

Breaking Free from Smoking: A Novel Digital Smoking Cessation Intervention for Offenders in UK Prisons

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Introduction: The level of smoking cessation support across UK prisons is variable, with most offering pharmacological support, such as nicotine replacement therapy. However, with a complete smoking ban in prisons in England now imminent, additional standardised behavioural support is necessary to help offenders go smoke-free.

Aims: This study used the Behaviour Change Wheel to aim to develop the content of an online smoking cessation intervention for offenders, with consideration of their capability, motivation and opportunity for behaviour change.

Methods: This was an intervention development study. The Behaviour Change Wheel was used to map cognitive, behavioural, physiological and social targets for the intervention, onto appropriate intervention techniques for inclusion in the smoking cessation programme for offenders.

Results: Psychological capability, social opportunity and reflective and automatic motivation were identified through deductive thematic analysis as areas of change required to achieve smoking cessation. A total of 27 behavioural change techniques were chosen for this smoking cessation intervention and were mapped onto the Lifestyle Balance Model which provided the theoretical basis on which the components of the programme are conceptualised. This included strategies around increasing motivation to quit, anticipating smoking triggers, modifying smoking-related thoughts, regulating emotions, managing cravings, replacing smoking and rewarding nicotine abstinence and adopting a healthier lifestyle.

Conclusions: Through the utilisation of the Behaviour Change Wheel, the development process of this digital smoking cessation intervention was achieved. Further research is planned to evaluate the clinical effectiveness of this intervention and to explore how the programme is implemented in practice within prison settings.

Introduction

Smoking in Prisons

Worldwide, approximately one billion people smoke tobacco, and over five million deaths per year are directly attributable to tobacco use (World Health Organization, 2015, 2016). In the UK specifically, figures from 2015 indicate that 16.9% of the adult population smoke (Office for National Statistics, 2017), and perhaps even more concerning is that the prevalence of smoking in UK prisons is estimated to be as high as 80% (Public Health England, 2015). Evidence suggests that over a quarter of non-smokers may start smoking on entering prison (Kauffman, Ferketich, Murray, Bellair, & Wewers, 2011), and

that around half of those who already smoke may increase the frequency of their smoking during their time in prison (Cropsey, Linker, & Waite, 2008). Some of the reported reasons behind this increased rate of smoking within prisons include using smoking for stress management and as a social aid (Butler, Richmond, Belcher, Wilhelm, & Wodak, 2007; Richmond et al., 2009).

Currently, a phased smoking ban is being rolled out across all prisons in England, with some prisons already implementing partial bans (prisons in Scotland, and more recently in Wales, have already introduced full smoking bans). However, considering the high rate of smoking within prisons, and the use of smoking as a coping

strategy in the stressful prison environment (Butler et al., 2007; Public Health England, 2015), it is evident that an intervention accessible across the prison population may be beneficial as a way to help manage symptoms associated with smoking cessation, such as nicotine cravings and social issues.

The prison setting may be an ideal location to deliver a smoking cessation intervention as, despite many offenders starting to smoke during their incarceration (Butler et al., 2007; Richmond et al., 2009), evidence suggests that many offenders are interested in stopping smoking, and that they understand the risks associated with continuing to smoke (Kauffman et al., 2011). Unfortunately, however, introducing a smoking ban may not be sufficient. Whilst a ban may reduce the prevalence of smoking within prisons, without the implementation of an effective smoking cessation intervention delivered alongside it, offenders have been reported to return to smoking following their release from prison (Clarke et al., 2013; Lincoln et al., 2009; Pezzino, Remington, Anderson, Lantz, & Peterson, 1992). A complete, or even partial, smoking ban may therefore be ineffective without appropriate smoking cessation support being in place.

