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Mindfulness in policing

A randomised controlled trial of two online mindfulness resources across five forces in England and Wales

November 2019

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Executive summary

Key findings

Online mindfulness training can improve the wellbeing of police officers and staff.

This randomised controlled trial (RCT) of online mindfulness training compared wellbeing-related outcomes for police officers and staff allocated to three separate user groups:

- Headspace (a commercially available mindfulness app and website)
- Mindfit Cop (a bespoke online eight-week mindfulness course for policing)
- the waiting list control (who completed all surveys before receiving access to Mindfit Cop after six months).

Both the Headspace and Mindfit Cop online mindfulness resources improved wellbeing, life satisfaction, resilience and performance, compared to the waiting list control group. Headspace provided greater improvement across these wellbeing outcomes compared to Mindfit Cop after 10 and 24 weeks, but Mindfit Cop's results improved and moved closer to Headspace's at 24 weeks.

Neither online resource reduced absence days or spells within the six months of the trial, but self-reported presenteeism (working while sick) behaviours did reduce. Participants who reported low job control (little control over their tasks and scheduling) benefited most from using the resources.

Background

Police wellbeing has received increased attention over the past five years. Surveys by Mind (2015) and the Police Federation (Elliott-Davies, 2018) suggest that many in the police workforce experience stress, low mood, anxiety and/or other mental health issues, but are less likely than other emergency services to seek help.

Mindfulness has received widespread publicity as a potential way to improve individual wellbeing. Being mindful involves:

'paying attention to what's happening in the present moment in the mind, body and external environment, with an attitude of curiosity and kindness'.

(The Mindfulness Initiative, 2015)

This attention has recently been justified by evidence that suggests certain mindfulness training approaches help improve adult wellbeing. While promising early findings emerged in the US military and police, from small-scale feasibility studies on mental health and performance, an evidence gap remained around the usefulness of mindfulness training in UK policing.

Small pockets of mindfulness activity have emerged in some police forces in England and Wales. In response to requests for information and support from frontline officers, The College of Policing decided to test the relevance and impact of mindfulness training in a police context. The aim was to provide evidence for future investment decisions at force and national level. A serving officer and mindfulness trainer developed a new police-specific online mindfulness course for this trial (Mindfit Cop) and it was tested alongside an existing commercially available app, already in use in some forces (Headspace).

The randomised controlled trial

The College of Policing enlisted the Behavioural Insights Team and members of the What Works Centre for Wellbeing's Work and Learning Evidence Programme (based at the University of East Anglia) to contribute to the design of an RCT. The aim was to assess the impact of using online mindfulness resources on police wellbeing and related outcomes. Online resources were selected for testing, as face-to-face training would be limited by the number of trainers and staff abstraction time available. Online resources allow for large-scale concurrent rollout of mindfulness training with inbuilt time flexibility.

All police employees across five participating forces were invited to apply to take part. The forces were Avon and Somerset, Bedfordshire, Cambridgeshire, Hertfordshire and South Wales. A total of 1,337 participants were accepted onto the study, or around 7 per cent of the workforce of the combined forces.

Trial participants were randomly assigned to one of three groups: Headspace users (446), Mindfit Cop users (445) and the waiting list control (446). The waiting list participants were told that they would receive access to Mindfit Cop after six months had elapsed, but were asked to complete the trial surveys in order to provide comparison data.

The following data were collected for the study, with informed consent from each participant:

- three sets of online survey data (see 'measures' below) plus comments
- demographic and sickness absence data collected directly from the force HR teams
- usage data collected directly from the online mindfulness resource provider
- interview data collected via telephone calls with selected participants (n = 29).

Measures

Data was collected for the study via surveys at the following time points:

Data (Source of survey questions)	Baseline	10 weeks	24 weeks
Wellbeing (Short Warwick Edinburgh Mental Wellbeing Scale)	✓	✓	✓
Resilience (Brief resilience scale)	✓	✓	✓
Performance (Single item from WHO-HPQ survey)	✓	✓	✓
Mindfulness (Short mindful attention awareness scale)	✓	✓	
Presenteeism (Single item for this study)	✓		✓
Leaveism (Single item for this study)	✓		✓
Restricted duties (Single item for this study)	✓		✓
Job control (Items from Workplace Employment Relations Study)	✓	✓	

The cohort

Of the 1,337 eligible applicants, 15 formally withdrew within the first 10 weeks of the study.

Not all of the participants made use of their access to the online mindfulness resources. Twenty-seven per cent of the Headspace group and 21 per cent of the Mindfit Cop group did not register/activate their access code. There was also response attrition over time. Only 45 per cent of the original participants provided survey responses that could be analysed at week 24.

The self-selecting cohort of volunteers included more women and staff than would have been expected from a random sample of the entire police workforce.

Analysis

The University of East Anglia analysed the quantitative survey, sickness absence and usage data using a range of regression analyses appropriate to the nature of the data.

The College analysed the qualitative data received via the survey open-text comments and the telephone interviews using framework analyses to identify emerging themes.

Main results

Hypothesis	Results
<p>1 Online training in mindfulness will improve wellbeing, resilience and performance for police officers and staff.</p>	<p>Headspace improved wellbeing, life satisfaction, resilience and performance scores at 10 and 24 weeks.</p> <p>Mindfit Cop improved wellbeing and life satisfaction scores only at 10 weeks, but improved all of the primary outcomes (wellbeing, life satisfaction, resilience and performance) at 24 weeks.</p> <p>Accept hypothesis</p>
<p>2a Online training in mindfulness will improve mindfulness skills.</p>	<p>Headspace improved mindfulness scores at 10 weeks.</p> <p>Mindfit Cop did not significantly improve mindfulness scores at 10 weeks.</p> <p>Mindfulness was not surveyed again at 24 weeks.</p> <p>Accept hypothesis for Headspace</p>
<p>2b Online training in mindfulness will reduce sick leave, presenteeism (working while sick) and leaveism (taking annual leave instead of sickness absence).</p>	<p>Headspace and Mindfit Cop reduced presenteeism at 24 weeks.</p> <p>There was no evidence that online training in mindfulness reduced sick leave or leaveism.</p> <p>Accept hypothesis for presenteeism but not for absence days/spells or leaveism</p>
<p>3 Bespoke training aimed at police officers (Mindfit Cop) will improve wellbeing, resilience and performance for police officers and staff more effectively than a generic mindfulness intervention (Headspace).</p>	<p>The generic mindfulness intervention (Headspace) was more effective than the bespoke training at 10 weeks (Mindfit Cop).</p> <p>At 24 weeks, Mindfit Cop and Headspace were both effective interventions across the primary outcomes, but Mindfit Cop did not appear to offer any additional benefits.</p> <p>Do not accept hypothesis</p>

4	Mindfulness training is more likely to be effective for people with high levels of job control in terms of how they structure their day and do their tasks.	Mindfulness training was more beneficial to those with low job control. Do not accept hypothesis
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Feedback from participants

The survey findings suggested that using mindfulness resources had a positive impact on police employee wellbeing. We interviewed users of Headspace and Mindfit Cop to better understand why this positive change might have occurred. Users of the mindfulness resources reported becoming more reflective about their own thoughts and actions, while learning new techniques to use in stressful situations.

Moving from 'autopilot' to a more nuanced awareness of everyday thoughts and behaviours is one of the key messages of both Headspace and Mindfit Cop. Where trial participants had used the resources, they had absorbed this message and found it useful:

'We do all work really really hard and sometimes relentless and just reminding people that you've got to stop and pause and think about yourself for a moment if you're going to be effective in what you do it's a good thing and all too often we forget that message.' (Mindfit Cop user)

Participants who had engaged with Mindfit Cop and Headspace reported benefits such as:

- feeling less stress and anxiety
- sleeping better (while using the sleep sessions on Headspace in particular)
- focusing better at work
- feeling more supported (because the resources had been provided to them).

Barriers and enablers

It should be noted that mindfulness training is not for everyone, and many trial participants either did not use the resources or used them very little. We interviewed non-users and low users to try to find out why. We identified four key challenges:

- time (scheduling, not being interrupted)
- location (difficulties of open-plan offices, whether it was appropriate to use at home)

- emotion (tackling the guilt of taking time out and embarrassment in front of peers)
- technical issues (both IT literacy and login issues).

Some participants addressed these challenges at a personal level by using the resources at home, in their car or during their breaks. However, others said they would have only felt able to use the resources if they had received clearer organisational support, through the allocation of protected time, suitable space and formal supervisor permission.

Conclusion

This RCT has produced strong evidence that online mindfulness training can be beneficial for the wellbeing of police employees. However, as with any wellbeing intervention, implementation involves practical considerations. Costs and how to communicate the opportunity to use the resource require careful thought in any future rollout.

Maximising the benefits to policing of mindfulness training will involve listening to user feedback on potential barriers to participation: time, location, emotion and technical issues. Tackling these potential barriers could involve: providing quiet rooms, hosting group sessions in breaks, providing clear permission to complete the training elements of the mindfulness resources in work time, easy-to-use online interfaces and simple instructions for registration and login.

Contents

Acknowledgements	11
Background	13
Wellbeing in policing	13
Evidence on the effects of mindfulness	15
Two relevant mindfulness resources	17
The randomised controlled trial	20
Research aims and hypotheses	20
Study design	22
Outcome measures	24
Flow diagram of participation in the trial	25
Uptake and demographic profile	27
Finding out more – user experience	28
Limitations.....	29
Results	32
Main results	32
The next step in analysis.....	35
Reporting on the hypotheses	35
Going deeper – feedback from participants.....	37
Understanding usage barriers and enablers.....	39
Barriers.....	41
Enablers	43
User experience of online resources	44
Headspace	44
Mindfit Cop	45
Conclusions and implications	47
Conclusion.....	47
Considerations for rollout.....	48
Challenges	48

Communications.....	48
Costs	49
Future research	50
References.....	51
Appendices.....	54
Appendix 1: Technical abstract.....	55
Appendix 2: Survey measures.....	58
Appendix 3: Baseline survey	60
Appendix 4: 10-week survey	68
Appendix 5: 24-week survey.....	74
Appendix 6: Interview questions.....	79
Appendix 7: Analysis details	83
Appendix 8: Regression models	87
Appendix 9: Qualitative analysis.....	90

Acknowledgements

This study would not have been possible without the participation of a wide range of people. The College would particularly like to thank the following for their invaluable contributions.

Trial

Catherine Owens from the College of Policing was responsible for the initial design and set-up of the trial, including all preparatory work to involve forces and liaise with the providers of the mindfulness resources.

Dr Pantelis Solomon and Dr Mark Egan from The Behavioural Insights Team developed the trial design and prepared the trial protocol, project managed by Catherine Owens and Dr Helen Fitzhugh of the College of Policing. Peter Carlyon provided administrative support.

Dr Helen Fitzhugh implemented the trial design, oversaw all data collection and wrote this report. Julia Morris and Nerys Thomas provided internal review.

Dr George Michaelides, Professor Sara Connolly and Professor Kevin Daniels of the University of East Anglia analysed the quantitative data and provided analysis reports summarising the findings of the study, which formed the basis of this report.

Dr Helen Fitzhugh designed and carried out the supporting qualitative research component, with interviewing and transcription support from: Anika Ludwig, Gill Sims, Karen Moreton, Hannah Kennedy and Jenny Kodz.

Dr Jonathan Houdmont and Dr Paul Flaxman provided external peer review.

Mindfulness resources

DI Jenni McIntyre-Smith of Bedfordshire Police and mindfulness trainer Michael Chaskalson developed the eight-week online mindfulness course Mindfit Cop. DI McIntyre-Smith liaised with the College of Policing to provide advice and support the trial.

Judith Broug, from MissyRedBoots, provided graphic and web design for Mindfit Cop and supported the trial by providing data and technical support.

Janis Martman and Emily Durden of Headspace supported the trial by providing usage data.

Champions and participants

Avon and Somerset Constabulary – Jacquita Mead acted as our mindfulness trial champion and advised on implementation and communications. Sarah Cook provided our link into HR. Lucy Greenberry provided communications support.

Bedfordshire, Cambridgeshire and Hertfordshire – DI McIntyre-Smith acted as our mindfulness trial champion. Stephen Mellowes provided our link into HR. Nikki Royall provided communications support.

South Wales Police – DS Debbie Zeraschi acted as our mindfulness trial champion and advised on implementation and communications. Chris Martinson provided our link into HR. Ceri Doyle provided communications support and planning.

This trial could not have been completed without the participation of over 1,300 officers and staff. Thanks to everyone who completed the surveys and gave feedback on the resources. Particular thanks must go to those on the waiting list who provided the data necessary to allow us to complete this study as an RCT, while waiting six months to gain access to the resource themselves.

Background

The wellbeing of police officers and staff has received increased attention over the past five years, alongside growing interest in wellbeing in society as a whole. Surveys by Mind and the Police Federation suggest that high proportions of the police workforce experience extreme stress, low mood, anxiety and/or other mental health issues, but are less likely than other emergency services to seek help for these issues.

Mindfulness has received widespread publicity as a potential way to improve individual wellbeing. This attention has recently been justified by evidence that suggests certain mindfulness training approaches help improve adult wellbeing. While promising early findings emerged in the US military and police, from small-scale feasibility studies on mental health and performance, an evidence gap remained around the usefulness of mindfulness training in UK policing.

Small pockets of mindfulness activity were being carried out in different ways across police forces in England and Wales. The College of Policing identified that it would be useful to test the relevance and impact of mindfulness training in a police context, in order to provide evidence for future investment decisions at force and national level. A new police-specific online mindfulness course was developed (Mindfit Cop) for this trial, alongside an existing commercially available app and website already in use in some forces (Headspace).

Wellbeing in policing

Over the past five years, police employee wellbeing has received increased attention.

