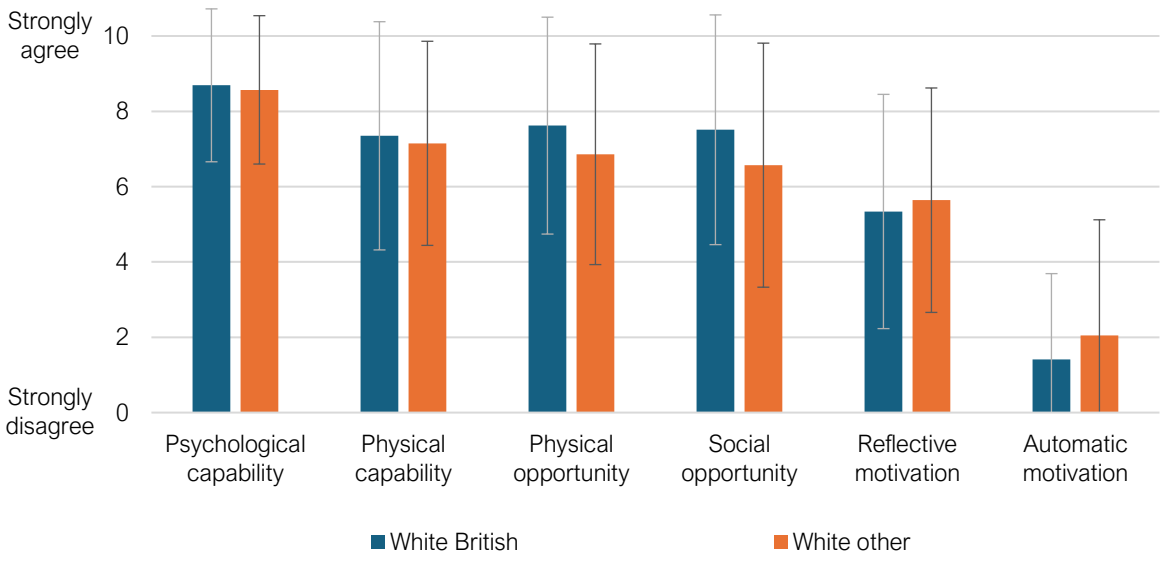
Mean agreement with COM statements to quit smoking by area of deprivation



Research Question 4 (cont.): *Do the barriers and facilitators to smoking cessation vary by demographic and health variables?*

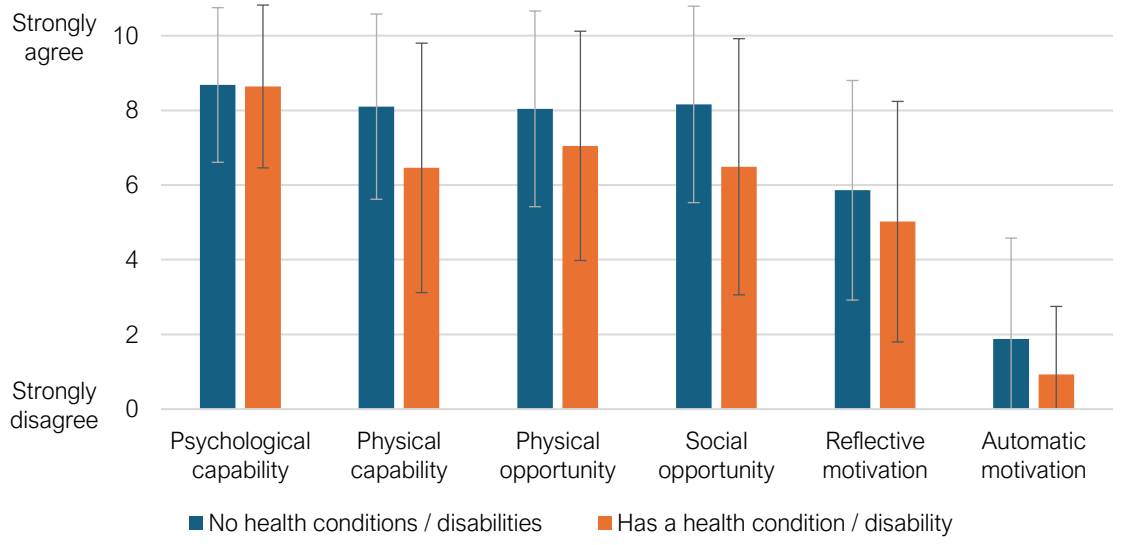
Smokers from White Other ethnic backgrounds reported lower physical capability, physical opportunity and social opportunity to quit smoking than White British smokers. There were only small numbers of smokers from other ethnic minorities, making comparisons between these groups unreliable.

Agreement with COM statements to quit smoking by ethnic background



Smokers who had at least one health condition / disability reported weaker physical capability, physical opportunity, social opportunity, reflective motivation and automatic motivation to quit smoking compared to smokers without a health condition / disability.