In UK prisons, offenders are typically offered pharmacological support (Public Health England, 2015), including nicotine replacement therapy (NRT), such as nicotine patches or lozenges, to help them attempt to quit smoking (Condon, Hek, & Harris, 2008; MacAskill & Hayton, 2006). So far, this approach has demonstrated favourable outcomes for the use of pharmacological support, with evidence suggesting that approximately 54% of offenders who had set a quit date continued to abstain from smoking at the four week follow-up (National Health Service, 2014). Further evidence suggests that the combination of NRT and behavioural support (including keyworking and group sessions), compared to no support, may yield the most favourable outcomes in increasing smoking cessation (Stead et al., 2016; West & Stapleton, 2008). However, prisons may differ in the use of trained staff and smoking cessation specialists; and whilst the provision of services in some prisons is good, the needs of other prisons may not be met by current smoking cessation services (Public Health England, 2015). Furthermore, interviews with stakeholders revealed that the specific environmental context of prisons – including frequent changes to commissioned services, and issues such as funding cuts, and changes to job roles – may affect the implementation of smoking cessation services (Eadie, MacAskill, McKell, & Baybutt, 2012). One way to overcome the potential difficulties faced with providing smoking cessation support within prisons may lie in the use of computer-assisted interventions.

Computer-Assisted Interventions

Computer-assisted interventions are a way of delivering psychosocial techniques via digital technologies such as the internet. Such digital interventions may be supervised

and can be delivered either in a group setting or individually (Andrews, Cuijpers, Craske, McEvoy, & Titov, 2010). In this way, digital interventions may be more cost-effective than receiving one-on-one support, as multiple users can access the intervention at any one time (Carroll & Rounsaville, 2010; Olmstead, Ostrow, & Carroll, 2010). Additionally, digital interventions are delivered in a highly standardised manner, thus ensuring treatment fidelity in comparison to the variance often seen in traditional human-facilitated interventions (Borrelli et al., 2005; Carroll, 2013; Perepletchikova & Kazdin, 2005).

A Cochrane review of the available research literature has suggested online smoking cessation interventions are effective in helping people stop smoking, for at least up to six months (Civljak, Sheikh, Stead, & Car, 2010). However, at present there appears to be no evidence of online smoking cessation interventions being implemented within UK prisons.

One online intervention which has been successfully implemented within a prison setting is Breaking Free Online. Breaking Free Online is an online treatment and recovery programme for substance misuse, including tobacco use and co-morbid mental health difficulties. The programme incorporates a range of evidence-based intervention techniques (Dugdale et al., 2016), including approaches derived from cognitive behavioural therapy (Beck, Wright, Newman, & Liese, 2011; Beck, 2011), mindfulness (Bowen, Witkiewitz, Chawla, & Grow, 2011; Kabat-Zinn, 2005; Marlatt, Bowen, Chawla, & Witkiewitz, 2010), and relapse prevention (Marlatt & Donovan, 2005). Intervention techniques within Breaking Free Online are mapped onto the Lifestyle Balance Model (Davies, Elison, Ward, & Laudet, 2015). The Lifestyle Balance Model (Figure 1) is an interactive biopsychosocial domain model, derived from the five factor model used in cognitive behavioural therapy (Greenberger & Padesky, 1995; Williams & Chellingsworth, 2010; Williams & Garland, 2002). Lifestyle is also included as an additional domain within the model, as this relates to other issues which may affect health and wellbeing, such as relationships, accommodation and employment (Davies et al., 2015). The Lifestyle Balance Model has already been effectively used in the behaviour change programme Breaking Free Online, to conceptualise support pathways for substance misuse within community and criminal justice settings (Elison, Humphreys, Ward, & Davies, 2014a, Elison et al., 2014b, Elison, Weston, Dugdale, Ward, & Davies, 2016).

Breaking Free Online is currently being utilised in criminal justice settings in the UK, including prison and probation services. Evidence from mixed-methods analyses suggests that those who completed the programme demonstrated reduced substance use and dependence, and improved quality of life, and some elements of recovery progression within a prison setting (Elison et al., 2016). Additionally, qualitative findings reflected these outcomes and confirmed the suitability of the

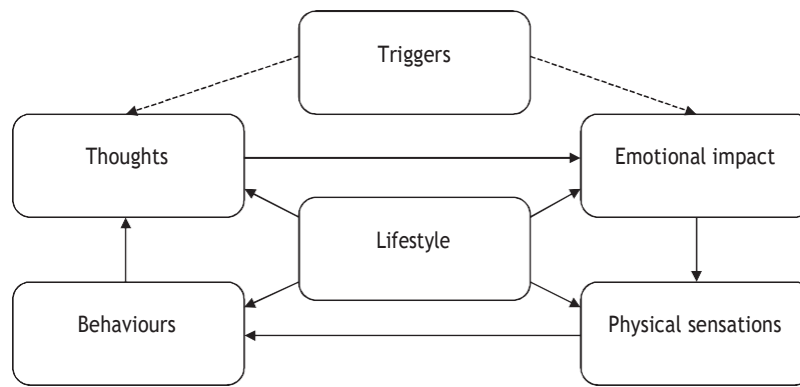


Figure 1
The lifestyle balance model.

intervention within the prison setting (Elison, Weston, Davies, Dugdale, & Ward, 2016; Elison et al., 2016). These findings demonstrate the potential for applying the theoretical underpinnings of Breaking Free Online when designing interventions, including those that focus on other types of behaviour change, such as smoking cessation, within a prison setting.