Relevant initiatives include:

- the establishment of the National Police Chiefs' Council wellbeing and engagement working group in 2013
- the charity Mind's Blue Light Programme of activities, from 2015 to 2019, aimed at reducing stigma and promoting wellbeing for emergency services employees
- the development and launch of the Oscar Kilo wellbeing hub website and the Blue Light Wellbeing Framework in 2017, a wellbeing-focused self-assessment and learning framework at the organisational level

- the publication of ‘A Common goal for police wellbeing’ by the Home Office (2018a), aimed at ensuring police employees can ‘realise their potential, be resilient, and be able to make a productive contribution to the police workforce’
- the launch of the National Police Wellbeing Service (NPWS) in April 2019, developed by the College of Policing with investment from the Police Transformation Fund.

This activity has happened in the context of a trend towards acknowledging the impact of poor wellbeing in society as a whole, and UK working culture in particular.

The influential Stevenson and Farmer ‘Thriving at work’ review concluded that ‘the UK faces a significant mental health challenge at work’ (2017, p 5), with serious implications for human flourishing, work productivity and the economy. The holistic concept of wellbeing at work includes more than just mental health. It also covers issues of inclusion, physical health, open and collaborative organisational culture, meaningful work and skilled management – as outlined in the British Standards Institute Publicly Available Standard 3002. However, individual mental health is an important component of overall workplace wellbeing that requires significant attention across UK organisations.

Recent surveys have confirmed that this issue requires attention within the police service. The Police Federation’s Demand and Welfare Survey (Elliott-Davies, 2018) suggested that four in every five police employees in the federated ranks (constable to chief inspector) had experienced low mood, anxiety or stress in the past year, largely caused or made worse by their work. This matches earlier evidence collected via Mind’s Blue Light police scoping survey (2015), which suggested that the police had the highest levels of personal experience of mental health issues of all the emergency services, but were the least likely to ask for help with those issues.

Presenteeism (working while sick) and leaveism (taking annual leave instead of sickness absence) hide the extent to which poor mental health affects employee performance and attendance (Hesketh and Cooper, 2014). These behaviours are widespread in the police service, with 70 per cent of respondents to the Police Federation’s survey (Elliott-Davies, 2018) suggesting they had attended work when experiencing issues related to mental health. Forty-two per cent suggested they had taken annual leave/rest days off, rather than sick days, due to their mental health.

Police wellbeing is influenced not only by operational factors – the nature of the job and exposure to potentially traumatic situations – but also by organisational factors – the way the work is carried out, organised and managed (Penalba et al, 2008; Mind, 2015). As such, organisational-level interventions to address systemic pressures and cultural support

barriers must be part of any wellbeing programme. However, interventions targeted at individual level may play a role too. Individual skills training may allow police employees to consider their own reactions to difficult situations and their workload. This awareness can help them become more skilled at dealing with work-related emotions. For these reasons, mindfulness training has been proposed as one way of supporting police employee wellbeing.

Evidence on the effects of mindfulness

Mindfulness involves:

‘paying attention to what’s happening in the present moment in the mind, body and external environment, with an attitude of curiosity and kindness’ (The Mindfulness Initiative, 2015)

Research evidence of the wellbeing benefits of practising mindfulness has grown over the past decade. The quality of the research overall has been mixed, but reliable evidence has been identified via systematic review processes. Systematic Reviews examine not only the findings of multiple studies, but also make judgements based on the quality of the research.

Just over 100 RCTs were examined in a Campbell systematic review (de Vibe et al, 2017), which provided a high-quality overview of the research into the widespread Mindfulness-Based Stress Reduction (MBSR) group intervention. MBSR was developed by Jon Kabat-Zinn in the late 1970s as an eight-week programme of activities focused on developing people’s awareness and non-judgemental attention to everyday situations. The systematic review drew on evidence from studies, with a total of 8,135 participants across multiple countries and sample groups. It concluded that, in comparison to adults who received no intervention, the MBSR improved wellbeing-related outcomes such as quality of life, mental health and social functioning:

‘If 100 people go through the MBSR program, 21 more people will have a favourable mental health outcome compared to if they had been put on a wait-list or gotten only the usual treatment.’ (de Vibe et al, 2017, p 2)

The MBSR also performed favourably on these outcomes compared to other active forms of treatment. In general, the effects appeared to last, with follow-ups months and/or years later continuing to suggest positive change.

The MBSR is a structured approach to learning about mindfulness, typically delivered in a group setting by trained facilitators. However, there are many other ways of gaining skills and knowledge of mindfulness, including self-guided work with books, audio and online

resources. A systematic review of mindfulness self-help interventions (Cavanagh et al, 2014) evaluated the effectiveness of this type of lower-intensity engagement. The review examined the findings of 15 RCTs, and found that even low-intensity interventions could produce small to moderate improvements in anxiety and depression symptoms. The scale of the review and the limitations of the included studies indicated that further research on low-intensity interventions was necessary. However, the findings to date suggested that mindfulness training outside of more formal and structured settings may also be considered beneficial for adult wellbeing.

These findings offer good news for workplace-based mindfulness training, which is often not delivered via one of the proven structured training courses (such as MBSR), but with a variety of different emphases and approaches (Bartlett et al, 2019). A systematic review of 27 papers on workplace mindfulness RCTs (Bartlett et al, 2019) suggested that, even taking into account this variety of approaches, workplace mindfulness training appeared effective in reducing stress and improving mental health and wellbeing. However, the state of the evidence was not yet sufficient to provide clear findings on whether this also improved work performance.

While the evidence in the general population and in generic workplace settings is promising, the number, size and quality of studies of the effects of workplace mindfulness training on military and police personnel has not yet reached the same critical mass.

In the US military, Mindfulness-based Mind Fitness Training (MMFT) has been feasibility tested in high-stress deployment situations. Findings from small-scale studies with convenience samples (Jha et al, 2010; Stanley et al, 2011) suggested that MMFT increased mindfulness, and the increase in mindfulness supported the participants to experience reduced stress in high-pressure environments. Qualitative findings (Stanley et al, 2011) suggested reasons for this positive impact: participants reported feeling more able to focus and take time to reflect on their biological responses to stress before they turned to unhelpful coping behaviours. More recent work in this area (Jha et al, 2017) has suggested that mindfulness training can improve military personnel performance by helping maintain working memory, and therefore the ability to pay attention and not become distracted under stress.

A feasibility study of an alternative approach, Mindfulness-Based Resilience Training (MBRT), with a cohort of 62 US police officers (Christopher et al, 2016) found significant improvements in resilience, perceived stress, burnout, anger, fatigue and sleep disturbance. A further small pre- and post-intervention study of 47 US police officers and 22 firefighters

also explored the benefits of the MBRT and found that increased mindfulness was related to increased resilience and decreased burnout.

A German RCT of 267 members of the Federal Armed Forces was published after this study was completed (Krick and Felfe, 2019). It addressed potential limitations common to many mindfulness studies, including this one, of researching self-selecting volunteers and using only subjective self-report measures. Even when these potential limitations were addressed, the study reported positive physical and psychological benefits for the participants (including improved self-care) from a mindfulness intervention, in comparison to the control group.

In UK policing, there have been pockets of mindfulness activity, largely built on the enthusiasm and skills of individual police officers and staff located in particular forces. While the extent of mindfulness activities is unknown, a number of forces approached the College of Policing to explain their current practices on hearing about this mindfulness trial.

To our knowledge and at the time of writing, the only mindfulness activity in UK policing to provide a written evaluation report (Wiffin and McIntyre-Smith, 2017, unpublished) was the eight-week programme delivered face-to-face to small cohorts of police employees in Bedfordshire in 2016 to 2017. There were some limitations to the research, but the quantitative study suggested that participation in mindfulness training reduced feelings of burnout in comparison to a control group. Focus groups provided richer feedback on the positive effects, including willingness to reflect and gain perspective on situations, make time to relax and make conscious (rather than reactive) use of time.

Two relevant mindfulness resources

In response to requests for information and support from frontline officers, The College of Policing decided to test the impact of mindfulness training on the wellbeing, resilience and performance of police officers and staff. As pockets of practice were emerging across the UK – sometimes incurring costs to forces for purchasing different types of training or resources – the College responded to requests to provide a robust evidence base for future decision-making around investing in mindfulness training. In order to address the evidence gap, a large-scale RCT was planned. Two relevant routes to testing were identified from existing practice:

- a. Assessing the impact of using Headspace, a well-established, commercially available mindfulness app that some UK forces had already paid to use or were considering purchasing in the future.
- b. Creating a police-specific online mindfulness course based on the structure of the MBSR and assessing its impact. Course development was first suggested and then led by a

police officer who was also a qualified mindfulness trainer at Bedfordshire Police. The online course came to be known as Mindfit Cop.

The intention behind both of these resources is to foster mindfulness, which can be understood as a combination of conscious awareness of everyday situations (rather than acting on autopilot), an accepting attitude and therefore a greater ability to self-regulate in stressful situations (de Vibe et al, 2017).

Online resources were tested because of their potential for quick scaling across the country if they were found to be effective. The flexibility of using online resources was also intended to avoid the logistical issues created by the need to abstract officers and staff from duty for face-to-face interventions.

Headspace

Headspace is an online subscription service that offers training packages of audio and animated video sessions. Basic training courses are available on subscription. Further packages range from short 'bite-size' pieces of a few minutes, to longer guided meditations and topic-specific audios. The topics include sleep, grief, difficult conversations, mindful running, mindful eating and more. The user can decide which type and length of session to complete at any time, and there is no set route for completion of sessions, beyond the basic introduction packages.

Headspace is offered via a website and a smartphone app. See www.headspace.com

Although Headspace offers free access to its first basics course, the full paid subscription was offered to users for this trial, to ensure they could explore the mindfulness resource fully.

Mindfit Cop

Mindfit Cop is a bespoke police-specific online eight-week course, which offers videos, audios and documents to cover similar ground to the MBSR, but with police-oriented examples. The course must be followed in the given order. Each week of the course is only released a week after the participant first accessed the previous week's material. This delay is to allow participants to absorb the lessons and try them in home practice, before moving on to the next week's tasks.

Mindfit Cop is offered via a website but can also be viewed as a web app (a website that is accessible on a smartphone). The audio sessions are downloadable to a smartphone via a podcast provider. Previously available at www.mindfitcop.uk, now at oscarkilo.org.uk/mindfit-cop/.

While the intention is completion in eight weeks, once the website is available to the participants, they can proceed at their own pace. This allows them to miss a week, but still access that content later and continue through the course when they choose.

The randomised controlled trial

The College of Policing planned a robust research study to test the impact of online mindfulness resources in policing. An RCT design was adopted.

The research team elicited expressions of interest from a total of 1,710 police employees across the five participating forces: Avon and Somerset, Bedfordshire, Cambridgeshire, Hertfordshire and South Wales. They were invited to complete an initial survey with questions on wellbeing, resilience, performance, mindfulness, job control, presenteeism, leaveism and restricted duties. This 'baseline' was compared to later responses to identify what changed.

Of the original 1,710, 296 chose not to complete the questionnaire and 77 were excluded from the study because they were already following a structured mindfulness course and/or they were already receiving a therapeutic mental health intervention (such as counselling or cognitive behavioural therapy). Those who were excluded from the research were given the opportunity to use the free resource after the trial ended. The remaining 1,337 participants were randomly assigned to one of three groups: Headspace users (446), Mindfit Cop users (445) and the waiting list control (446).

The following data were collected for the study, with informed consent from each participant:

- three sets of online survey data – baseline (prior to allocation), 10 and 24 weeks
- demographic and sickness data collected directly from the force HR teams
- usage data collected directly from the online mindfulness resource provider
- interview data collected via telephone calls with selected participants.

Limitations of the study included: response attrition (45 per cent of the original participants provided survey responses that could be analysed at week 24), technical issues with one of the resources in particular (Mindfit Cop), relying on self-report data in relation to work performance and using sickness data collected in varying ways by different HR teams.

Research aims and hypotheses

The College of Policing aimed to address the research gap relating to mindfulness in policing. The specific focus on wellbeing-related outcomes complemented concurrent initiatives to improve wellbeing in policing, such as the development of the NPWS. In order

to address the evidence gap, a large-scale RCT was planned with two test conditions (Headspace and Mindfit Cop use) and one control condition (waiting list). The rationale for choosing Headspace and Mindfit Cop was covered in the previous section of this report.

The aim of the study was to establish whether mindfulness training was superior to the status quo in providing wellbeing benefits:

For police officers and staff in England and Wales, is receiving online mindfulness training via Headspace and/or Mindfit Cop more effective than the status quo (represented by a waiting list group) in increasing positive wellbeing-related outcomes, such as mental wellbeing, resilience and performance?

In research of this type, it is useful to set out the expected results of the trial prior to the study, to provide a focus for study design and transparency in subsequent reporting. The first two expected results (hypotheses) were worked up based on previous research findings.

1. Online training in mindfulness will improve wellbeing, resilience and performance for police officers and staff (primary outcomes expected).
2. Online training in mindfulness will improve mindfulness skills, and reduce sick leave, presenteeism and leaveism (secondary outcomes expected).

The third hypothesis was built on the experience of our mindfulness in policing advisor DI Jenni McIntyre-Smith in delivering mindfulness training in a face-to-face setting:

3. Bespoke training aimed at police officers (Mindfit Cop) will improve wellbeing, resilience and performance for police officers and staff more effectively than a generic mindfulness intervention (Headspace).

An additional hypothesis was added on the advice of Professor Kevin Daniels, of the University of East Anglia, to ensure that due attention was paid to whether the outcomes experienced by police employees would vary depending on their 'job control' – the extent to which they could determine their own actions and time allocations within the working day. The rationale behind this was previous evidence (Daniels et al., 2017; Lawrie et al, 2018) that suggested mindfulness and other self-help work interventions might be more successful for participants whose job control was already high, which might have consequences in favouring higher-ranking officers and more senior staff.