Agreement with COM statements to quit smoking by health



Summary – local survey

- Most people we surveyed who used tobacco products smoked either manufactured cigarettes and/or roll-your-own cigarettes
- Smoking behaviours (heaviness of smoking and previous quit attempts) varied with gender, ethnicity, household income, education level, area of deprivation, district and health.
- Key barriers to quitting smoking were reflective and automatic motivation
- Living in more deprived areas, and/or Fenland or Huntingdonshire appeared to be associated with more barriers to quitting smoking
- People from White Other ethnic backgrounds and those with a health condition / disability also appeared to experience more barriers to quitting smoking

The next phase of the research was to gather qualitative insights from Cambridgeshire residents who are current smokers.

Based on our survey findings, we targeted smokers living in Huntingdonshire and/or Fenland. We sought to recruit a mix of ages and genders, and to ensure that we had some representation of smokers from 'White Other' backgrounds and those with existing health conditions.

Qualitative interviews with smokers in Cambridgeshire

We conducted interviews to explore factors influencing smoking behaviour and/or smoking cessation in more depth.

The objectives were to:

(1) explore the factors that influence smoking behaviour
(2) explore barriers and facilitators to smoking cessation
(3) explore barriers and facilitators to uptake of stop smoking services and suggestions about what (if any) other support might be needed

Sampling and recruitment

Individuals were recruited between February – March 2025, using a range of different strategies, including adverts and social media, expressions of interest from participants of the earlier survey and via voluntary and community sector organisations. All participants were offered a £20 gift voucher as a thank you for their participation.

Ethical approval

Ethical approval was granted by Sheffield Hallam University Research Ethics Committee (ID ER68324734) and Cambridgeshire County Council. All participants provided informed consent before participating in the interview.

Data collection

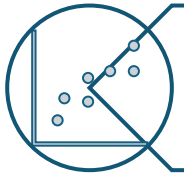
Interviews were conducted via telephone or face-to-face. A semi-structured topic guide was developed with questions exploring thoughts and feelings about smoking, views and experiences of quitting or cutting down, including any previous experiences of accessing stop smoking support. A shortened version of the topic guide was used with participants whose first language was not English, to accommodate the additional time needed for interpretation.

Analysis

Data were audio-recorded, transcribed, and anonymised. Framework analysis was used to code the data [15] using NVivo. The transcripts were coded using the 14 domains of the Theoretical Domains Framework (TDF; 12). Text was coded under the domain that best matched the content. Text relating strongly to more than one TDF domain was coded in both. Themes arising from the data (under each TDF domain) were identified to create sub-categories.

Qualitative interview findings – Participants

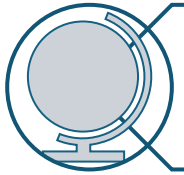
In total, 13 smokers in Cambridgeshire took part in an interview



Participants ranged in age from 22 – 68 years old

Two participants were female; eleven were male

Eleven participants identified as White Other, one as White British and one as Mixed White and Black African ethnicity



White Other participants were Latvian, Lithuanian, Estonian, Polish or Portugese

Two participants lived in Huntingdonshire and eleven participants lived in Fenland

*Are there **capability** barriers (B) and facilitators (F) for quitting smoking?*

Participants reported the following **capability** barriers (B) and facilitators (F):

Knowledge

- Having knowledge about local stop smoking support options and how to access them (F)
- Knowledge about the harms of smoking (F)

> "He would go to GP if he wanted to stop smoking…Because he knows that there is available support with that."

Behavioural regulation

- Consciously reducing how much one smokes (F)

> "I reduced. I had to do it step by step. I did try [NRT] but they didn't really work properly so I used to smoke half a fag, and leave half for later. And then I'd sometimes reduce to like a third at a time, then a quarter at a time and slowly step by step."

* some quotes are in the voice of the translator

*Are there **opportunity** barriers (B) and facilitators (F) for quitting smoking?*

Participants reported the following **opportunity** barriers (B) and facilitators (F) related to **environmental context**:

Environmental context and resources

- Smoking is more likely in social situations (B)
- Smoking is habitually paired with other things e.g. alcohol, food, coffee (B)
- Smoking is more likely in stressful environments or when feeling stressed or bored (B)
- It is a habit to smoke during breaks at work (B)
- The price of cigarettes is a potential deterrent for some people (F) but not for most (B)
- For those for whom price is not a deterrent, this is commonly due to easily accessible unregulated tobacco products via friends or local shops (B)
- Stop smoking support offered in alternative languages is/would be valued by those with English as a second language (F)

"..he started do the factory jobs and they had those short breaks in the factory and so he just started to go with everyone out to have a cigarette like everybody else."

"Like for years it would be, "If it ever gets to £5 a pack, I'm going to quit." And then of course it gets to £5 a pack and you're like, "I'll just carry on." And then it's like, "Well, if it ever gets to £10 a pack, I'll quit." It's gone beyond £10 now."

"somehow magically you can find the money for cigarettes, because it's not that expensive in our unregulated shops…So if he will have to buy cigarettes from normal shop then of course he wouldn't smoke because he wouldn't be able to afford £15 per pack, so he definitely wouldn't smoke then. Just because he can get here much cheaper, that's why he smokes."