Whilst Breaking Free Online may provide support for those wanting to quit smoking, tobacco is one of 39 substances targeted by the intervention. Although users may wish to focus on tobacco use, the language of the programme is generic to suit the needs of other substances. Therefore, smoking specific triggers and thoughts for example, are not necessarily addressed by the programme. It is evident that a programme focusing specifically on smoking cessation would be of greater potential benefit to offenders as it could provide tailored information to offenders around smoking-specific difficulties. Using the Lifestyle Balance Model may help to conceptualise smoking behaviours and provide a framework by which to understand and target the difficulties associated with smoking, such as being exposed to cues for smoking in the prison environment and managing nicotine withdrawal symptoms. Therefore, a novel online behaviour change intervention for smoking cessation in offenders in the UK has been developed: Breaking Free from Smoking. This paper describes the development process of this behaviour change intervention, which has been informed by the guidance outlined in the Behaviour Change Wheel (BCW) approach to developing complex behavioural change interventions (Michie, Atkins, & West, 2014).

The Behaviour Change Wheel

The BCW provides guidance on the development of behaviour change interventions (Michie et al., 2014), and is derived from behaviour change theory to ensure that the guidance is systematic and targets key areas for behaviour change. The BCW had already demonstrated success in the development and understanding of other

smoking cessation interventions and support (e.g. Fulton et al., 2016; Gould, 2014). Content of the behaviour change interventions is ascertained through the BCW, utilising evidence-based behavioural change techniques (BCTs). A BCT can be defined as the smallest observable and replicable component of an intervention which can lead to behaviour change (Michie et al., 2013). The latest BCT taxonomy identifies 93 behaviour change techniques, grouped into 16 categories of change, and was developed by a group of health psychologists and other behaviour change experts (Michie et al., 2013).

At the heart of the BCW is a behaviour change model, demonstrating the interaction between the *capability* (C) to perform a desired behaviour, along with the *opportunity* (O) to perform the behaviour, and the individual's *motivation* (M) to perform the behaviour, and how these three determinants (C, O and M) can impact on the likelihood of the desired *behaviour* (B) being performed. This is known as the COM-B model (Michie, van Stralen, & West, 2011), and it allows identification of the components that need to be addressed to achieve the desired behaviour change. The BCW further describes how to select the types of BCTs likely to bring about change, based on an assessment using the COM-B model.

Aims

This study aims to (a) assess offenders' capability, motivation and opportunity for behaviour change regarding their smoking cessation and to (b) use the BCT taxonomy to report the content of an online smoking cessation intervention within this group; Breaking Free from Smoking, utilising the BCW to map out the content of the intervention based on the initial assessment.

Methods

This study used the BCW to develop an online smoking cessation, behaviour change intervention. Detailed below is the process and the methods, derived from the BCW, that were used to complete the stages of developing the clinical content of Breaking Free from Smoking.

Implementation information is also reported for the intervention.

i) Identify what needs to change

The lead author (SD) conducted four focus groups with smoking offenders from prisons across the North of England. A total of 26 male offenders, who identified as current smokers, took part in the focus groups within the prisons, and were asked questions around their perceived triggers to smoking, availability of smoking cessation support, and perceptions of how the ban will affect the prison environment, and those within it. Focus groups were completed as part of a larger research programme, investigating the perceptions of both smoking and non-smoking offenders' towards the smoking ban in English prisons. Approval for this research was granted by the National Offender Management Service on 18th October 2016 (NRC ref: 2016–298). Further approvals were granted by Staffordshire University's ethics committee on 1st March 2017. For further information on the methodology of this research and sample characteristics, see Dugdale et al. ([in preparation](#)).