4. Mindfulness training is more likely to be effective for people with high levels of job control in terms of how they structure their day and do their tasks.

Study design

This three-arm parallel RCT design aimed to maximise confidence in the final research findings. The aim was to ensure that the results would be reliable, useful and relevant. For this reason, a number of robust design features were adopted and are explained below.

The study was delivered across five forces: Avon and Somerset, Bedfordshire, Cambridgeshire, Hertfordshire and South Wales. This ensured that the results were not just relevant to the particular circumstances in one force (for instance in Bedfordshire, where the mindfulness lead worked). The forces involved were not randomly selected, but were an opportunity sample based on interest in the project. However, they ranged in size, location and previous experience of mindfulness delivery, and any differences between them were examined in the analysis.

The study was offered to all police employees and volunteers (officers, staff, PCSOs, specials and other volunteers). This approach ensured that the results were not just relevant for one type of police employee.

Participation in the study was voluntary, by informed consent. The study was open to anyone within the five participating forces, as long as they fulfilled two inclusion criteria (see below). There were just under 20,000 employees within the five forces. Opening up the study to this volume of employees allowed the research team to understand the potential interest and take-up within forces if the resources were offered on an open and voluntary basis in the future. It also ensured a large cohort of participants was available for the study, improving the chance of detecting effects of using the resources, even after some participants withdrew or dropped out over time.

Participants were excluded if they:

- were currently following a structured mindfulness intervention (eg, a face-to-face course or using the Headspace app)
- were currently involved in receiving counselling, cognitive behavioural therapy or any other structured talking therapy.

There were two key reasons behind these criteria. The first was to ensure that participants did not stop, swap or otherwise let the new wellbeing intervention interfere with any current therapy. The second was to avoid confounding the results of the trial if large volumes of participants were simultaneously involved in other (unknown) mindfulness- or wellbeing-focused interventions.

The study employed randomisation at the individual participant (police employees) level. Whenever a potential participant expressed an interest in accessing the mindfulness training, they were offered a unique research ID number. Once the potential participants had completed the initial survey, they were randomly assigned to either access Headspace, Mindfit Cop, or to wait for six months before receiving access to Mindfit Cop. Equal numbers were allocated to each group. By using the research ID and a computerised randomisation process, the allocation was not based on human judgements. This randomisation increased our confidence that no unconscious bias or other systematic judgement had compromised our ability to make useful comparisons between the Headspace, Mindfit and waiting list groups. This is important, because in less robust trials, those who are easiest to access often end up being offered new resources first, which can lead to the results being less relevant to a wider range of people.

The study employed a comparison group who were not receiving access to the resources during the study period, but completed all the same surveys. The data from this group provided a comparison reference point of the same range of participants as the other groups (eg, by age, gender, force and rank/role). This comparison allowed us to check whether the changes detected in the Mindfit Cop and Headspace groups could be confidently attributed to their usage of the mindfulness resources, or, alternatively, whether some other event or circumstance had influenced and changed the wellbeing or sickness absence rates of everyone in the organisation at the same time.

The study gathered data on the relevant outcomes at three time points:

- baseline – before the trial participants were allocated to a resource
- 10 weeks – this survey occurred 10 weeks after the Headspace/Mindfit Cop groups received access to their mindfulness resources
- 24 weeks – this survey occurred 24 weeks after the Headspace/Mindfit Cop groups received access to their mindfulness resources.

This ensured that the analysis could assess shorter- and longer-term change over time.

The study employed statistical analysis techniques (regression analyses) that could ‘control’ for key characteristics of participants (eg, by age, gender, force and rank/role) and for their individual starting points (eg, what their wellbeing score was before they used the mindfulness resources). The demographic data was collected directly from force HR records with the informed consent of participants. This meant that the analysis could pick up and report on any important differences in the usefulness of the resources for different types of people. For more detail on analysis techniques, see Appendix 6.

While the original intention had been to survey at 12 and 24 weeks, for logistical reasons (12 weeks would have fallen over the Christmas period) a 10-week follow-up period was planned. There were no changes to this trial design once the trial was under way.

Outcome measures

The following measures were used in this study:

- **wellbeing** – the Short Warwick-Edinburgh Mental Wellbeing Scale (seven items – aggregated in analysis to form one wellbeing score per response)
- **life satisfaction** – a single item from the Office for National Statistics questions on life satisfaction ('Overall, how satisfied are you with your life nowadays?')
- **resilience** – the Brief Resilience Scale (six items – averaged in analysis to form one resilience score per response)
- **work performance** – a single item from the World Health Organization Health and Work Performance Questionnaire ('On a scale of 0 to 10, where 0 is the worst job performance anyone could have at your job and 10 is the performance of a top worker, how would you rate your overall performance on the days you worked during the past two weeks?')
- **mindfulness** – the Short Mindful Attention Awareness Scale (five items – averaged in analysis to form one mindfulness score per response)
- **presenteeism** – 'Over the last six months have you gone to work when you were sick?'
- **leaveism** – 'Over the last six months have you taken annual leave instead of calling in sick?'
- **restricted duties** – 'Over the last six months have you gone on restricted duties for any reason?'
- **sickness absence** – absence days and absence spells for each participant, taken from HR records for the 24 weeks prior to the study and the 24 weeks of the study.

In addition, **job control** was measured at baseline and 10 weeks, using slightly adapted questions from the Workplace Employment Relations Study (WERS) 2011 conducted by the Department for Business, Innovation and Skills.

To reduce the survey burden on participants, data were not collected on all measures at every survey point. The table below shows when each type of data were collected.

Table 1: Outcome measures and point of collection

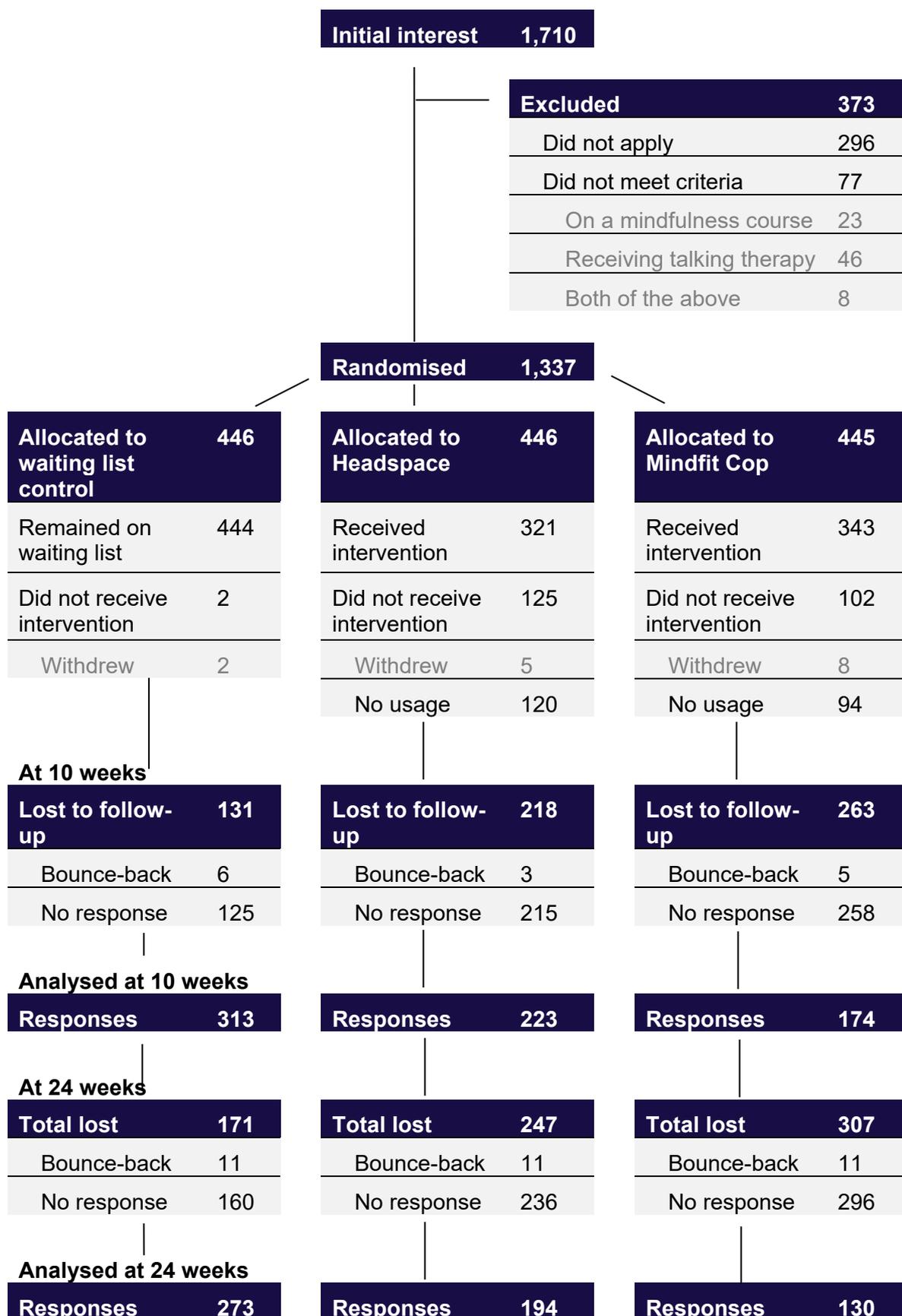
Data	Baseline	10 weeks	24 weeks
Wellbeing	✓	✓	✓
Resilience	✓	✓	✓
Performance	✓	✓	✓
Mindfulness	✓	✓	
Presenteeism	✓		✓
Leaveism	✓		✓
Restricted duties	✓		✓
Sickness absence	✓		✓
Job control	✓	✓	

The origins of each measure are provided in Appendix 2. Examples of the baseline, 10-week and 24-week surveys are available in appendices 3, 4 and 5 respectively. There were three slightly different copies of the 10-week and 24-week surveys (for the control group, Mindfit Cop and Headspace groups) but only one example of each is given in the appendices for space reasons. The measures were all the same, with the preamble text and comment questions lightly tailored to the group allocation.

Limited **usage data** was also collected automatically via the two online mindfulness resources when people validated their access codes/registered and then proceeded through the weekly exercises (Mindfit Cop)/sessions (Headspace).

Flow diagram of participation in the trial

CONSORT stands for ‘the consolidated standards of reporting trials’ (<http://www.consort-statement.org/>). The flow diagram below follows CONSORT guidance by showing the different stages of the study and how many participants were involved at each stage.



Some participants did not use the online resources, so did not receive the intervention. If they officially withdrew, their participation ended. However, all other participants who did not use the resource remained part of the trial and were sent invite links for both follow-up surveys. Participants who did not complete the 10 week survey remained part of the trial and were given the chance to complete the 24 week survey.

Uptake and demographic profile

Table 2 draws on the 2017 police workforce figures (Home Office, 2017) used in the initial trial protocol to estimate the pool of available employees from the five forces. It then gives percentages for a) initial interest – ie, the 1,710 people who asked to find out more; b) allocation within the trial – ie, the 1,322 people who were allocated to one of the trial arms and did not formally withdraw. Both figures are given, because a) it gives a useful indication of the extent to which police employees might be interested in mindfulness training if they did not have to sign up to a research trial to access it, and b) it highlights the extent of the workforce in each force who were initially actively engaged.

Table 2: The total number of employees in each participating force (as of 2017), with proportions of interest and participation in the trial.

Police force	Total employees	Initial interest	Part of trial
Avon and Somerset Constabulary	5,736	10%	8%
Bedfordshire Police	2,289	11%	8%
Cambridgeshire Constabulary	2,587	6%	4%
Hertfordshire Constabulary	3,793	10%	7%
South Wales Police	5,283	7%	6%

At the start of the trial, it was clear from the breakdown of allocated participants that the self-selecting volunteering process had not provided a sample that matched the demographics of the national police workforce. Details are given below, using figures from Home Office (2018b) workforce statistics on gender and diversity. As any future intervention is likely to be voluntary, this self-selection difference matters less to the generalisability of the findings than if the interventions were being considered as compulsory for all employees.

- 47 per cent officers/53 per cent staff – If all potential workforce members are taken into account (including unpaid volunteers) then the overall make-up of the workforce nationally is 56 per cent officers and 29 per cent staff, suggesting staff are overrepresented in the sample.
- 65 per cent female/35 per cent male – As of March 2018 only 30 per cent of officers were female, but 61 per cent of police staff were female. The bias towards female participants in this trial may have been influenced by, but is not only attributable to, the high proportion of police staff involved in the trial.
- The age profile comparison was not clear-cut, with for instance 58 per cent of the officers involved in the trial aged 41 to 55 (compared to 45 per cent of all officers being in that age category nationally), but a far lower proportion of over-55 staff involved than is found nationally (20 per cent of all staff – 10 per cent of all staff participants in the trial).
- Around 6 per cent of trial participants were senior officers, similar to 4 per cent of the workforce nationally.

Finding out more – user experience

Additional comment boxes on the survey and telephone interviews provided insight into the experience of those using the mindfulness resources. This feedback was particularly useful for trying to understand and interpret usage trends and the main findings.

Over 300 comments were left by participants across the three allocation groups at week 10. These were analysed for emerging themes.

Telephone interviewees were selected from a pool of volunteers from the 10-week survey, via a stratification process across participants with different levels of resource usage:

Usage categories

- 1 – Participant consented to the trial but did not access resource.
- 2 – Participant used the resource for less than 30 minutes.
- 3 – Participant used the resource for between 30 minutes and 2 hours.
- 4 – Participant used the resource for more than 2 hours.

A total of 29 interviews were achieved, as shown in Table 3.

Table 3: Number of qualitative telephone interviews carried out with participants across four different usage categories.

Group	Usage category				Total
	1	2	3	4	
Headspace	3	4	4	4	15
Mindfit Cop	5	3	3	3	14
Total	8	7	7	7	29

The interview questions can be found in Appendix 6. A framework analysis (see Appendix 9) was conducted to determine key points emerging from the interview data.