* some quotes are in the voice of the translator

*Are there **opportunity** barriers (B) and facilitators (F) for quitting smoking?*

Participants reported the following **opportunity** barriers (B) and facilitators (F) related to **social influences**:

Social influences

- Influence of older adults/young peers on starting to smoke (B)
- Smoking as a social norm – everyone around you smokes (B)
- Social pressure to smoke/not to quit (B)
- People smoking around you makes you crave it (B)
- Influence of family member encouraging you to stop smoking (F)
- Wanting to stop smoking to be a good role model parent (F)
- Positive or negative perceptions of local support services (F/B)
- Desire for support from a person with firsthand experience of quitting – more credible source (F)
- Influence from social media influencers portraying myths about smoking not being harmful (B)

"He doesn't think at the moment he doesn't know anyone who is not smoking".

"And she started to smoke again because everyone around her was smoking, so she started smoking."

"you know, I feel like if it was from an actual person who is addicted, who... had a heavy addiction to smoking, they can actually feel it. You can feel someone struggling and they've been through it rather than someone going, *Oh, stop smoking...* that person, they've never smoked in their life."

"She's [family member] tried [to convince me] numerous times, like *you need to cut down, you need to make it last you, you can't afford*."

* some quotes are in the voice of the translator

*Are there **motivation** barriers (B) and facilitators (F) for quitting smoking?*

Participants reported the following **motivation** barriers (B) and facilitators (F):

Beliefs about capabilities

- Belief that you don't need help to stop (B)
- Belief that stopping smoking is hard (especially for those who have been smoking a long time) (B)
- Belief that stopping smoking is easy because you are not highly dependent (F)
- Belief that accessing NRT is easy (F)

Intentions

- Desire to quit (F)
- Lack of readiness to quit (B)

Optimism/Pessimism

- Belief that its too late to stop smoking (B)
- Beliefs about how effective stop smoking support would be (B/F)

"...it's like, I'm sick of it but I'm not ready…The problem is you have to actually want to do it. If you're half-arsed about it, sorry, or your half bothered or... you're only half serious, you won't achieve it."

"I don't know. Have to be like more stable I think, you know, like in life."

"I cannot say that I don't want the support. But really I don't think I'll be looking for it... Because I know that I can do it, you know?"

"he said yeah, he did think about [replacing cigarettes with vapes] but … then he looked at his friends who tried as well to stop smoking with vapes and they still smoking and so he thought it was quite pointless."

"But I'm a bit hesitant because I've been smoking for so long, it stressing just to think about it."

* some quotes are in the voice of the translator

*Are there **motivation** barriers (B) and facilitators (F) for quitting smoking?*

Beliefs about consequences

- Beliefs about negative short-term health effects of smoking (F)
- Beliefs about the long-term health risks of smoking (F)
- Questioning information about the health risks of smoking (B)
- Seeing others smoke and not have health consequences (B)
- Concern about weight gain associated with quitting (B)
- Negative beliefs about risks of using vapes and other NRT products (B)
- Concern about the quality or ingredients in unregulated cigarettes (F)
- Beliefs about the health benefits of quitting (F)
- Fitness as a reason to stop smoking (F)

"Oh, there's a lot of health risk. Yeah, there is a lot…because to be fair they do warn you on the baccy pouches and all that... I think it's just ignored."

"I've got mates that have had grandparents that smoke 80 fags a day...and they've done that up into their 80s...If you eat a lot of food, you're going to get fat. If you smoke a lot of fags, you're going to die from it eventually. But if you do things in moderation, then you should be all right. Mostly."

"the reason why he's smoking because it supresses his appetite and… he's afraid that if he's going to stop smoking he's going to eat a lot of food."

"It's dodgy baccy because it's so cheap, you don't know what else is in that baccy."

* some quotes are in the voice of the translator

*Are there **motivation** barriers (B) and facilitators (F) for quitting smoking?*

Emotion

- Regret about relapsing (B)
- Anxiety about quitting (B)

Reinforcement

- Disliking the smell and/or taste from smoking (F)
- Not feeling pleasure from cigarettes (F)
- Relaxing benefits of smoking / stress relief (B)
- Positive or negative experiences of smoking (B/F)
- Positive or negative experiences of using NRT or vapes as a quitting aid (B/F)
- Positive or negative experiences of previously trying to quit (B/F)
- Positive or negative experiences of having accessed SSS (B/F)

"It's kind of like a feeling of relief…sometimes it's like an escapism kind of thing, like you can escape because you need to go and smoke. So you can extract yourself from an environment."

"I've tried [NRT] before but they didn't really do much. I thought it was just a waste of money. Like I used the patches on my arm, I used the chewing gum... It's weird feeling. I tried those- One of those pouches you put in your teeth- Not in your teeth but by your gums or something. Still, nothing's real- As a fag really unfortunately. It's not the same thing."

"It's something that I can kind of depend on, it's something that I know is always going to be you know, relaxing to me."

"…he would rather never touch the vape. Because he feels like he started having problems with his lung after he started to smoke vape[s]."

"Yeah, he feels even worse, you know, when he starts to smoke [again]… psychologically you feel worse because *oh why did I*… regret."

* some quotes are in the voice of the translator

What did participants think would help smokers like themselves to quit smoking or access stop smoking support?