Qualitative data from the focus group study was recorded onto a Dictaphone. Transcripts were uploaded onto NVivo (NVivo 10, 2012), to support data analysis. Although data collection was combined, this analysis was conducted separately to that described in Dugdale et al. ([in preparation](#)). Data from smoking offenders were coded by SD using deductive thematic analysis and were mapped onto the COM-B model, to identify offenders' physical and psychological capabilities, physical and social opportunities, and reflective and automatic motivations, to understand the barriers specific to offenders in achieving the specified behaviour change. Before data collection, SD noted her assumptions and professional standing in relation to the research, and was aware of her influence on data collection and analysis (Landridge, 2007).

ii) Identify intervention functions

The authors identified the intervention functions that were appropriate to the target behaviour and population, based on the assessment of their capability, opportunity and motivation to change. Intervention functions refer to the ways in which behaviour change may be enacted via the intervention, including education, persuasion, enablement, restrictions, incentivisation, coercion, environmental restructuring, training and modelling. The applicability of the functions identified by the BCW were assessed by the authors using the APEASE criteria, which considers the affordability, practicability, effectiveness, acceptability, safety and equity, given the specific context and population. APEASE criteria are recommended and typically applied to the BCW, to best decide appropriate intervention strategies given the target behaviour and population (Michie et al., 2014). Suitable intervention functions were then mapped onto the identified areas

of behavioural change required from Breaking Free from Smoking.

iii) Identify intervention content

The final stage of the BCW maps out the content of the intervention using the BCT taxonomy. This ensures that the content of the intervention considers the specific problem and the needs of the target population, and is based on the intervention functions assessed as appropriate for this behaviour change. Two of the study's authors (SD and EB), who had completed online training for the delivery of smoking cessation advice with the National Centre for Smoking Cessation Training (NC-SCT: www.ncsct.co.uk), listed the BCTs identified in this smoking cessation advice that mapped onto the intervention functions identified for Breaking Free from Smoking. These authors then discussed the applicability of all identified BCTs for the intervention in relation to APEASE criteria, and mapped out these appropriate BCTs onto the Lifestyle Balance Model, to conceptualise the content and delivery of the intervention.

iv) Implementation information

The Template for Intervention Description Replication was followed to specify the target behaviour regarding when, where and how often this behaviour will be performed, and who provides this intervention. This guidance was developed to improve the reliability of replicating and evaluating interventions by encouraging better description of intervention content (Hoffmann et al., 2014).

Results

i) Identify what needs to change

The COM-B model was used to conceptualise qualitative data from focus groups conducted with offenders to examine their perceptions of smoking and understand how their capabilities, opportunities and motivations may impact upon their ability to achieve smoking cessation within the prison environment. Refer to (Table 1) for a summary of this coding exercise, which provides quotes from the focus group participants to highlight potential barriers to achieving this behaviour change. Examples relating to barriers in psychological capability, physical opportunity, reflective motivation and automatic motivation were reported in the focus groups. *Note that although examples of social opportunity were also apparent from the focus groups, this does not afford itself to an online intervention, but was included within the table, as this information may be of utility for future research.

· *Psychological capability*

Many offenders in the focus group described the difficulties associated with stopping smoking, in particular

Table 1

Areas of the COM-B model mapped onto barriers to smoking cessation in offenders, related intervention functions and BCTs and translation of these BCTs in the intervention

Behavioural Analysis	Area of COM-B	Intervention Function	BCTs (BCT Taxonomy Version 1 Code)	Intervention Description Using BCTs
Perceived difficulty of quitting smoking <p>“Formenicotine’sanaddictionthat’srunningriotinmylife, it’s destroyingmyhealth,andIhaven’treallygotthepowerto quit on my own.”</p> <p>“Peoplenotbeingabletocope,thestressesandstrains of all.”</p> <p>“There’salsoalotofpsychologicalstuffthatgoesonaround smoking as well, it’s not just nicotine.”</p>	Psychological capability	Enablement	Goalsetting(behaviour)(1.1) Problem solving (1.2) Action planning (1.4) Commitment (1.9) Reduce negative emotions (11.2) Education Reattribution (4.3)	Support setting of Specific, Measurable, Achievable, Realistic and Time-relevant (SMART) goals to positively change lifestyle. Prompt identification of barriers to smoking cessation. Prompt performance of smoking cessation and select a quit date. Prompt the development of plan to help avoid and cope with triggers to smoking. Prompt a conscious agreement to become smoke free by a chosen quit date, empowering the user to set their own goals. Provide information and support on how to reduce stress associated with smoking cessation. Prompt identification of perceived causes of smoking behaviour.
Social norms associated with smoking in prison <p>“When you’re forced into a cell with one or up to three other people who are all smokers, it’s really difficult.”</p> <p>“It’s not all just physical sensations you get from smoking, you also have to have somebody you can talk to, somebody that’s willing to sit and listen, and give you advice.”</p>	Social opportunity*	—	—	—