Limitations

This RCT incorporated many of the best practice components of impact evaluation, but some limitations have inevitably arisen from 'real world' implementation requirements.

Technical issues

People have varying levels of IT literacy. Police employees also have access to different devices and software depending on their role and home force. While this RCT aimed to understand the impact of the training content of online mindfulness resources on police employees, the final findings represent the impact of the whole process of resource access and use. This runs from signup and validation of access codes/registration on the site, through to viewing videos and listening to audio using the devices/software available to the participant, to continuing to use the resources in among other pressures. This is a fair test, given that the aim is to implement the resources for police employees who will be affected by any unresolved technical issues and their level of IT literacy in any future rollout. However, it is also important to recognise the impact more specific technical problems could have had on the ultimate results. There was a substantial period of login difficulties with Mindfit Cop for up to a quarter of allocated participants. All participants who requested help were given technical support by the website owners and the research team. However, many more may not have requested help. The potential impact and implications of these technical difficulties are discussed more in the later section 'User experience of online resources'.

Attrition

Forty-five per cent of the original participants provided survey responses that could be analysed at week 24. The spread of responses was uneven, with a response rate of only 29 per cent in the Mindfit Cop group, compared to 61 per cent in the waiting list control group. Nevertheless, the response cohorts remain large enough to draw confident conclusions. In addition, the responding/non-responding groups did not appear to show any systematic patterns (eg, gender/age). If they had, this would indicate the findings are less generalisable to police employees as a whole than particular sub-groups. The lower response rate in the Mindfit Cop group was considered in light of qualitative feedback and the high proportion of requests for technical support to the project team. The lower response rate may be explained by participants who had experienced technical difficulties with login and usage possibly becoming tired of participation earlier than the Headspace and control groups.

Self-report performance data

Using one self-report item to collect data on performance gives a snapshot of user experience and perception. However, it does not provide substantial objective evidence of the impact of mindfulness on detailed aspects of police performance. The use of the single item was previously justified in a relevant mindfulness and productivity study (Shiba et al, 2015). This was on the basis that data on objective performance is difficult to obtain and significantly complicates the design of studies. This is particularly relevant because more detailed survey items usually have to be heavily tailored to be comprehensible and relevant to particular job roles. As our study needed to span officers, staff, PCSOs, specials and volunteers, tailoring to this detail was not an option. We therefore chose to rely on self-report data and the potential to interpret wellbeing improvements as likely corroborating evidence of improvement on performance. This is thanks to the findings that exist on the positive impact of employee wellbeing on productivity (What Works Centre for Wellbeing, 2017).

Sickness absence data

We requested absence days and spells alongside 'Dorset 12' sickness categorisations (a reporting framework used by the police since 2005 – Hayday et al, 2007). There were not enough of different types of absences classified under the Dorset 12 categories to allow any useful sub-analyses (eg, by mental health issues only).

In addition, sickness absence data did not cover adapted or restricted duties, where the employee is working but not deployed as usual. A previous HSE report (Hayday et al, 2007) noted the difficulty of working with police absence data across forces, due to the range of ways different aspects of sickness absence are recorded (by supervisors, by HR and by OH

teams dealing with long-term sickness and disability). This may provide part of the explanation for why the absence data did not show the same positive trends as the rest of the findings. However, seasonal change (the trial was delivered over winter while the pre-trial data was from spring/summer) may also have influenced these findings.

Long-term effects

The trial ended at 24 weeks and the waiting list participants were given access to Mindfit Cop. It will therefore not be possible to return to the control and treatment groups to report on long-term effects (one to two years). It will also not be possible to judge whether there is any difference between the two treatment groups regarding the extent to which any effects may decrease with time or with removal of access to the resources.

Results

Both the Headspace and Mindfit Cop online mindfulness resources improved wellbeing, life satisfaction, resilience and performance, in comparison to the control group.

Headspace provided greater improvement across these wellbeing outcomes after 10 and 24 weeks, but Mindfit Cop's results improved and moved closer to Headspace's at 24 weeks.

Neither online resource made a positive impact on absence days or spells within the six months of the trial, but self-reported presenteeism behaviours did reduce for both.

Interestingly, participants who reported low job control (ie, little control over their tasks and scheduling) benefited most from using the resources – the opposite of what was expected.

Interview feedback provided insight into how these improvements were achieved. Users reported becoming more reflective about their own thoughts and actions, while learning new techniques for stressful situations. Positive behavioural changes included: taking time out in the day to relax, briefly stopping and thinking in very difficult situations, establishing a meditation practice, and/or returning to or adopting other wellbeing-promoting behaviours, such as yoga and regular exercise. The end benefits were reported as a reduction of stress and anxiety, better sleep and greater focus at work.

Not all participants accessed the resources and reported benefits. There were four key challenges: time (scheduling, not being interrupted), location (difficulties of open-plan offices, whether to use at home), emotion (tackling the guilt of taking time out and embarrassment in front of peers) and technical issues (IT literacy and login issues). Some participants addressed these challenges at a personal level, but others would have only used the resources if they received organisational support of time, space and supervisor permission.

Main results

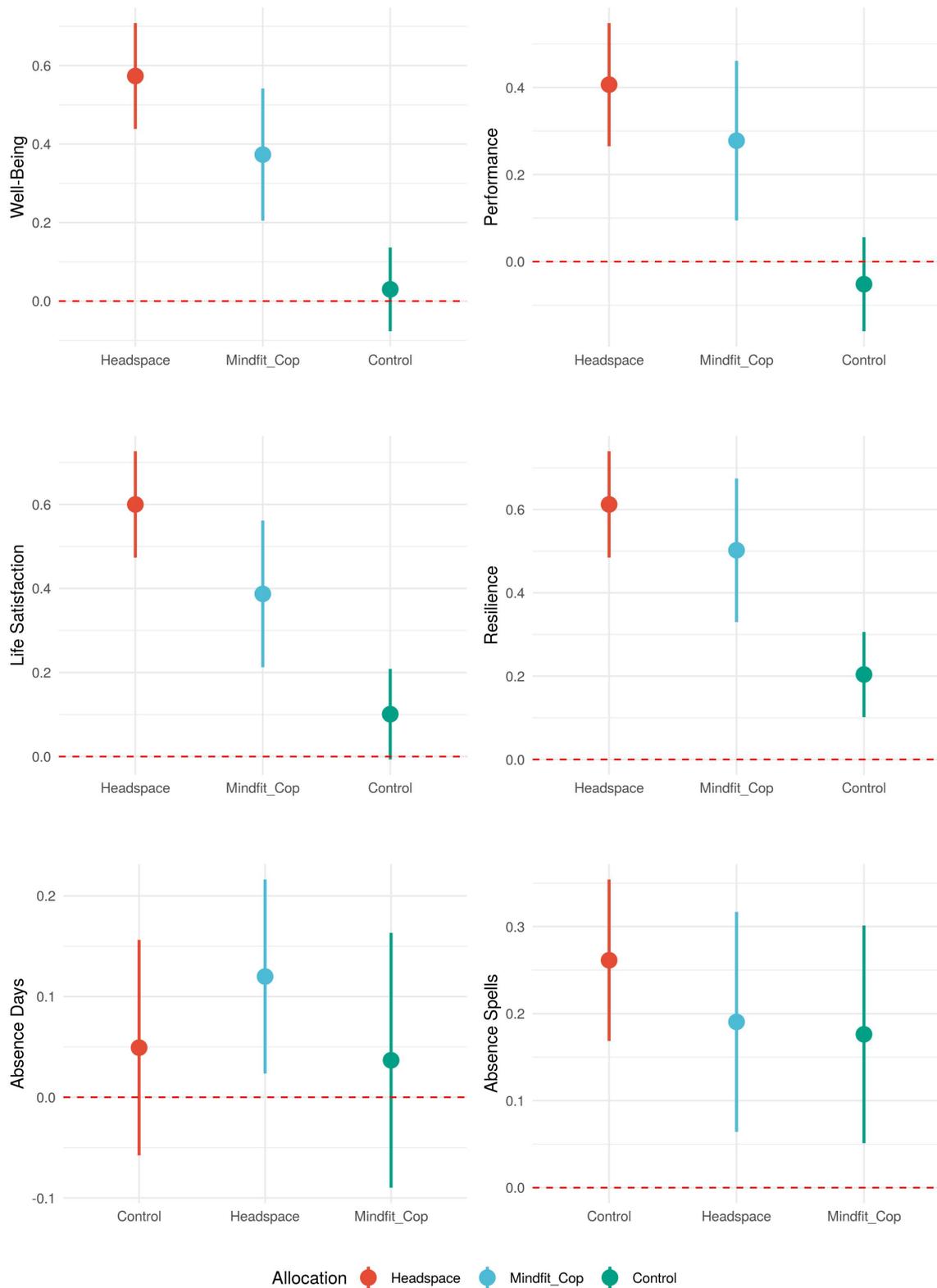
The first analysis investigated the average change in wellbeing, life satisfaction, resilience, performance, absence days and absence spells for the three different groups in the trial. Wellbeing, life satisfaction, resilience and performance all improved for the Headspace and Mindfit Cop groups in comparison to the control group over the 24 weeks (six months) of the trial. The improvement was consistently greater for Headspace than Mindfit Cop and was unchanged for the control group. The improvements for wellbeing, life satisfaction, resilience

and performance are meaningful (for example, improvements of 5–6 points out of 35 for wellbeing and 1.5–2 points out of 10 for life satisfaction and job performance – see Appendix 7 for detail).

Understanding the change in absence days and spells was more complicated. The number of days absent from work in the six months of the trial, compared to the prior six months, was higher for Headspace and unchanged for Mindfit Cop and the control group. The number of absence spells was also higher for the control and both mindfulness groups, though highest for the control group. While a decrease in presenteeism for the Headspace and Mindfit Cop groups might lead to increased absence spells in the short-term, this explanation would not account for the increase in the control group. One simple potential explanation was that the six months of the trial occurred over winter, when sickness absence is more common. The 'Limitations' section outlined potential other reasons for difficulties.

Figure 1 shows the average change in each of these key outcome measures for the control and two treatment groups. The dots indicate the average for the group and the lines indicate the 95 per cent confidence intervals. Where the average value and the confidence interval lies above zero, we can conclude that we are 95 per cent confident that the outcome measure for that group has improved over the trial period. If the confidence interval includes zero, we are unable to conclude that the measure has reliably changed over the trial period.

Figure 1: Difference between pre-intervention and 24-week post intervention scores on all outcome variables (Y axis) for the Headspace, Mindfit Cop and control groups (X axis). Data were scaled to one standard deviation.



The next step in analysis

The research was conducted in a 'real world' setting and not in a laboratory. As such, it is important to check how many of the differences between forces and individuals that exist naturally had an impact on the changes in wellbeing, resilience, etc. that have been described above. This approach helps to better understand the relationship between introducing the resources to participants and them gaining a benefit from it. Could that relationship be influenced by whether they were male or female, or by whether they started using the resources when they already had very high or very low wellbeing? Gaining this understanding is particularly useful to any future rollout. Regression analyses are statistical modelling approaches that allow us to investigate multiple differences at once to understand the key relationships.

There were no statistical differences between the five participating forces and the different age groups involved (details are available from the authors upon request). From the demographic data, only gender and job roles therefore form part of the testing described in the following section.

The regression analyses were based on raw scores (instead of the difference scores used in Figure 1) and controlled for the baseline measurement that was taken before the intervention. This means that for wellbeing we controlled for baseline wellbeing, for resilience we controlled for baseline resilience and so on, in order to understand any interactions between different levels of baseline scores and the resulting outcomes.

Reporting on the hypotheses

Using the findings of regression analyses provides a more rigorous basis to confirm or refute our original hypotheses. The main headline findings have been summarised below, but for more detail please see the regression tables in Appendix 8.

Hypothesis	Results
1 Online training in mindfulness will improve wellbeing, resilience and performance for police officers and staff.	Headspace improved wellbeing, life satisfaction, resilience and performance scores at 10 and 24 weeks. Mindfit Cop improved wellbeing and life satisfaction scores (only) at 10 weeks, but improved all of the primary outcomes (wellbeing, life satisfaction, resilience and performance) at 24 weeks. Accept hypothesis

<p>2a Online training in mindfulness will improve mindfulness skills.</p>	<p>Headspace improved mindfulness scores at 10 weeks.</p> <p>Mindfit Cop did not significantly improve mindfulness scores at 10 weeks.</p> <p>Mindfulness was not surveyed again at 24 weeks.</p> <p>Accept hypothesis for Headspace</p>
<p>2b Online training in mindfulness will reduce sick leave, presenteeism and leaveism.</p>	<p>Headspace and Mindfit Cop reduced presenteeism at 24 weeks.</p> <p>There was no evidence that online training in mindfulness reduced sick leave or leaveism.</p> <p>Accept hypothesis for presenteeism but not for absence days/spells or leaveism</p>
<p>3 Bespoke training aimed at police officers (Mindfit Cop) will improve wellbeing, resilience and performance for police officers and staff more effectively than a generic mindfulness intervention (Headspace).</p>	<p>The generic mindfulness intervention (Headspace) was more effective than the bespoke training at 10 weeks (Mindfit Cop).</p> <p>At 24 weeks, Mindfit Cop and Headspace were both effective interventions across the primary outcomes, but Mindfit Cop did not appear to offer any additional benefits.</p> <p>Do not accept hypothesis</p>
<p>4 Mindfulness training is more likely to be effective for people with high levels of job control in terms of how they structure their day and do their tasks.</p>	<p>Mindfulness training was more beneficial to those with low job control.</p> <p>Do not accept hypothesis</p>

In the final survey, instead of answering the short mindful attention awareness scale again, the trial participants were asked questions on their day-to-day mindfulness behaviours at work or at home in the last month. The majority reported never engaging in mindfulness practice at work (73 per cent), whereas a majority did report engaging in mindfulness outside of work (67 per cent). Those engaging in the interventions were more likely to report both engagement at work (Headspace 35 per cent, Mindfit Cop 33 per cent) and engagement

outside of work (Headspace 83 per cent, Mindfit Cop 54 per cent). We find no evidence that the impact of the interventions is enhanced by more frequent self-reported engagement in mindful practice (results are available from the authors upon request).