We asked participants to make their own suggestions about what was needed to support smokers. Suggestions were:

- Stop smoking services should be delivered by someone who has lived experience of quitting.
- Medical professionals are a credible source for some people, but some participants struggled with trust and engagement in NHS services.
- Advertising, messaging and promotions should be digital as that's where most people will see them – mainly social media.
- Legislation is needed to remove access (e.g. raising minimum age of sale, tackling unregulated cigarette sales).
- Environmental restructuring is needed including a ban in all public places (even outdoor hospitality seating areas).
- Information about how to access stop smoking services is needed in different languages (and ideally the service should be delivered in alternative languages)
- Distraction is a useful strategy – replacing the behaviour with something else.

Summary – interviews

We interviewed 13 smokers who live in Cambridgeshire and identified key capability, opportunity, and motivation barriers and facilitators for quitting smoking.

Capability

Consistent with our earlier survey findings, participants reported relatively modest capability barriers to quitting smoking. Most participants understood the harms and health risks associated with smoking and were confident that they knew where or how to access local smoking cessation support. Many had firsthand experience of previously cutting down or trying to regulate how much they smoked, although often admitted that they found this much more difficult in certain settings.

Opportunity

Participants described environmental influences which influenced them to smoke – these included socialising, times of stress and in workplaces where regular breaks were typical. Another environmental factor was the accessibility and affordability of unregulated cigarettes, sometimes via personal contacts but commonly from local shops. This meant that cost was not a barrier to smoking for most, although a small number said the price of cigarettes had made them consider cutting down.

Socially, participants were influenced by friends and family, often having started smoking at a young age and with most people around them smoking, particularly older relatives. Smoking was therefore socially normalised. Being around smokers also made it harder to resist. However, some participants cited family roles (e.g. protecting their children from smoking) as a reason to quit. Others recalled occasions when family members (older relatives or spouses) had tried to encourage them to quit, although this had not always been effective.

Participants suggested that someone with lived experience of having smoked and quit themselves was the best source of potential support. Several suggested a need for smoking cessation support delivered and promoted in alternative languages.

Summary – interviews

Motivation

Participants described the perceived relaxation and stress relief benefits of smoking, although many admitted there was nothing they directly enjoyed about it anymore and it was just a habit, and some actively disliked it citing the taste and smell as unpleasant.

The majority of participants expressed a keen desire to quit smoking, but many did not feel “ready”. Participants varied in their beliefs about how easy or difficult quitting would be. Some suggested that they had quit before and could do so again; some believed that they wouldn’t need any formal support. Others thought that a long history of smoking meant they were more strongly addicted and that this would make quitting harder or that it was “pointless” to try.

Participants expressed concern about the short-term and long-term health consequences of smoking, cited as reasons in favour of quitting. Health concerns were accompanied by concerns about the unknown contents and ‘quality’ of unregulated cigarettes and tobacco. However, many were also anxious about the short-term consequences of quitting, such as stress, social isolation or weight gain.

Some participants also expressed concern about the contents of vaping products and some cited negative experiences of previously trying to quit, using NRT products or vapes. Nevertheless, they also held positive beliefs about the benefits of quitting, with improved psychological and physical health being an anticipated benefit of quitting, alongside aspirations of improved physical fitness.

Rapid evidence review of interventions

We conducted a rapid evidence review to identify what types of interventions have been implemented to promote or support the uptake of community-based smoking cessation services and programmes (excluding those delivered in clinical settings).

Searches

We conducted systematic searches in electronic bibliographic databases, using relevant search terms for the population (e.g., smokers, adults, etc.), terms for the intervention (e.g., smoking cessation, stop smoking service, etc.) and terms for the outcome (e.g., uptake, promotion etc.). Studies were included if they reported an intervention or initiative to increase uptake or attendance of any type of smoking cessation support amongst non-clinical populations in non-clinical settings.

Data extraction

Data relating to the content of the intervention was extracted and classified using the Behaviour Change Wheel [2] and the BCT taxonomy [13]. Data were managed in Covidence and Excel.

Description of included studies

In total, 18 studies were included in the review.

- 10 studies were conducted in the United States, 5 in Hong Kong, one in the UK, one in Vietnam, one in Australia and one in the Netherlands.

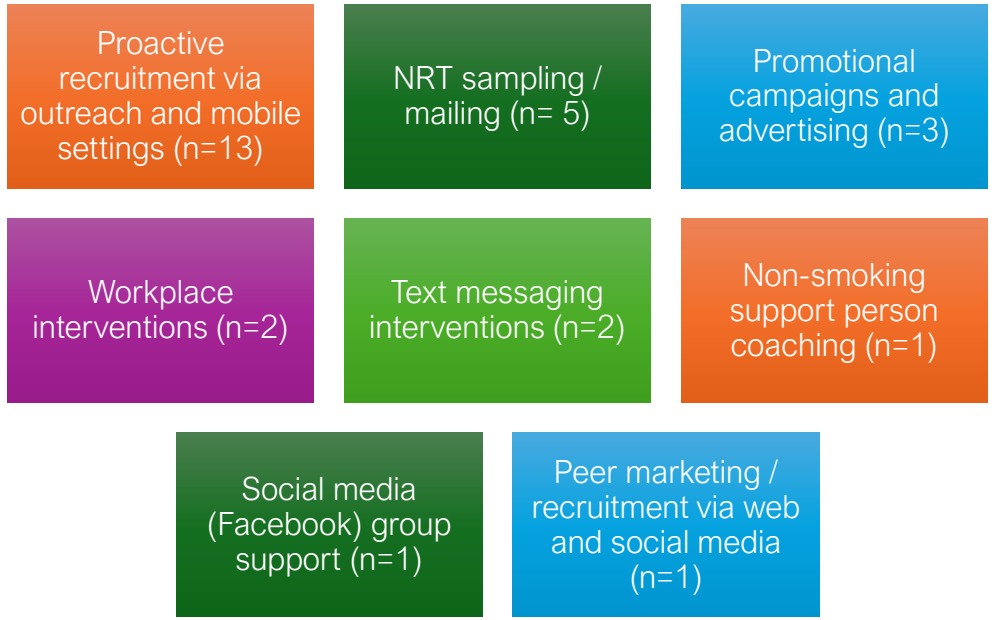
- 8 studies targeted any smoker in the community, 5 targeted smokers from a specific ethnic minority group, 2 targeted rural smokers, and one targeted parents who smoke. 3 studies targeted smokers in specific settings e.g. workplaces or food banks.