Table 1
(Continued)

Behavioural Analysis	Area of COM-B	Intervention Function	BCTs (BCT Taxonomy Version 1 Code)	Intervention Description Using BCTs
Difficulties associated with smoking cessation services in prisons <p>“They need a good system and structure in place...I’ve been on the waiting list now [for nicotine replacement therapy] for months.”</p> <p>“The products that healthcare are providing at the moment for smoking cessation as well, on the outside a lot of these products cost more than the actual tobacco does. So some people are leaving prison addicted to nicotine replacement.”</p> <p>Discrepancies in the perceptions of stopping smoking</p>	Physical opportunity	Enablement	Pharmacological support (11.1)	Provide information and advice on pharmacological support for offender to use in tandem with the intervention.
“After those first few days I think the health benefits, the confidence that you feel around that improvement within yourself, I think it’s gonna be massive.”	Reflective motivation	Education	Feedback on behaviour (2.2)	Provide feedback on self-assessed impact of smoking on quality of life, health satisfaction, thoughts, emotions and physical sensations.
“My physical health is starting to, sort of, deteriorate. I’m noticing that I’m out of breath a lot, so it is having an impact on my health.”			Information about health consequences (5.1)	Provide information about the health consequences of continuing to smoke.
“I’ve no immediate physical concerns over my smoking, no health issues that I know of.”			Information about social and environmental consequences (5.3)	Provide information about the social and environmental consequences of continuing to smoke.
			Information about emotional consequences (5.6)	Provide information about the emotional consequences of continuing to smoke.
			Information about antecedents (4.2)	Provide information about common triggers of smoking behaviour.
		Persuasion	Salience of consequences (5.2)	Provide information about life-threatening consequences of continuing to smoke.
		Incentive	Discrepancy between current behaviour and goal (1.6)	Highlight any differences between self-assessed smoking cessation behaviour and health goals.

Table 1
(Continued)

Behavioural Analysis	Area of COM-B	Intervention Function	BCTs (BCT Taxonomy Version 1 Code)	Intervention Description Using BCTs
<p>Habitual smoking associated with the prison environment</p> <p>“There’s a lot of stress related problems that you have in a prison environment, stuff that you can’t deal with, it’s outside your control. It forces you to carry on to smoke ‘cause it, like, de-stresses you.”</p> <p>“I smoke more in jail, I think it’s a comfort thing, boredom as well.”</p>	Automatic motivation	Training	Instruction on how to perform a behaviour (4.1)	Provide instruction on how to identify triggers within the environment, and develop action plans to overcome this. Provide training on how to use distraction and mindfulness breathing techniques to reduce stress.
			Behavioural practice/rehearsal (8.1)	Prompt the rehearsal of distraction and mindfulness techniques to manage stress.
			Habit reversal (8.4)	Create weekly plans and schedule in activities to replace smoking behaviours.
		Enablement	Behaviour substitution (8.2)	Schedule activities to replace smoking behaviours.
			Avoidance/reducing exposure to cues for behaviour (12.3)	Provide information on how to assertively refuse the offer of tobacco products, and avoid triggers to smoking.
			Distraction (12.4)	Provide information on how to reduce stress through distraction techniques, rather than through smoking.
			Framing/reframing (13.2)	Challenge incorrect beliefs about the benefits of smoking behaviours.
Incentive	Non-specific reward (10.3)	Provide virtual trophies for length of time smoke free and for number of strategies completed within the programme.		
	(Self) incentive (10.7)	Schedule weekly activities to reward smoking cessation.		
<p>Reflexive responses to smoking cessation</p> <p>“As a smoker, I deal with my anger management problems and stuff like that. When I don’t have my tobacco, or my cigarettes, I feel my stress levels go up, and then my anger starts coming out of me.”</p> <p>“If I’ve not got any nicotine, I’m not good to be around, I won’t speak to anybody, I look at people differently.”</p>	Automatic motivation	Enablement	Self-monitoring of behaviour (2.3)	Prompt assessment of the impact of smoking on quality of life, health satisfaction, thoughts, emotions and physical sensations. Prompt the monitoring of triggers to smoking behaviour.
			Anticipated regret (5.5)	Provide information on consequences of continuing to smoke, for example to health.
			Comparative imagining of future outcomes (9.3)	Provide information on the benefits of being a non-smoker, and the weakening of withdrawal symptoms over time.
		Persuasion	Identity associated with changed behaviour (13.5)	Reinforce identity change from ‘smoker’, to ‘someone who used to smoke’.