Going deeper – feedback from participants

The survey findings suggested that using mindfulness resources had a positive impact on police employee wellbeing. We interviewed users of Headspace and Mindfit Cop to better understand why this positive change might have occurred.

Interview feedback highlighted two key areas of learning for those who had engaged with the mindfulness resources:

- becoming more reflective about their own thoughts and actions
- learning techniques to be ‘here and now’.

Moving from ‘autopilot’ to a more nuanced awareness of everyday thoughts and behaviours is one of the key messages of both Headspace and Mindfit Cop. Where trial participants had used the resources, they had absorbed this message and found it useful:

‘We do all work really really hard and sometimes relentless and just reminding people that you’ve got to stop and pause and think about yourself for a moment if you’re going to be effective in what you do it’s a good thing and all too often we forget that message.’

Mindfit Cop user

There was recognition that it was important to understand participants’ common ‘triggers’ for stress, anxiety and/or depression. As a result of this greater reflection and identification of difficult thoughts or situations, the interviewees reported three key areas of behavioural change:

- taking time out in the day to relax – doing this deliberately and regularly
- briefly stopping and thinking in very difficult situations – being less reactive even in high-pressure situations
- returning to or adopting wellbeing-promoting behaviours – eg, yoga, regular exercise and general self-care.

The following quotes are illustrative of the types of comments offered by interviewees:

'I've got much better at little things – like I'll step away from my desk at lunchtime and I'll go for a walk a bit more now. It's just that making time for me type of thing.'

Mindfit Cop user

'It trains you to accept that it's OK to take that extra two or three minutes to think this one through, before you actually take action.'

Headspace user

Being prompted to consider wellbeing and recognise common stressors had wider knock-on effects for some participants – like taking more time to run, walk, go to yoga or even just ask their kids to give them the space to lie down for 10 minutes on a sofa. This may offer one explanation of why the analysis did not find a link between the extent of self-reported mindfulness practice and impact on wellbeing. Even those who only used the resources a little and did not take to mindfulness may have been reminded of the need for self-care and therefore prompted to take up or restart other activities beneficial to their wellbeing.

The intention behind both of the resources was to foster conscious awareness of everyday situations, an accepting attitude and therefore a greater ability to self-regulate in stressful situations (de Vibe et al, 2017). The feedback from the interviewees suggests that both Mindfit Cop and Headspace were effective in delivering this learning when participants engaged with them. This in turn helped some users to:

- feel less stress and anxiety
- sleep better (Headspace in particular)
- focus better at work
- feel more supported by policing (because the training/resources had been provided to them).

'I've felt quite anxious on occasions in the past. Those are fewer and far between now.'

Headspace user

'I completely struggle to get to sleep so I use the "sleepcast" to help that because it's quite relaxing, and then it tends to send me off to sleep...'

Headspace user

'I was so excited at the thought, you know, that this had been taken seriously, people are putting their time and effort to create something to look after people's mental health in the police environment.'

Mindfit Cop user

Despite glowing reviews from many users, it should be noted that mindfulness training is not for everyone and many trial participants either did not use the resources or used them very little. Consequently, usage barriers are explored in more detail in the next section.

Understanding usage barriers and enablers

The results above give a clear sense that when police officers and staff who are interested in mindfulness are given access to online mindfulness resources, there is likely to be a positive impact on their wellbeing, life satisfaction, performance and presenteeism behaviours. However there is unlikely to be a noticeable impact on their sickness absence or leaveism behaviours (at least in the first six months).

We should note that giving participants access does not mean they use the resources a lot, or even at all in some cases. The flow diagram on page 20 showed that of the 446 originally allocated to Headspace, 120 (27 per cent) did not activate their full subscription code (including the five who officially withdrew). Similarly, of the 445 originally allocated to Mindfit Cop, 94 (21 per cent) did not register for the site (including the eight who officially withdrew). These participants were volunteers who took the effort to request information and fill out the baseline survey, so it is important to question why they did not go on to use the resources.

The following findings, drawn from survey comments and interview feedback, allow us to highlight barriers to usage. These would need to be resolved for greater accessibility and uptake, if the resources were rolled out more widely in the future.

First, it is important to understand that different participants had different reasons for signing up for the training. The reasons were to:

- **learn more about mindfulness** – the participant had previously heard about mindfulness in another way (reading, courses, apps, hearing from others) and wanted to learn more about how to apply it
- **address a difficult situation** – the participant was starting a new job, managing a stressful workload or faced emerging personal problems that made them focus on their need for wellbeing support. They volunteered for the trial to get it

- **address a pre-existing tendency** – the participant knew that they experienced anxiety, stress and/or depression and volunteered to be part of the trial to see if the resources could help
- **be able to understand and share the learning with others** – the participant thought mindfulness might benefit their children, partners, or people in the team they manage
- **take up the offer** – the participant was curious to try something new.

There was not enough data to determine patterns in usage according to users' initial reason for participation. However, some non-users/low users made it clear that they were already very busy, stressed or experiencing mental health issues and this meant that their response to being given the resource was complicated. Introducing a new commitment (to practise mindfulness) seemed like an additional burden to some, rather than a help. A selection of quotes from participants with no or low usage are used to illustrate this:

'I have had some major upheaval in my personal circumstances and have struggled to use Headspace after the initial couple of weeks. I am very interested in the programme and the process but this has been a particularly difficult period. It was just another thing to do in an already overwhelming situation.'

Headspace group, survey comment

'I kind of felt I was on borrowed time because of the stress I felt at work, there wasn't enough hours in the day to do my own work. But I'd go onto the mindful [sic] and kind of felt under pressure – I need to get back to my work.'

Mindfit Cop group, interview comment

'But when it's hectic you're looking for an instant win to persuade you of its usefulness, not something that have to keep doing over and over.'

Headspace group, interview comment

However, there were equally those who were experiencing difficult times who felt able to make use of the resources and gain benefit from them, such as the following:

'This has been a time of change in my life both personally and at work and some of the techniques have been very beneficial to me. I've got back to being a glass half full person and am about to take up a challenge that six months ago I would never have even considered.'

Mindfit Cop group, survey comment

‘Recently I have been dealing with a difficult [person] and several major issues at home. Normally I would struggle to deal without starting down the depression road but with Headspace, I was able to find something for every occasion. I feel I still have a way to go but my sleeping patterns and ability to deal with stress appears to be improved.’

Headspace group, survey comment

Regardless of reasons for initial interest, there were a few very important key barriers common to all the feedback. These actively stopped some participants using the resources. They were seen as challenges to be overcome by others who went on to use the resources a lot. Three barriers are given below and are then followed by another list of ‘enabling actions and thoughts’ that individuals used to try to overcome these challenges.

Barriers

Location

Those who had used the resource more often were much more likely to have used Headspace/Mindfit Cop at home rather than in work time. Participants generally reported that using the resources at work was either not possible or did not feel suitable – especially where they worked in busy and noisy open-plan offices and in response/reactive roles. Participants noted a lack of quiet rooms where they could take time out. Participants who did not use the resources much either preferred not to carry out work activities at home (particularly around Mindfit Cop, which was perceived as more like a work duty than Headspace) or would have liked to, but did not find the time or space in their personal lives to do so. While a few participants managed to successfully use the resources at work, they noted that they had to pick their times (eg, start of day/end of the day/lunch break) or that they worked in small offices/from home anyway, so they were able to complete their mindfulness training within work time.

‘Open plan is not conducive ... I don’t think there’d be anywhere quiet to go. Where would you ... I’m just trying to think where [laughs] where you could go and sit in a chair and shut your eyes. All of our quiet rooms have got windows that look into them. Everywhere else is open space.’

Participant who used Headspace extensively at home

‘I did sort of sneak off when I did the early ones and found some quiet space. Again, there’s a couple of meeting rooms, but again, you know you can’t rely on them for

exclusive use. Anyone can come along and you can get turfed out, it's not the best sort of environment.'

Participant who tried to use Mindfit Cop at work initially

Time

Time barriers were heavily linked with location – people who tried to use the resources in work, in open-plan offices, felt very restricted for time. Simply put, the harder people found it to schedule in sessions due to workload and unpredictable work days, the lower usage they achieved. The nature of response roles meant that people reported logging in, starting sessions and then being called out on urgent jobs. Others noted that they believed that the course might help them schedule in time to relax/be mindful, but that they almost needed the training first to be able to work out how to do that scheduling, leaving them with a 'chicken and egg' situation.

'[At work...] I've not really even had a proper break or anything either because there's just so much to do. So it, yeah it is kind of trying to make you focus on yourself sometimes when it's things like that. Is actually taking 15, 20 minutes away from your computer, really going to change anything to what you're doing? It's hard sometimes when you're kind of in that moment.'

Participant who used Mindfit Cop mostly at home

'Obviously work life is 10 hour shifts – it's very busy. It's very difficult to get away from my desk for any length of time. So it took a while. It took a few weeks until I got into using it but eventually. I used to go out at lunch times and just have 10 minutes I just sit in my car.'

Participant who used Headspace mostly at work and at bedtime at home

Emotion

While many participants reported being excited by the prospect of learning more about mindfulness, the training opportunity also roused a range of difficult emotions in some participants. These included feelings of guilt (if attempting to do the training in work time), disappointment in one's own organisational ability (if failing to complete much of the training) and embarrassment (eg, some participants wanting to keep their participation and/or practice away from supervisors or partners/family members). These emotions had practical consequences: for instance one participant reported that as she learnt more about mindfulness, she learnt to feel 'brave' enough to tell her family that she was going off to spend 10 minutes on mindfulness practice, but at the start she had to use her car for the

practice to be alone. Others reported that the lack of private rooms without windows in the station meant that they did not get to participate because people might 'look in' and wonder why they were taking time off.

'My husband does know I have been doing it but I find it embarrassing when he is about.'

'It is hard to take any breaks for Headspace without questions being asked or feeling guilty.'

Headspace users

'But I wouldn't go to my supervisors to ask for help to get into it, because this was something I wanted to be private. I wasn't really advertising that I was doing it.'

Mindfit Cop user

Enablers

Some trial participants used the resources extensively, even in the face of the key challenges described above. Their feedback offered learning points that were summarised and sent out to the waiting list participants when they received access to Mindfit Cop after six months. The learning points were paraphrased from interview feedback and summarised as follows:

- Make sure you have some headphones handy before you start, as there will be videos with talking involved.
- Find a quiet and private place to view at least the first week of course materials – whether this is your office, on a laptop in a meeting room, on your phone in a (parked) car, at home or anywhere else you can comfortably view the website.
- Schedule in the times you'll view the course/practise mindfulness. Some people were able to schedule time in the working day while others found it easier/preferred to use breaks or very early in the morning/late at night.
- Think of the time you spend on this course as time for self-investment. Relatively small periods of time can make a big difference.
- Stick at it. Once you learn a little bit of mindfulness it gets easier to find the time over time.
- Don't worry if you like the sound of one presenter's voice better than the other. All of the mindfulness practice downloads are available in both voices so you can choose which one you would prefer to listen to.

- Give yourself space by letting others (work colleagues/family) know how long you'll be away for (eg, 10 mins) when practising mindfulness. Ask for no interruptions.
- If you miss a daily practice day, don't worry, but resolve to find the time the next day to pick it straight back up again.

These are of course enablers aimed at the individual. However, some participants indicated that they wanted an organisational-level response to provide protected time, space and reassurance for those who would otherwise find it hard to engage. Not all participants wanted to extend their use of what they saw as 'police-related' activities into their personal life, while others were much more comfortable using the resources at home than at work.

In addition to all of the above, technical difficulties were also a substantial barrier to usage for some participants. The user experience of the online resources is summarised below, to provide learning points for any future rollout.

User experience of online resources

There was a very mixed response to the online resources. Summary of the survey comments and interview feedback specifically about the two different websites are given below. However, it should be noted that some participants felt an app or website of any kind was not their preferred route for learning about mindfulness. They saw person-to-person training as easier to fit into the working day (assigned time) and remember to do (if it is a regular weekly meeting).

Headspace

Headspace was generally perceived as attractive, high quality and usefully portioned into 'bite-size' sessions. Interview participants seemed particularly keen to recommend the app to others and some even wanted to recommend it even if they had not used it much themselves. The app was preferred to the website because it allowed quick and easy access without the repeated need to log in.

The sleep sessions on Headspace were repeatedly mentioned throughout the interviews and comments as particularly helpful. As there was no equivalent on Mindfit Cop, this may have been one of the areas in which Headspace offered an advantage over the website. Those who used the sleep sessions used them a lot and reported a great deal of difference to their lives – for example:

'Where it was particularly good for me was the sleep. It has a whole section on it to help with sleep and I've almost got to the point now where – the other night – I get a

bit worried about the fact that I almost can't get to sleep without it now! [laughs] I have to have my Headspace sleep time wind down now to get to sleep. It's been great, been really good.'

Headspace user, interview comment

Some participants found it hard to validate their subscription code for Headspace. Technical support revealed that some participants had previously downloaded the Headspace app and used the free sessions at some time before the trial. This meant that they already had an existing account name attached to a different email address. Although this issue was easy to resolve with our support, emails and calls still arriving towards the end of the trial suggested that some participants had not activated their code properly and had only been using the basic free sessions. The extent of this issue is unknown, but may suggest why the lack of use seems so high (over a quarter of the cohort) but the overall effect on wellbeing is still substantial.