Studies aimed to promote uptake of a range of smoking cessation services or programmes (with some promoting uptake of more than one option based on participant choice).

- 9 studies were promoting uptake of smoking cessation ‘Quitlines’, 4 were promoting uptake of an ethnic minority-specific smoking cessation service, 3 were promoting community-based stop smoking services, 2 were promoting uptake of workplace smoking cessation initiatives, 2 were promoting web-based smoking cessation programmes, one was promoting a self-help intervention, and one was promoting uptake of a parent-tailored telephone counselling programme.

Types of interventions

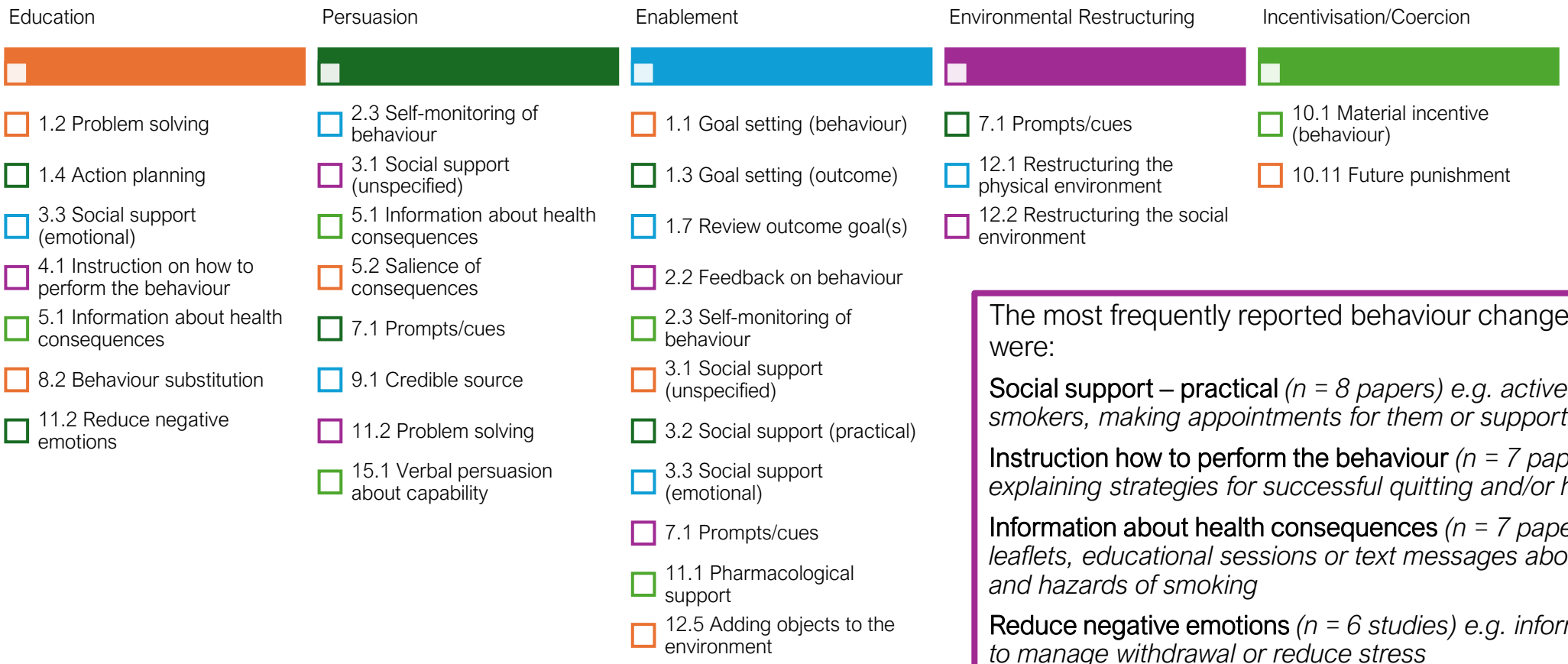
A variety of approaches had been used to promote uptake of smoking cessation programmes:



Using the behaviour change wheel, we identified five **intervention functions** that were reported as effective in promoting uptake of smoking cessation programmes.