the impact of stress on their ability to stay smoke free. There was also some recognition of the psychological factors associated with tobacco addiction, noting that these should also be addressed.

- *Physical opportunity*

Some offenders participating in the focus group reported difficulties in accessing the existing smoking cessation services within their prison. One offender reported that they had been waiting months for NRT, whereas another stated some of the negative effects associated with NRT (for example, addiction to it). The above physical opportunities considered, it was apparent that the existing prison healthcare system was not always able to meet the needs of offenders in supporting their quit attempts.

- *Reflective motivation*

Some offenders in the focus group recognised the perceived benefits associated with smoking cessation, such as improvements to health, and the deleterious impact that smoking had already had on their health. Conversely, others claimed that they had experienced no health difficulties as a result of their smoking. This highlights potential differences in reflective motivations to stop smoking, suggesting it would be beneficial to ensure that appropriate psychoeducation about the consequences of smoking is available to offenders, to help them to make an informed decision to stop smoking or not.

- *Automatic motivation*

Offenders interviewed described how the culture of the prison environment was entangled with smoking, primarily to relieve stress and boredom. Also reported were automatic responses experienced by offenders when they went without cigarettes, such as irritability and heightened anger.

ii) Identify intervention functions

APEASE criteria were used to assess the applicability of the nine intervention functions described in the BCW, given the specific context of prisons. Education, persuasion, incentivisation, training and enablement were judged as the most appropriate functions for this behaviour change intervention. Further coercion was not considered to be acceptable in the context; offenders may already be coerced into changing behaviour through policy change and the smoking ban being imposed in prisons. Restriction and environmental restructuring were judged as being impractical in this context, as prison settings are already highly structured environments and are subject to specific regimes that may not be changed. Restrictions through the smoking ban will also already be in place without the input of this intervention. Furthermore, modelling may not be practical given the mode of delivery.

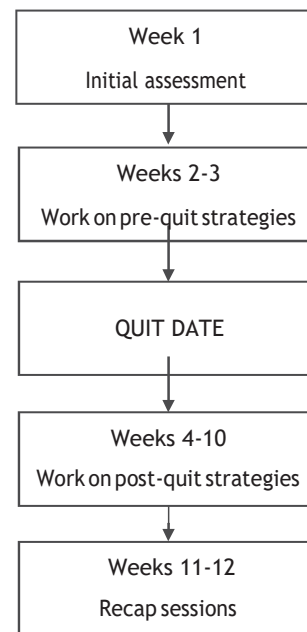


Figure 2

Progress through the breaking free from smoking intervention.

iii) Identify intervention content

The BCW was used to explore the specific BCTs that were linked to the intervention functions identified, and APEASE criteria were used to select the most appropriate BCTs for the intervention. A total of 27 BCTs were chosen for this smoking cessation intervention, with at least one BCT identified within 10 of the possible 16 grouping categories within the BCT taxonomy (Tables 1 and 2). The BCTs identified for inclusion in Breaking Free from Smoking (Table 2) were mapped onto the individual domains of the Lifestyle Balance Model, and were used to inform the content of the strategies targeting situations that could trigger the urge to smoke, smoking-related thoughts, emotional impact, physical sensations (including nicotine cravings), smoking and associated behaviours and lifestyle, located on the appropriate Lifestyle Balance Model domains.

iv) Implementation information

Template for intervention description replication guidelines were used to specify the details of the nature, structure and implementation of the interventions. The results of this exercise are reported in (Table 3).