Mindfit Cop

For those who used the course a lot, there was praise for the integrity of the content and the ability to download the practices to a phone for use outside of the course. However, there were also complaints of technical issues. Login was a particular problem, with the automatic validation email not always arriving, even when the website had a record of sending it. This may have been a firewall or spam protection issue that applied to only some participants, but we could find no patterns by force or department. While individual help was always given when requested and a high proportion of the initial issues were down to user error (eg, spelling their own email addresses wrong or attempting to log in before registering), some technical issues were unresolved at the end of the trial. The following areas were highlighted as key for resolution before any future rollout:

- make the login process foolproof and check any automatic email processes for issues
- ensure that there is a 'helpdesk' number for people trying to sign up and use the site as people are put off very quickly if they cannot start immediately
- consider accessibility issues (transcripts/subtitles, etc.) and embed accessibility options
- review the aesthetics of the course elements within the site to make it clear that it is not just another compulsory police course
- there was disagreement amongst the different interview participants over which voice (male/female) they preferred. Provide a note early on that explains why there are two

versions of each mindfulness practice download and say it is fine to choose the person with the accent you prefer

- provide option control on reminders. Some people liked the reminders, some people disliked them. Making it easy for people to turn them on and off themselves would be useful
- make it clearer how people can download the audio sessions direct to their phones.

Technical issues may have affected the findings that suggested there was only limited positive impact at 10 weeks. This explanation is supported in part by the fact that all of the benefits of Mindfit Cop became larger and more significant after 24 weeks (once most of the issues had been resolved and were in the past for participants). If people are already stressed and overloaded (which may be why they want to access the resource) we found that they were particularly intolerant to any small technical issue, even if resolved on the same day.

'I had to ring in several times ... just to get logged in and the initial login. I haven't bothered with it. In fact I forgot about it, I got bored with it and it wasn't helpful.'

Mindfit Cop user

For this reason, clear instructions, easy-to-use resources and helplines are vital to ensuring benefit from any future rollout.

Conclusions and implications

This trial has produced strong evidence that online mindfulness training can be beneficial for the wellbeing of police employees. However, as with any wellbeing intervention, implementation involves practical considerations, like costs and how to communicate the opportunity to use the resource. These require careful thought in any future rollout.

Maximising the benefits to policing of mindfulness training will involve listening to user feedback on potential barriers to participation: time, location, emotion and technical issues. Tackling these potential barriers could involve: providing quiet rooms, hosting group sessions in breaks, providing clear permission to complete the training elements of the mindfulness resources in work time, easy-to-use online interfaces and simple instructions for registration and login.

Conclusion

Both Headspace and Mindfit Cop provide benefits to wellbeing. Headspace provided greater benefits in the context of this trial.

Mindfit Cop offers a viable option for improving wellbeing, resilience and performance in police employees. There is currently no evidence that this would have an impact on deployable resources in the form of reducing sickness absence. However, the wellbeing benefits could be reasonably expected to have knock-on effects for productivity and performance (What Works Centre for Wellbeing, 2017). The cost of development has already been absorbed into the cost of the trial, but a budget would be necessary for ongoing web development, hosting, maintenance and tech support – whether this would be managed externally or under the scope of Oscar Kilo and the NPWS. Success would rely on the ongoing resolution of any technical barriers to use.

Headspace also offers a viable option for improving wellbeing, resilience and performance in police employees. As with Mindfit Cop, there is currently no evidence that this would have an impact on deployable resource. However, the same productivity and performance consequences could be expected. The Headspace app was attractive and easy to use, which may have contributed to the fact that the impact of Headspace was consistently larger than Mindfit Cop, especially during the first few months of use. However, there are significant ongoing cost implications related to annual licensing. If forces were interested in accessing Headspace, it is recommended that a mechanism be put in place to allow coordinated bulk purchasing to reduce unit costs.

Considerations for rollout

Challenges

Not all participants used the opportunity to access the online mindfulness resources. User feedback highlighted four key challenges that meant some people did not feel able to make meaningful use of resources. The challenges were: time, location, emotion and technical issues. In order to maximise the benefit from making mindfulness resources available in policing, consideration should be given to mitigating each of these challenges as far as possible in forces and at national level. Some suggestions are given below for ways in which the challenges could be addressed:

- Ensure that there is a small 'quiet room' in each station that could be used for short breaks away from open-plan spaces. Users suggested that there should not be a window in the door (allowing the occupants to be watched) or keycard entry recording who used the room, to ensure that it was a genuine relaxation space.
- Ensure that supervisors are briefed on the benefits of mindfulness and clear that if they are happy to allow users to access short periods of mindfulness training in work time, they will need to make that permission very clear on multiple occasions.
- In forces, book a quiet room for short group lunch- or break-time meditation sessions, to provide a regular space to practise and reminder about mindfulness.
- Ensure that any instructions given to potential users of mindfulness resources are very clear, to overcome simple login issues.
- Ensure that the functionality of Mindfit Cop is reviewed to overcome technical issues, especially around login and automatic emails for password creation/change.
- Advertise that Mindfit Cop's website is suitable for use on mobile devices.

Communications

For the research trial, mindfulness champions were engaged for each participating force. They ensured that there was senior buy-in for the trial and they interacted with their communication teams to promote the research and the resources. This communication activity was vital for the success of the trial.

For any future rollout, a communication strategy will be required – either at a national or force level, depending on the nature of the offer. This needs to be constructed carefully, with due consideration for the fact that mindfulness can be seen as 'soft', 'alternative' or

'religious' by those who are unfamiliar with how it is presented from a secular point of view and has been developed as a scientifically evidenced option.

Previous experience has suggested that testimonials gathered from 'people like us' (ie, a range of officers, staff and other parts of the workforce) can be useful in persuading police employees to consider mindfulness. However, a large part of any communications campaign will include dispelling myths and likening mental fitness to physical fitness. Both are required to do the job.

Forces need to acknowledge that, to benefit from any future force-wide offer, upfront time and resourcing will be necessary within the organisation to promote take-up and answer any questions. Communications strategy at a national level will be discussed after the production of this report.

Costs

There were one-off costs associated with gaining access to/developing the online resources for this trial. The Headspace licences for the trial cost £12,000 and the combined costs to develop Mindfit Cop (covering expert input into the curriculum creation and the development of the website) totalled £38,000. There were also protocol development and analysis costs associated specifically with the research trial, as well as research capability provided within the College. None of these costs would be repeated in any future rollout.

Mindfit Cop

The website was developed using a College grant. Ongoing costs would be relatively low, but a budget and resourcing would still be essential. Resourcing will be required for limited web development, web hosting, maintenance and technical support if the content is made available in future. The findings highlighted the need to make any online offer as easy to use as possible and make help available to ensure people can access content when they need to. This is only possible via a monitored and maintained site.

The current plan is for the Mindfit Cop content to be available via the existing Oscar Kilo website (<https://oscarkilo.org.uk/>). Oscar Kilo was set up with the aim of being the place to share learning and best practice on wellbeing amongst the emergency services. Since April 2019, it has also become the home of information on the NPWS. This means that the website is currently hosted and maintained under the funding available via the NPWS alongside all of the other NPWS content, so separate costs are not available for the Mindfit Cop element.

The consequences of this funding profile are that any future offer or review will take place at a national level via the NPWS.

Headspace

Headspace costing works on volume-based discounted tiers. If there were any forces that wanted to continue using or start offering Headspace, the police service would benefit from a mechanism to allow interested forces to sign up and bulk buy licences.

Headspace is open to negotiating costs of subscriptions and wider service packages, which include education and training, communication materials and an admin dashboard to manage subscriptions.

Future research

While male police employees may have been under-represented in this study for reasons of self-selection, the recently published findings of a German RCT (Krick and Felfe, 2019) give early indications that mindfulness interventions can also be useful in groups of male employees who do not self-select.

The trial has been robust enough to provide evidence of wellbeing benefits, so no further research is proposed at this point. However, if future proposals included face-to-face training, a comparison study would be beneficial.

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Appendices

Appendix 1: Technical abstract

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Trial design	Three-arm parallel design comparing outcomes for two treatment conditions and one waitlist control group.
Methods	
Participants	<p>Police employees (including ranking officers, police staff, police community support officers, special constables and helpers).</p> <p>Participants were volunteers from within five forces – Avon and Somerset, Bedfordshire, Cambridgeshire, Hertfordshire, South Wales.</p> <p>Exclusion criteria:</p> <p>Already following a structured mindfulness intervention.</p> <p>Already undertaking a therapeutic wellbeing intervention (such as counselling and cognitive behavioural therapy).</p> <p>Did not complete the baseline survey.</p>
Interventions	<p>Headspace (a commercially available mindfulness app and website).</p> <p>Mindfit Cop (a bespoke online eight-week mindfulness course for policing).</p> <p>The waitlist (who completed all surveys before receiving access to Mindfit Cop after six months).</p>
Objective	To understand: for police officers and staff in England and Wales, is receiving online mindfulness training via Headspace and/or Mindfit Cop more effective than the status quo (represented by a waiting list group) in increasing positive wellbeing-related outcomes, such as mental wellbeing, resilience and performance?
Outcome	<p>Primary intended outcomes:</p> <p>Increased self-reported wellbeing</p> <p>Increased self-reported resilience</p> <p>Increased self-reported performance at work</p>

Randomisation	Equal proportions allocated to the three arms of the study, using a unique research ID and a Microsoft Excel random number function.
Blinding (masking)	No blinding. All participants were aware of their own allocation, as was the trial manager.
Results	
Numbers randomised	1,337 participants randomised equally to three groups. 15 officially withdrew during the first 10 weeks. 214 did not use the resources (120 Headspace/94 Mindfit Cop) during the 24 weeks of the trial.
Numbers analysed	Survey data: 1,322 usable responses from the baseline. 709 from the 10-week survey. 597 from the 24-week survey. Note: some of these responses were not usable for all analyses because of missing values to specific questions. Absence data: 1,322 participants.
Outcome	Significant improvement in all three primary outcomes at 24 weeks, for both Headspace and Mindfit Cop (in comparison to the control group). As well as the primary outcome variables, the regression analyses (Appendix 8) incorporated gender, role, job control and the pre-intervention scores for each relevant variable. A percentage is given below, based on the R ² for each model, for how much of the variance in each of the primary outcome measures was explained by this combination of variables. Wellbeing – 30% Headspace – $\beta = 6.36$, SE = 1.45, $p < 0.001$ Mindfit Cop – $\beta = 5.10$, SE = 1.69, $p < 0.01$ Resilience – 28% Headspace – $\beta = 0.99$, SE = 0.24, $p < 0.001$ Mindfit Cop – $\beta = 0.69$, SE = 0.27, $p < 0.05$ Job performance – 22% Headspace – $\beta = 1.57$, SE = 0.56, $p < 0.01$ Mindfit Cop – $\beta = 1.89$, SE = 0.66, $p < 0.01$

Harms	None recorded.
Conclusions	Using online mindfulness resources helps improve the wellbeing, resilience and performance of police officers and staff in comparison to the status quo.
Funding	The College of Policing.

Appendix 2: Survey measures

The surveys used in this RCT were developed by the RCT development team: Pantelis Solomon and Mark Egan at the Behavioural Insights Team, Kevin Daniels and Sara Connolly at the University of East Anglia and Catherine Owens and Helen Fitzhugh for the College of Policing. Choices were made based on the likelihood to be responsive to change (eg, focusing on scales known to respond more to 'states' than 'traits') and also to achieve parsimony in the survey tool, given the chance of survey fatigue. The following sources provided the basis for the measures in the survey.

Wellbeing – NHS Health Scotland, University of Warwick and University of Edinburgh (2006) The Short Warwick-Edinburgh Mental Wellbeing Scale. Available for non-commercial purposes at <https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/about/>

- Wellbeing scores were aggregates of responses to seven questions on a five-point scale. Participants could score 7–35.

Life satisfaction – Office for National Statistics (2018) Surveys using our four personal wellbeing questions. Available from <https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/methodologies/surveysusingthe4officefornationalstatisticspersonalwellbeingquestions>

- Life satisfaction scores were from a single item scale ranging 0–10.

Resilience – Smith, B., Dalen, J., Wiggins, K., Tooley, E., Christopher, P and Bernard, J., (2008) The brief resilience scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine*, 15, 194–200.

- Resilience scores were aggregates of responses to six questions on a five-point response scale, where some items were reversed to ensure that a higher score consistently indicated greater resilience. Participants could score 6–30.

Work performance – a single item from the World Health Organization Health and Work Performance Questionnaire (WHO – HPQ), following the example of: Shiba, K., Nishimoto, M., Sugimoto, M. and Ishikawa, Y. (2015) The Association between Meditation Practice and Job Performance: A Cross-Sectional Study. *PLoS One*, 10(12): e0145140.

- Work performance scores were from a single item scale ranging 0–10.

Mindfulness – five-item scale: Osman, A., Lamis, D.A., Bagge, C.L., Freedenthal, S. and Barnes, S. (2015) The Mindful Attention Awareness Scale: Further Examination of Dimensionality, Reliability, and Concurrent Validity Estimates. *Journal of Personality Assessment*, 98(2), 189–199.

- Mindfulness scores were aggregates of responses to five questions on a five-point response scale. Participants could score 5–25.

Presenteeism, leaveism, restricted duties – custom questions for this study

- Yes/no questions.

Job control – questions adapted from: Department for Business, Innovation and Skills (2011) Workplace Employment Relations Study (WERS). Available from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/34814/11-804-wers6-workplace-study-2011-survey-of-employees.pdf

Appendix 3: Baseline survey



Mindfulness training

1. Mindfulness training – information and consent

Thank you for your interest in the mindfulness training. If you take part, you will help us understand what can improve and support the wellbeing of officers and staff nationally.