- **Education** (used in 16 studies) – *intervention components that aimed to increase knowledge or understanding about smoking cessation and/or the support available to participants*
- **Persuasion** (used in 8 studies) – *intervention components that used communication to induce positive or negative feelings or stimulate action towards uptake of smoking cessation programmes*
- **Enablement** (used in 14 studies) - *intervention components that support smokers to take up the offer of smoking cessation services and programmes*
- **Incentivisation/Coercion** (used in 3 studies) – *intervention components that create an expectation of reward or punishment associated with uptake of a smoking cessation programme*
- **Environmental Restructuring** (used in 3 studies) – *intervention components that changed the physical or social context around a smoker to support them to uptake a smoking cessation programme*

Behaviour change techniques used in interventions to promote uptake of smoking cessation services



The most frequently reported behaviour change techniques were:

Social support – practical *(n = 8 papers) e.g. actively referring smokers, making appointments for them or supporting them to enrol*

Instruction how to perform the behaviour *(n = 7 papers) e.g. materials explaining strategies for successful quitting and/or how to use NRT*

Information about health consequences *(n = 7 papers) e.g. written leaflets, educational sessions or text messages about the health risks and hazards of smoking*

Reduce negative emotions *(n = 6 studies) e.g. information about how to manage withdrawal or reduce stress*

Pharmacological support *(n = 6 studies) e.g. providing NRT patches, lozenges and/or gums, with supply ranging from 1-week to 12-week supply*

Summary of rapid evidence review

- We conducted a rapid evidence review of interventions designed to support uptake of smoking cessation services and programmes.
- Overall, there was evidence that interventions utilising a range of intervention functions (particularly education, persuasion and enablement) are effective at increasing uptake of smoking cessation services.
- Many interventions included in the review provided smokers with education about the key ***reasons for quitting*** and/or ***how to quit*** (including what support was available to them locally) but they often combined this with educational content to ***address common concerns and build coping skills amongst smokers*** e.g. about how to cope with cravings, manage side effects of NRT or reduce stress and triggers that might prompt relapse.
- Interventions proactively sought out smokers in their communities (e.g. culturally-specific groups, workplaces, online communities, or local smoking 'hotspots'). They used methods including ***brief advice*** and ***provision of free NRT*** and where possible made ***active referrals***, sometimes followed up by smoking cessation counsellors for more in-depth "persuasion".
- Interventions were made more persuasive by using ***relatable messengers*** (other smokers, people from the same community) and ***engaging smokers in two-way conversations*** to help address their concerns and understand their individual goals.

Developing our intervention recommendations

Smoking and/or quitting smoking is a complex behaviour, influenced by a wide range of barriers and facilitators. No single intervention is likely to address all possible influences at once, and they may also vary between individual smokers. Acknowledging this, we used the Behaviour Change Wheel [2] to make a range of theory-informed intervention recommendations for promoting smoking cessation in Cambridgeshire.

Creating a heatmap of effective behaviour change techniques

- We considered all the barriers and facilitators identified for quitting smoking in terms of 'Mechanisms of Action' based on the Theory and Techniques tool [3].
- We then used the tool to match the intervention strategies used by the interventions identified in our rapid evidence review against our identified barriers and facilitators.
- We also considered what additional behaviour change techniques the tool showed us could be effective for addressing our identified barriers and facilitators, based on wider evidence.
- Based on our survey and interview findings, we developed a long list of potential intervention ideas that could address the barriers and facilitators identified for quitting smoking in Cambridgeshire.
- Using the APEASE evaluation criteria [2], we explored the likely acceptability, practicality, effectiveness, and affordability of these interventions (both from the perspective of the smoker, and those who would deliver the intervention), and considered whether receiving and/or delivering these interventions were likely to result in unintended consequences or impact on inequalities.
- We also discussed our ideas with local stakeholders, to get their views on likely effectiveness, practicality and acceptability, and any other relevant local contextual information.