Discussion

This paper describes the development process of an on-line smoking cessation intervention for offenders in UK prisons, Breaking Free from Smoking. The BCW (Michie et al., 2014) approach to intervention development was used to guide this process, drawing upon evidence from qualitative focus group data and the published literature,

Table 2

Behaviour change techniques mapped onto the lifestyle balance model and other areas of the breaking free from smoking programme

Component of the Lifestyle Balance Model	Intervention Description	Behaviour Change Techniques (and Code from BCT Taxonomy Version 1)
Triggers	Anticipating triggers that could lead to smoking. Creating action plans to avoid or cope with these high-risk situations.	Problem solving (1.2); action planning (1.4); instruction on how to perform a behaviour (4.1); information about antecedents (4.2); behavioural practice/rehearsal (8.1); avoidance/reducing exposure to cues for the behaviour (12.3) Reattribution (4.3); framing/reframing (13.2)
Thoughts	Evaluating beliefs around smoking behaviours, including reasons for smoking, and challenging any incorrect beliefs.	Instruction on how to perform a behaviour (4.1); reduce negative emotions (11.2); distraction (12.4)
Emotional impact	Developing more appropriate coping strategies for stress reduction by practising distraction techniques.	Instruction on how to perform a behaviour (4.1), Behavioural practice/rehearsal (8.1), reduce negative emotions (11.2)
Physical sensations	Managing cravings for nicotine by practising mindfulness techniques.	Instruction on how to perform a behaviour (4.1), Behavioural practice/rehearsal (8.1), reduce negative emotions (11.2)
Behaviours		
Pre-quit date	Imagining the benefits of being a non-smoker.	Information about health consequences (5.1); information about social and environmental consequences (5.3); information about emotional consequences (5.6); comparative imagining of future outcomes (9.3); framing/reframing (13.2); identity associated with changed behaviour (13.5)
Post-quit date	Planning activities to replace smoking behaviours, and rewards for continued abstinence from nicotine.	Action planning (1.4); behaviour substitution (8.2); habit reversal (8.4); self-incentive (10.7)
Lifestyle	Setting goals for improving other areas of lifestyle, including health, relationships and finances.	Goal setting (behaviour) (1.1); problem solving (1.2); action planning (1.4); commitment (1.9)
Other areas of the programme		
Assessments and progress reports	Assessing smoking behaviour, cravings, triggers, thoughts, emotions, physical sensations, quality of life and health satisfaction.	Discrepancy between current behaviour and goal (1.6); feedback on behaviour (2.2); self-monitoring of behaviour (2.3); non-specific reward (10.3)
Set quit date	Selecting a quit date and receiving feedback on time elapsed before and after quit date (with opportunity to reset quit date following lapse).	Goal setting (behaviour) (1.1); commitment (1.9); identity associated with changed behaviour (13.5)
Guidance		
Why is smoking so harmful?	Receiving information on why smoking is harmful to health.	Information about health consequences (5.1), salience of consequences (5.2)
Why is it important to set a quit date?	Receiving information on why it is important to set a quit date rather than reduce gradually.	Information about health consequences (5.1); anticipated regret (5.5)
Will I put on weight when I quit?	Receiving information about potential weight gain after quitting and ways to avoid it.	Behaviour substitution (8.2)
How could NRT/e-cigarettes/medication help me?	Receiving information about available pharmacological support.	Pharmacological support (11.1)

to tailor the intervention to the target population and setting, and thus extend the provision of behavioural smoking cessation support in this area. The resulting intervention has a strong focus on overcoming barriers associated with offenders' psychological capability, physical opportunity, and reflective and automatic motivations to stop smoking and abstain from nicotine.

The use of theory during the development of this intervention could be considered a strength of the process, and of the programme. Using the COM-B model and the Lifestyle Balance Model to conceptualise the clinical content of the intervention, ensured the evidential underpinning of the programme was as strong as possible, whilst using the BCW ensured that this process of development