About the training

1. This training is being organised and run by your police force and the College of Policing. People who apply will either be given free access to online mindfulness training, or be put on a waiting list for the training. You can use the training as much as you like, and you can stop any time you want. Nobody in your force will know how much you have accessed the course. Everyone will use it differently, however you may find 10-20 minutes a day of mindfulness practice to be useful, over 8 weeks.
2. To help us evaluate whether the training has been successful, we will ask you some questions about wellbeing, resilience and performance now, 10 weeks after the start of the training period (whether you have been given access to the training or placed on the waiting list) and 6 months after. Each time we ask you questions, the questionnaire will take no more than 10 minutes to complete.

How we will use your information

The College of Policing cares about your privacy and any data you supply will be held securely and managed appropriately. Please read the points below carefully to understand what information we will request if you choose to take part.

1. By applying, you consent for selected personal data (age, gender, officer/staff status, rank or equivalent standing, sick leave information) to be gathered from your HR records and used alongside your survey responses in the evaluation of the training in an anonymised form. We will use this information in statistical analysis to help us understand whether the effectiveness of the training is influenced by any of these characteristics. Your name will not be used in the analysis, nobody at your force will see your individual survey responses and no information that could identify you will ever be made public.
2. To validate your log-in to the mindfulness resources, we will need to pass your email address to the website administrator. By applying, you consent for us to pass your email address for this reason, and also consent for us to collect usage data. Usage data will help us understand whether the success of the training depends on how much people use the online content. How much each individual has used the content will never be made public or reported back to your force.
3. The College of Policing will hold your data securely. We may recruit an external evaluator to process the data once the training is complete. They would receive your anonymised survey responses, HR details and usage statistics for the purpose of the evaluation only – they will never know your name, or who took part. An evaluator will only be appointed if they conform to our strict security and data handling requirements. If you would like to find out more about these, please email Helen.Fitzhugh@college.pnn.police.uk
4. The College carried out a Privacy Impact Assessment and each force reviewed it before taking part. This document can be made available to you by contacting Helen.Fitzhugh@college.pnn.police.uk
5. We will keep your email address for a year after the final report for the project has been published. After that time, your email addresses will be deleted from our files, but the anonymised data may be retained for further research. The status of this anonymised data will be reviewed annually.
6. You can withdraw your consent and opt out of the training at any time by contacting Helen.Fitzhugh@college.pnn.police.uk Your personal data will no longer be used in the analysis and will be deleted.
7. For more information about your rights please see our full privacy notice on our website, which can be found on [the legal page of our website](#). You can also contact our Data Protection Officer by emailing: Data.Protection@college.pnn.police.uk

The College of Policing will publish a report on the results of the trial and the results may also be reported in academic papers.

If you consent to your information being processed in this way, please select the 'yes' option below and click next to answer the remaining application questions.

Do you consent to your information being processed as described above?

Yes → Page 3

No → Page 2

2. Thank you for your interest

Thank you for your interest in the mindfulness resources.

We're sorry you will not be taking part.

The mindfulness resources are currently only available as part of the research trial. We cannot make them available to non-participants, until we have tested their effectiveness via our research study.

There may be further opportunities in the future to access the resources, once we know how effective they are.

If you have any queries, please contact wellbeingresearch@college.pnn.police.uk

3. Unique research code

When you received our email with the link to this survey, in the same email you will also have been sent a unique research ID code. This is a five-digit number. Using this code means we will not have to ask you to enter your email address, name or contact details here on the survey website alongside your answers to wellbeing, resilience and performance questions. Please take extra care to make sure you are entering your code correctly.

4. Checking eligibility

Are you currently doing any type of structured mindfulness course (eg, Headspace or an in-person course)?

No → Next question

Yes → Page 5

Are you currently receiving talking therapy (eg, Cognitive Behavioural Therapy or counselling)? We are asking this because people who are receiving talking therapy should finish their course of therapy before beginning mindfulness training.

No → Page 7

Yes → Page 6

5. Sorry – you are not eligible at this time

Thank you for your interest in the mindfulness resources we will be trialling.

We're sorry, but we can't accept your application to take part at this time.

We are conducting a research trial to test whether two different mindfulness resources (Headspace and Mindfit Cop) can improve people's wellbeing, resilience and perception of their own job performance.

To keep the test fair, we can't accept people into the trial who are currently using Headspace already or are actively in the process of following a different online/in-person course, as this would confuse the results. We're sorry this means you are not currently eligible, but there may be further opportunities in the future to access the resources, once we know how effective they are.

If you have any queries, please contact wellbeingresearch@college.pnn.police.uk

6. Sorry – you are not eligible at this time

Thank you for your interest in the mindfulness resources we will be trialling.

We're sorry, but we can't accept your application to take part at this time.

We are conducting a research trial to test whether two different mindfulness resources (Headspace and Mindfit Cop) can improve people's wellbeing, resilience and perception of their own job performance.

We have been advised that it would benefit anyone currently following a course of counselling or other therapeutic support to continue with that treatment and complete it, before embarking on training in mindfulness. This means that unfortunately, we cannot accept your application at this time, but there may be opportunities to access these mindfulness resources in the future, once we know how effective they are.

If you have any queries, please contact wellbeingresearch@college.pnn.police.uk

7. Questions

Over the last 2 weeks, how often would you say the following statements have been true about you?

	Never	Rarely	Sometimes	Often	Always
I've been feeling useful	<input type="checkbox"/>				
I've been feeling optimistic about the future	<input type="checkbox"/>				
I've been able to make up my own mind about things	<input type="checkbox"/>				
I've been dealing with problems well	<input type="checkbox"/>				
I've been feeling close to people	<input type="checkbox"/>				
I've been thinking clearly	<input type="checkbox"/>				
I've been feeling relaxed	<input type="checkbox"/>				

Overall, how satisfied are you with your life nowadays?

0 – Not at all satisfied	1	2	3	4	5	6	7	8	9	10 – completely satisfied
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Over the last 2 weeks, how often would you say the following statements have been true about you?

	Never	Rarely	Sometimes	Often	Always
It seems I am “running on automatic”, without much awareness of what I’m doing	<input type="checkbox"/>				
It has been hard for me to snap back when something bad happens	<input type="checkbox"/>				
I’ve had a hard time making it through stressful events	<input type="checkbox"/>				
I do jobs or tasks automatically, without being aware of what I’m doing	<input type="checkbox"/>				
I rush through activities without being really attentive to them	<input type="checkbox"/>				
I get so focused on the goal I want to achieve that I lose touch with what I’m doing right now to get there	<input type="checkbox"/>				
I’ve come through difficult times with little trouble	<input type="checkbox"/>				
I’ve tended to take a long time to get over setbacks	<input type="checkbox"/>				
It has not taken me long to recover from stressful events	<input type="checkbox"/>				
I’ve tended to bounce back quickly after hard times	<input type="checkbox"/>				
I find myself doing things without paying attention	<input type="checkbox"/>				

8. Questions II

How much control would you say you have over the following parts of your work?

	None	A little	Some	A lot
The order in which you do tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The pace at which you work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The time you start or finish your working day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How you do your work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The tasks you do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

On a scale of 0 to 10, where 0 is the worst job performance anyone could have at your job and 10 is the performance of a top worker, how would you rate your overall performance on the days you worked during the past 2 weeks?

0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>										

Over the last six months have you...

	Yes	No
Gone to work when you were sick?	<input type="checkbox"/>	<input type="checkbox"/>
Taken annual leave instead of calling in sick?	<input type="checkbox"/>	<input type="checkbox"/>
Gone on restricted duties for any reason?	<input type="checkbox"/>	<input type="checkbox"/>

9. What happens next?

Thank you for completing the questionnaire.

Our application window is still open, so please encourage any of your colleagues who may be interested to apply!

What happens next?

Once the application window closes, the College of Policing will send you an email on, or in the five working days following, 20th September 2018. This will let you know whether you have been given free access to online mindfulness training, or been put on a waiting list for the training. The email will let you know how to gain access to the resources assigned to you.

Please bear with us if you don't get your email on 20th September, but someone else in your force or office does. We will be operating a staggered start so that the online resources are not placed under too much stress by many people logging in at the same time. Be reassured that if you completed this questionnaire, you will be receiving an email from us.

Thanks again for taking part – we hope you find it worthwhile!

Appendix 4: 10-week survey



Mindfulness training II

1. Mindfulness training – information and consent

Thank you for taking part in the research trial to assess the effectiveness of mindfulness training resources.

This short questionnaire is for all participants – including those who have used Mindfit Cop a lot, a little or not at all. Everyone's responses are important because they will help us determine what works with regard to improving wellbeing in policing.

At the end of the questionnaire you will be given the chance to comment on the experience of taking part in the research trial.

If you would like to review the privacy notice for trial participation again, it was included in the email that arrived containing this link. The privacy notice sets out how your data will be used and your rights with regard to withdrawal from the trial. If you have any queries after consulting the privacy notice, please contact wellbeingresearch@college.pnn.police.uk and we will be happy to help.

Please click below to start the questionnaire.

2. Unique research code

When you received our email with the link to this survey, in the same email you will also have been sent a unique research ID code. This is a five-digit number. Please enter your code here. Please take extra care to make sure you are entering your code correctly.

3. Questions

Over the last 2 weeks, how often would you say the following statements have been true about you?

	Never	Rarely	Sometimes	Often	Always
I've been thinking clearly	<input type="checkbox"/>				
I've been able to make up my own mind about things	<input type="checkbox"/>				
I've been dealing with problems well	<input type="checkbox"/>				
I've been feeling useful	<input type="checkbox"/>				
I've been feeling close to people	<input type="checkbox"/>				
I've been feeling optimistic about the future	<input type="checkbox"/>				
I've been feeling relaxed	<input type="checkbox"/>				

Overall, how satisfied are you with your life nowadays?

0 – Not at all satisfied	1	2	3	4	5	6	7	8	9	10 – completely satisfied
<input type="checkbox"/>										

Over the last 2 weeks, how often would you say the following statements have been true about you?

	Never	Rarely	Sometimes	Often	Always
I've come through difficult times with little trouble	<input type="checkbox"/>				
I find myself doing things without paying attention	<input type="checkbox"/>				
I do jobs or tasks automatically, without being aware of what I'm doing	<input type="checkbox"/>				

	Never	Rarely	Sometimes	Often	Always
I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there	<input type="checkbox"/>				
It has been hard for me to snap back when something bad happens	<input type="checkbox"/>				
It seems I am "running on automatic", without much awareness of what I'm doing	<input type="checkbox"/>				
I rush through activities without being really attentive to them	<input type="checkbox"/>				
I've had a hard time making it through stressful events	<input type="checkbox"/>				
I've tended to take a long time to get over setbacks	<input type="checkbox"/>				
I've tended to bounce back quickly after hard times	<input type="checkbox"/>				
It has not taken me long to recover from stressful events	<input type="checkbox"/>				

4. Questions II

How much control would you say you have over the following parts of your work?

	None	A little	Some	A lot
The time you start or finish your working day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The order in which you do tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The pace at which you work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The tasks you do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How you do your work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

On a scale of 0 to 10, where 0 is the worst job performance anyone could have at your job and 10 is the performance of a top worker, how would you rate your overall performance on the days you worked during the past 2 weeks?

0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>										

5. How did it go?

Overall, how easy was it for you to:

	0 – not at all easy	1 – not very easy	2 – easy	3 – very easy
Find the time to start using Mindfit Cop?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Continue using Mindfit Cop regularly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thinking about design and usability, how easy was it for you to:

	0 – not at all easy	1 – not very easy	2 – easy	3 – very easy
Log in to use Mindfit Cop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Find out what to do next once inside the course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
View videos and graphics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access it via work computer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access it via your work phone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access it via your home computer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access it via your personal mobile phone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

How relevant was the content for you?

0 – Not at all relevant	1 – Not very relevant	2 – Relevant	3 – Very relevant
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To what extent do you agree or disagree with the following statements:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I would recommend Mindfit Cop to a colleague	<input type="checkbox"/>				
It would be useful for more police officers and staff to use Mindfit Cop	<input type="checkbox"/>				

6. Comments welcome

Do you have any other comments about your experience of using Mindfit Cop? Feel free to comment on any aspect of your involvement – positive or negative – whether you used the resource a lot, a little or not at all. We're interested in hearing the full range of people's experiences.

We will also be carrying out some short telephone interviews for this research. We will email volunteers to be interviewed in January 2019, to arrange a mutually convenient time for the telephone call. If you would be willing to take part in a short telephone interview about your experiences, please select 'yes'.

Yes

No

8. What happens next?

Thank you for completing the questionnaire.

By doing so, you are helping to build the evidence base on what works to improve the wellbeing of your colleagues in policing.

What happens next?

At the start of March 2019 the College of Policing will send you a final, short survey. This will let us check whether, six months after our participants were given access to mindfulness resources, there has been any long-term effect on wellbeing.

In the meanwhile, we will work on analysing the initial data collected for this research trial. We will look for indications of whether the mindfulness resources have proven effective in raising wellbeing, resilience and performance in the short-term.

The report for the first phase will be completed by the end of March 2019, with further analysis of the 6-month survey data taking place in the summer of 2019.

Once we have finalised our research reports, we will email and let people know the results of the trial.

A big thank you again for taking part – we hope you enjoyed using Mindfit Cop!

Appendix 5: 24-week survey



Mindfulness training – final survey

1. Mindfulness training – information and consent

Thank you for taking part in the research trial to assess the effectiveness of mindfulness training resources. This is the final survey.

Please help us complete our research by responding to this survey.

It doesn't matter if you have used Mindfit Cop a lot, a little or not at all. Everyone's responses are important because they will help us determine what works with regard to improving wellbeing in policing.

At the end of the questionnaire you will be given the chance to comment on the experience of taking part in the research trial.

If you would like to review the privacy notice for trial participation again, it was included in the email that arrived containing this link. The privacy notice sets out how your data will be used and your rights with regard to withdrawal from the trial. If you have any queries after consulting the privacy notice, please contact wellbeingresearch@college.pnn.police.uk and we will be happy to help.