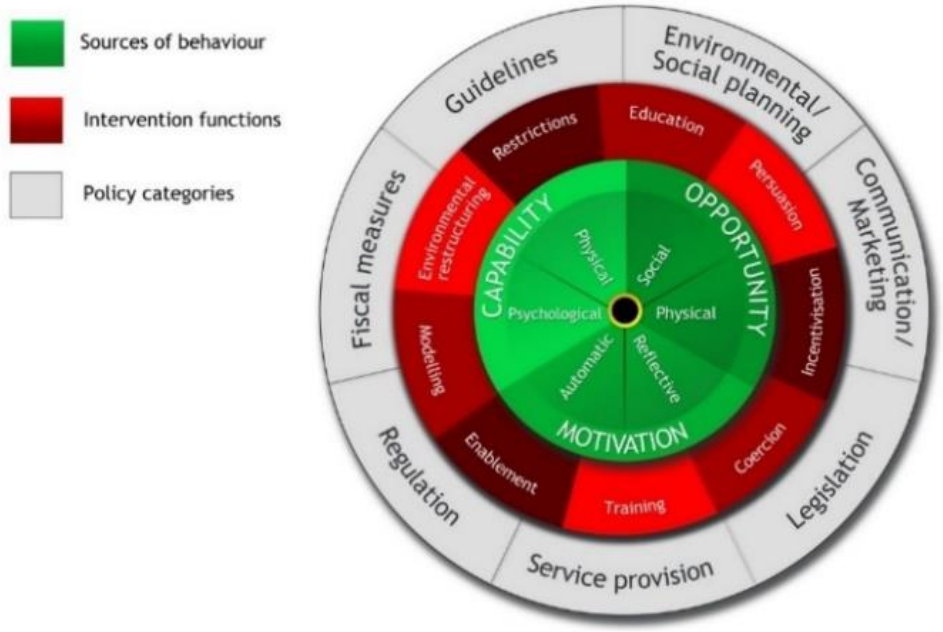
Using the behaviour change wheel

After shortlisting possible interventions, we used the Behaviour Change Wheel [2] to develop a set of theory-informed intervention recommendations for promoting smoking cessation in Cambridgeshire.

We matched the types of intervention functions (red circle) that are likely to address the identified barriers and facilitators for quitting smoking (green circle).

We also matched the types of policy categories that can help to deliver those identified interventions (grey circle).

We describe the content of the intervention recommendations in terms of its Behaviour Change Techniques (BCTs), which are the 'active ingredients' of the intervention [13].



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Intervention recommendation 1: Developing smokers' intentions or readiness to quit

A considerable number of smokers who took part in our survey or an interview expressed low intentions to quit smoking. Many of the smokers we interviewed said they wanted to quit but expressed hesitancy about how ready they were to do so. Our first recommendation is therefore an intervention to support smokers to develop the intention or perceived 'readiness' to quit smoking. Whilst more work would be needed to determine the specific content and mode of delivery for such an intervention, it should include:

- Supporting smokers to consider personal reasons for quitting e.g. health consequences of smoking, social consequences (e.g. identity as a parent) and explore the pros and cons of quitting versus continuing to smoke
- Problem-solving concerns or anxieties about quitting (e.g. weight gain, cravings and triggers, stress and mood)
- Providing opportunities to learn and develop coping strategies and skills for quitting, e.g. through practice quit attempts or a graded approach to cutting down
- Improve knowledge about how to quit and the support available from SSS (with active referral where possible)

Identified needs	Behaviour change wheel	Key behaviour change techniques
Improving beliefs about the positives of and/or reasons for quitting Reducing anxiety about quitting (either hypothetical or based on previous experiences) Increasing beliefs about one's capability to quit smoking Increasing knowledge and skills regarding how to quit	**Policy category**: Service provision **Intervention functions:** Education, Persuasion, Training, Enablement	5.5. Anticipated regret 9.2. Pros and cons 9.3. Comparative imagining of future outcome 13.5 Identity associated with changed behaviour 15.1. Verbal persuasion about capability 15.2. Mental rehearsal of successful performance 15.3. Focus on past success 4.1. Instruction on how to perform behaviour 11.2 Reduce negative emotion 8.1. Behavioural practice/rehearsal 8.7. Graded tasks

APEASE evaluation criteria:

This intervention recommendation addresses a large range of the barriers and facilitators highlighted by smokers in our exploratory work. The idea is **acceptable** to professional stakeholders in principle, but further work would be needed to understand whether it was sufficiently **acceptable** to facilitate recruitment of current smokers who are hesitant about quitting. Further discussion would also be needed to understand fully the **practicality** of delivering this intervention. There would be significant work to develop this new intervention, and implications for **affordability**. Consideration to delivery of such an intervention in alternative languages would enhance its likely **equity**. Nevertheless, our heatmap evidence suggests that interventions such as this can be **effective** at increasing intentions to quit and increasing uptake of smoking cessation services. Positive **side effects** could include improving the emotional wellbeing of smokers in the community.

Intervention recommendation 2: Promoting the effectiveness of local stop smoking support

In our survey findings, only 10% of those who had previously tried to quit or cut down smoking had accessed local stop smoking support, despite there being a range of services available in Cambridgeshire. Meanwhile, our interview findings suggested that smokers were aware of services, but that some had reservations about their effectiveness and/or suitability for them personally. Messaging and/or communications about the effectiveness of smoking cessation support available throughout Cambridgeshire could potentially increase uptake of stop smoking services and encourage more smokers to try and quit. Communications could be delivered in a variety of formats, such as community-based educational sessions, social media promotions and/or other advertising. To address key barriers, it should seek to include:

- Information about how many people have successfully quit using the support available and how accessing support improves your chances of a successful quit
- Normalising repeat quit attempts i.e. encouraging those who have previously tried to quit to try again
- Using credible sources to portray the messages e.g. ex-smokers, previous users of the service, relatable role models
- Delivery of messages in alternative languages
- Messages that are co-designed with different target groups (content and mode of delivery) may help support the reach and engagement with such messages

APEASE evaluation criteria:

Professional stakeholders indicated that this would be an **acceptable** intervention, and our findings suggest that it would be **acceptable** to smokers, although this would be contingent on further developing appropriate messaging and content. Such an intervention is likely to be **practical** and **affordable** (although this could be dependent on mode of delivery, scale and reach) and similar interventions included in our evidence review were shown to be **effective** at increasing uptake of a range of different types of smoking cessation services. We would not anticipate significant unintended **side effects** from such an intervention. Translation and/or delivery of the intervention content in several other languages would be recommended to ensure inclusion **(equity).**