Table 3
Implementation of breaking free from smoking using TIDieR

TIDieR Guidance	Implementation Information
How will the intervention be delivered?	<p>The intervention will be delivered via an online format on the Virtual Campus, which is a secure online learning environment available across prisons in England and Wales.</p> <p>The computer-assisted mode of delivery was discussed with stakeholders (staff working within the criminal justice service in the UK) with reference to the Breaking Free Online intervention, which the authors have already developed and implemented within prison settings. Evidence has suggested the acceptability and practicability of such online interventions within prison settings (Elison et al., 2015; Elison et al., 2016), and its application to the treatment and prevention of tobacco use, alongside other substances (Elison et al., 2014b).</p> <p>Each offender will have access to their own individual account on Breaking Free from Smoking that they can access individually as self-help (i.e. self-directed treatment). However, the intervention will ideally be delivered within a group setting in prison computer suites, with sessions facilitated by a minimum of two trained facilitators per group of 12 offenders.</p>
Where will the intervention be provided?	The intervention will be delivered in prison settings, initially in prisons in England and Wales.
Who provides the intervention?	The intervention will be delivered as a self-help, group-based intervention, with support from two trained facilitators per group of 12 offenders. Training will be provided by the authors of this paper and via an e-learning platform. Facilitators must have experience of information technology prior to training.
When will clients receive the intervention and how much time will this take?	<p>The intervention duration will allow offenders to prepare for their nominated quit date, which is recommended by the programme to be between two and three weeks. Offenders will be guided to focus on the two strategies that are accessible, in the 'thoughts' and 'behaviours' areas of the Lifestyle Balance Model. These strategies are designed to increase offenders' motivation to quit by recognising the benefits of going smoke-free, and to prepare them cognitively for their planned quit attempt by modifying any inaccurate thoughts they may hold about perceived benefits they derive from smoking (see Table 2). They will also be able to access psychoeducation on the negative health consequences of continuing to smoke and information on NRT, medication and e-cigarettes.</p> <p>Following their quit date, the programme will provide seven weeks of support, with individual programme sessions generally lasting one hour. The intervention strategies in the remaining domains of the Lifestyle Balance Model – including 'triggers', 'emotions', 'cravings (physical sensations)' and 'lifestyle' – will at that point be 'unlocked' and made accessible to offenders, along with a second strategy in the 'behaviours' domain (see Table 2 for reference). Offenders will access the whole intervention once per week for a total of 12 weeks. Weeks 11 and 12 are included to account for any lapses or relapses commonly attributed with smoking cessation (Aveyard & West, 2007). See Figure 2 for a flow chart outlining a typical progression through the programme. Although the intervention is designed as a 12-week programme, offenders will have access to it for up to a year.</p>

was completed in a systematic way. Generally, the BCW appeared to provide a suitable method for developing a behaviour change intervention, and facilitated the identification of evidence-based behavioural change techniques for inclusion in Breaking Free from Smoking. However, without the use of a model on which to map the identified content of the programme, such as the Lifestyle Balance Model, the BCW is limited in that it does not provide guidance on formulating a complete intervention. Using the TIDieR checklist to inform implementation guidance for the intervention was also vital here in moving past development of the programme through the BCW, to considering how the intervention can be translated into real-world practice.

Following the Medical Research Council's framework for the development of complex healthcare interventions, a continuous cycle of development, feasibility testing and evaluation of implementation and effectiveness is recommended (Craig et al., 2008). This article has detailed the

development stages of an online smoking cessation intervention for offenders, and has reported the evidence-based content contained within it. The next steps are to test the efficacy of this intervention within the intended prison environment. A randomised controlled trial is currently planned to evaluate this intervention within the UK, and will be reported separately. If results from the trial indicate that the intervention is effective at improving smoking cessation amongst offenders, there is scope for this intervention to be trialled internationally. Also of interest for future research would be the maintenance of smoking cessation in the long-term, including on release from prison. Exploring this could enhance understanding of the specific factors underlying this behaviour change within the offending population.

Conclusion

By reporting the process of using both the BCW and COM-B approaches to guide the development of Break-

ing Free from Smoking, this paper provides evidence to support this method for the design of behaviour change interventions. Using the BCW allows the systematic reporting of this design stage, and enables the reporting of BCTs contained within an intervention, allowing for future research to analyse, synthesise and utilise behaviour change interventions (McCleary, Duncan, Stewart, & Francis, 2013). This work forms the initial stage of intervention development, with feasibility testing and a randomised controlled trial currently planned to evaluate the outcomes of the intervention.

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Conflict of Interest

SD, JW, SE and GD are employed by Breaking Free Group where Breaking Free from Smoking and Breaking Free Online have been developed.

Ethical Standards

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

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