Identified needs	Behaviour change wheel	Key behaviour change techniques
Knowledge about local stop smoking support options and how to access them Increasing positive perceptions and beliefs (and/or reducing negative beliefs) about the acceptability of smoking cessation services and their likely effectiveness Positive social norms about quitting smoking Perceived social support to stop smoking	**Policy category**: Communications / Marketing; Service provision **Intervention functions:** Education, Persuasion	3.1 Social support (unspecified) 4.1 Instruction on how to perform the behaviour 5.1 Information about health consequences 6.2. Social comparison 6.3. Information about others' approval 9.1 Credible source

Intervention recommendation 3: Smoking harm reduction in the workplace

A key theme from our interviews with smokers was that being around others who are smoking, and in situations where there are triggers and cues to smoke was a substantial barrier to quitting. The workplace was one such setting commonly identified by participants, especially those who worked in routine and manual occupations and/or had structured work breaks. An intervention designed to support people to reduce the amount they smoked at work would serve as a harm reduction initiative and a positive first step towards quitting completely. We recommend an intervention designed to support smokers to identify triggers and cues to smoking, set goals to reduce their smoking and develop action plans to overcome any barriers that might prevent them from meeting that goal. A graded approach, whereby smokers reduce their smoking incrementally over time could be considered, along with practical social support from employers where feasible.

APEASE evaluation criteria:
Our evidence review showed that outreach interventions delivered in workplaces were effective at supporting smokers to uptake smoking cessation support. Such an intervention could be tested on a small scale to assess its **practicality** and then rolled out further subject to feedback and outcomes. **Acceptability** testing could be useful along with feedback on the idea from employers. Intervention materials could be developed with a modest budget, appropriate to proof-of-concept testing making that initial testing **affordable**. In terms of **equity**, there would be considerations around how to maximise the accessibility of the intervention for smokers throughout Cambridgeshire. However, if proof of concept testing was successful, this intervention could be made more widely available, not necessarily limited to workplaces. Such an intervention could also be adapted to incorporate other public health behaviours, such as physical activity, diet and/or alcohol consumption, showing potential for widespread positive **side effects**.

Identified needs	Behaviour change wheel	Key behaviour change techniques
Improving capacity to manage triggers and cues to smoking in high prevalence environment Managing social influences for smoking Improving confidence in the capability to cut down and manage smoking behaviour	**Policy category**: Service provision **Intervention functions:** Education, Training, Enablement	1.1 Goal-setting (behaviour) 1.2. Problem solving 1.4. Action planning 2.3. Self-monitoring of behaviour 4.2. Information about antecedents 7.1. Prompts/cues

Intervention recommendation 4: Messaging about the risks of unregulated cigarettes

Amongst the smokers we interviewed, all but one were smoking 'unregulated' cigarettes or tobacco, which they described as widely accessible via local shops and/or social contacts. Many expressed concern about the quality and ingredients in these products, with some recounting experiences of having been physically ill from using them. Some also suggested that the low price of these products meant that they smoked more. Messaging and/or communications to convey the risks and wide-ranging negative consequences (health, social and environmental) of buying unregulated products could encourage more smokers to consider cutting down on how much they smoke, or potentially switching to e-cigarettes. Communications should include clear and accessible information about how to access support for cutting down, switching, or to discuss any concerns about smoking. Messages should be evaluated to understand their effects (intended and unintended).

APEASE evaluation criteria:
Although this intervention idea addresses fewer barriers than our other recommendations, it has the potential to tackle a prominent theme from our interviews around the affordability and easy accessibility of unregulated cigarettes. Such an intervention would be novel and therefore its potential **effectiveness** is unknown. **Acceptability** testing would be advised to explore how smokers might respond to such an intervention and ensure that it did not have unintended negative **side-effects** (e.g. disproportionally increasing anxiety for those on lowest incomes, for whom only unregulated cigarettes are affordable). However, it is potentially **affordable** and **practical** to test this concept.

Identified needs	Behaviour change wheel	Key behaviour change techniques
Need to reduce consumption of cigarettes facilitated by easy affordability Concern about the quality or ingredients in unregulated cigarettes	**Policy category**: Communications / Marketing **Intervention functions:** Education, Persuasion	5.1 Information about health consequences 5.2. Salience of consequences 5.3. Information about social and environmental consequences 5.5. Anticipated regret

Conclusions

This mixed-method research has identified key capability, opportunity, and motivational barriers and facilitators for quitting smoking amongst adult smokers in Cambridgeshire. Factors influencing smoking, quitting and/or cutting down are wide-ranging and complex and will vary between different smokers. A range of different interventions are needed to address the barriers and facilitators to quitting or cutting down smoking.

We have made a series of recommendations about how to support smokers in Cambridgeshire, including both harm reduction approaches and support to access stop smoking services. These recommendations include supporting smokers to develop the 'readiness' to quit, supporting cutting down on smoking in the workplace, promoting the effectiveness of stop smoking services and messaging and communications about the risks associated with unregulated cigarettes.

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