Please click below to start ...

2. Unique research code

When you received our email with the link to this survey, in the same email you will also have been sent a unique research ID code. This is a five-digit number. Please enter your code here. Please take extra care to make sure you are entering your code correctly.

3. Questions

Over the last 2 weeks, how often would you say the following statements have been true about you?

	Never	Rarely	Sometimes	Often	Always
I've been thinking clearly	<input type="checkbox"/>				
I've been feeling optimistic about the future	<input type="checkbox"/>				
I've been feeling relaxed	<input type="checkbox"/>				
I've been feeling close to people	<input type="checkbox"/>				
I've been dealing with problems well	<input type="checkbox"/>				
I've been able to make up my own mind about things	<input type="checkbox"/>				
I've been feeling useful	<input type="checkbox"/>				

Overall, how satisfied are you with your life nowadays?

0 – Not at all satisfied	1	2	3	4	5	6	7	8	9	10 – completely satisfied
<input type="checkbox"/>										

Over the last 2 weeks, how often would you say the following statements have been true about you?

	Never	Rarely	Sometimes	Often	Always
I've come through difficult times with little trouble	<input type="checkbox"/>				
I've tended to bounce back quickly after hard times	<input type="checkbox"/>				
It has not taken me long to recover from stressful events	<input type="checkbox"/>				

	Never	Rarely	Sometimes	Often	Always
I've tended to take a long time to get over setbacks	<input type="checkbox"/>				
It has been hard for me to snap back when something bad happens	<input type="checkbox"/>				
I've had a hard time making it through stressful events	<input type="checkbox"/>				

On a scale of 0 to 10, where 0 is the worst job performance anyone could have at your job and 10 is the performance of a top worker, how would you rate your overall performance on the days you worked during the past 2 weeks?

0	1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>										

4. Questions II

Over the past 6 months have you...

	Yes	No
gone to work when you were sick?	<input type="checkbox"/>	<input type="checkbox"/>
taken annual leave instead of calling in sick?	<input type="checkbox"/>	<input type="checkbox"/>
gone on restricted duties for any reason?	<input type="checkbox"/>	<input type="checkbox"/>

Over the last month, how often have you practised mindfulness...

	Never	A few times per month	A few times per week	Daily or more than daily
at work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
outside of work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(For participants in South Wales only) Are you currently involved in the MoveMore physical activity challenge?

- Yes
- No
- Don't know
- N/A (not from South Wales)

5. Comments welcome

Do you have any other comments about your experience of using Mindfit Cop? Feel free to comment on any aspect of your involvement – positive or negative – whether you used the resource a lot, a little or not at all. We're interested in hearing the full range of people's experiences.

6. What happens next?

Thank you for completing the questionnaire.

Your trial access to Mindfit Cop will expire this month.

We will take a little time to analyse and review the evidence collected during the trial, during which time the website will be closed and reviewed.

The report for the first phase will be completed by the end of March 2019, with further analysis of the 6-month survey data taking place in the summer of 2019.

Once we have finalised our research, we will circulate our reports to decision-makers within the College. They will use the evaluation evidence to decide whether to recommend or make available any mindfulness resources to Policing in the future.

We will let people know the results of the trial once these decisions have been made.

Your contribution has helped us build the evidence base for what works to increase wellbeing in Policing.

A big thank you again for taking part – we hope you enjoyed using Mindfit Cop!

Appendix 6: Interview questions

Mindfulness RCT 2018/19 – Qualitative interview schedule

Please use the relevant questions:

Group 1 – Participant consented to participate in trial but did not access resource [15 mins]

Group 2 – Participant used the resource for less than 30 mins [15–20 mins]

Group 3 – Participant used the resource for between 30 mins and 2 hours [20–30 mins]

Group 4 – Participant used the resource for more than 2 hours [20–30 mins]

Text in square brackets [] indicates a note to the interviewer where there is an opportunity to customise the question to the participant's situation (eg, if they used Headspace, say Headspace) or where the interviewer may follow different routes of questioning depending on the participant's answers.

Preamble

Thank you for speaking with me today. On behalf of the wellbeing research team at the College of Policing, I would like to ask you a few questions about your experience of being part of the mindfulness trial. Your feedback will inform our evaluation.

Our discussion will take around [15/20 – 30 minutes] – **is that ok with you?**

I would like to record the conversation to allow analysis and the selection of anonymised quotes for the evaluation report. The recording will not be shared beyond the College wellbeing research team and will be destroyed once the evaluation report has been published. The anonymised written transcript will remain in College of Policing records of this project – **are you happy to be recorded for this purpose?**

[If yes...] Thank you – I'll turn on the recorder now and I'll briefly ask you to state your agreement again, so that we have a record of your consent to take part.

[turn on recorder]

[Date/time]

- Are you happy to provide feedback on your experience of participating in the mindfulness online resource trial, for the purpose of the College of Policing's evaluation of mindfulness in Policing?
- Are you happy for our discussion to be recorded for this purpose?

- Can we use anonymised quotes from the recording in our evaluation report and any related academic papers?

You can withdraw from the trial at any time by emailing Helen Fitzhugh, whose details were provided via email. Anonymised quotes cannot be withdrawn after the publication of the evaluation report at the end of March 2019. If you have any questions, please do not hesitate to ask.

Relevant for group				Semi-structured interview framework (please feel free to probe and prompt to gain high quality qualitative feedback in the framework areas)
1	2	3	4	INDIVIDUAL CONTEXT Before we start the main questions, please could you sum up for me your role [eg, officer/staff in a particular team]?
1	2	3	4	INITIAL EXPECTATIONS What were your expectations when you applied to learn more about mindfulness in September 2018?
1				NON-USE – REASONS To what extent did you use [Headspace/Mindfit Cop]? [If not at all...] Please tell me why this was... [Please check for and note: <ul style="list-style-type: none"> • Technical issues (with registering, getting on to the site?) • Expected face to face not online course? • Workload/time issues • Working environment/colleague support issues • Anything else unanticipated?] [If they say they did use it...] Please could you tell me a little about how you used it? [transfer to group 2 questions now if they used resource a little]

1				<p>NON-USE – SCOPE FOR IMPROVEMENT?</p> <p>What would have to change for you to want to or feel able to use [Headspace/Mindfit Cop]?</p>
1				<p>OTHER MEANS?</p> <p>Are you still interested in learning about mindfulness?</p> <p>(For instance if training was offered in a different way)?</p>
	2	3	4	<p>ENVIRONMENT AND TIME MANAGEMENT</p> <p>Where and when did you tend to access [Mindfit Cop/Headspace]?</p> <p>[Please check for and note:</p> <ul style="list-style-type: none"> • Workload/time issues • Working environment/colleague support issues • Anything else unanticipated?]
	2	3	4	<p>TECHNICAL ISSUES</p> <p>How did you find accessing and using the app/website for [Mindfit Cop/ Headspace]?</p> <p>Was it easy/difficult? Why?</p>
	2	3	4	<p>IMPRESSION</p> <p>What was your overall impression of [Mindfit Cop/Headspace]?</p> <p>What did you like about it? What didn't you like about it?</p>
	2	3	4	<p>LEARNING</p> <p>Do you feel you learnt anything from using [Headspace/Mindfit Cop]?</p>
	(2)	3	4	<p>BEHAVIOURAL CHANGE</p> <p>Have you made any changes to your everyday working life as a result of the trial?</p> <p>What about outside of work?</p>

	(2)	3	4	<p>IMPACT</p> <p>Overall, what impact would you say learning about mindfulness has had on you?</p> <p>[Please check for and note:</p> <ul style="list-style-type: none"> • Wellbeing/resilience • Performance at work • Other unanticipated?]
	(2)	3	4	<p>SUSTAINABILITY:</p> <p>Do you have any plans to practise mindfulness after the trial?</p> <p>Is there anything that could help you to continue practising? What might stop you from practising?</p>
	2	3	4	<p>RECOMMENDATION:</p> <p>Would you recommend [Headspace/Mindfit Cop] to others in Policing?</p>

Thank you.

Those were all of my questions. Did you have any additional comments or questions?

We will continue to discuss the mindfulness resources with colleagues across the participating forces and prepare an interim report based on the feedback.

[If they have been using the resource] Please feel free to continue using [Headspace/Mindfit Cop] until the end of February 2019.

We will send out a final survey as part of the trial at the start of March 2019. Please take part in this as it will allow us to gain a longer-term picture of whether learning about mindfulness is useful in Policing.

Thank you for your time.

Appendix 7: Analysis details

Selected further details from the University of East Anglia analysis report

To evaluate the effect of the mindfulness interventions, we used a series of regressions to examine whether the allocation group influenced the primary (wellbeing, performance, life satisfaction and resilience) and secondary (absenteeism, presenteeism, restricted duties (all week 24) and mindfulness (week 10)) outcomes. For these tests, we used the raw scores and controlled for the baseline measurement that was taken before the intervention.

Although mindfulness was not measured in the week 24 survey, so we could not test it as an outcome, we did include the baseline mindfulness score as a control variable. This way we account for any potential individual differences in mindfulness that may have existed between participants at the beginning of the study.

For all the outcomes except absenteeism, we removed all cases with missing values. The exact sample used in each model is reported in the tables.

To evaluate whether there are any differences between the participating forces and the different generations in our sample, we tested their effects on each of the outcome variables both as part of the overall models and on their own. For three generations (Baby Boomers, Generation X and Generation Y), we used regressions with dummy variables specified as fixed effects. There were no significant effects for any of the outcome variables.

For the five participating forces, we used a slightly different approach and tested regressions with a random intercept in order to model variation between the five forces. This approach is more effective when there are multiple groups as it requires fewer degrees of freedom, but more importantly has the implication that the five forces are not a finite set of categories (as gender or generation are) but rather a sample of forces out of a larger population of possible forces. As such, this allows generalising beyond the five participating forces to the population of possible forces that they represent. Using this approach, we calculated the intraclass correlation coefficient of each of the outcome measures, which approximates the variance explained by taking into account the forces. The results showed that only a very small fraction of the total variance can be attributed to the participants working in one force rather than another. These estimates ranged from almost 0 for life satisfaction to 0.79 per cent for wellbeing.

Given these results, it was decided to exclude these two variables from any further analysis.

Overall, for the primary outcomes the model's predictors explained 30 per cent of the variance of wellbeing, 22 per cent of job performance, 33 per cent for life satisfaction and 28 per cent for resilience (see Appendix 8 for the model). More importantly though, group allocation had a significant effect on all the outcomes tested. Specifically, individuals allocated to either Headspace or Mindfit Cop were significantly improved for all the outcomes. Compared to the week 10 survey these results are consistent for Headspace and show a further improvement for Mindfit Cop.

In terms of the secondary outcomes, we evaluated mindfulness (week 10 only), absence days, absence spells, presenteeism, leaveism, and going on restricted duties.

The variables used explained 28 per cent of the variance of mindfulness.

Absence days and spells are count variables, and as such we used negative binomial regressions. Presenteeism, leaveism and restricted duties are measured as binary variables (the responses are either Yes or No) and therefore we used logistic regressions. Overall, we found significant relationships between group allocation and presenteeism and did not find any other evidence for similar relationships for the other secondary outcomes. It should be noted that absence data are based on organisational records rather than self-report measured, and as such we have a complete account of the number of absence days and spells for each participant. However, not all participants who are allocated in the Headspace or Mindfit Cop conditions engaged with the intervention. As such, for the absence models, we excluded (out of the whole sample) participants who did not engage at all with the app provided by Headspace or Mindfit Cop. This resulted in a final sample of 875 participants.

Direct, indirect and total effects

As an additional step, we evaluated if the effect of group allocation on each of the primary outcomes was indeed through an indirect influence on mindfulness awareness. To do this we refitted the week 24 models for wellbeing, life satisfaction, job performance and resilience by using the week 10 post-intervention mindfulness awareness as an additional predictor.

We also fitted an additional model using the week 10 post-intervention mindfulness awareness as an outcome. For all of these models we removed cases with missing values, which reduced our sample to 450 participants who completed all three surveys.

Consequently, there are some small discrepancies between the results in this section and the rest of the report. The detailed results of these additional regression analyses are not included in this report but can be provided upon request.

We evaluated if the indirect paths are indeed significant by bootstrapping the regression models for 10,000 simulation samples. Table 4 below shows the bootstrapped confidence

intervals for the indirect, direct and total mediation effects. Overall, the results suggest that there are significant indirect effects for the Headspace group through mindfulness. However, the equivalent indirect effect for Mindfit Cop was not significant for any of the outcomes.

Considering that the residual direct effect is still significant for a number of relationships for both Headspace and Mindfit Cop, the most likely explanation of this is that mindfulness training has positive effects other than the intended increases in mindfulness awareness. For instance, the training could have helped participants with sleep problems even if it did not influence their mindfulness. A second possible explanation of these results is that the measure used to operationalise mindfulness does not fully capture what has been achieved through the mindfulness training.

Table 4: Indirect effects of mindfulness training through mindful awareness

	Indirect effect				Direct effect				Total effect			
	Effect	SD	2.5% CI	97.5% CI	Effect	SD	2.5% CI	97.5% CI	Effect	SD	2.5% CI	97.5% CI
Headspace -> mindfulness -> wellbeing	1.94	0.53	0.99	3.05	4.16	1.6	1.06	7.36	6.1	1.73	2.73	9.53
Mindfit Cop -> mindfulness -> wellbeing	0.72	0.57	-0.33	1.91	4.26	2.01	0.33	8.27	4.98	2.02	1.09	8.99
Headspace -> mindfulness -> job performance	0.57	0.18	0.26	0.95	1.16	0.54	0.08	2.24	1.73	0.58	0.59	2.83
Mindfit Cop -> mindfulness -> job performance	0.2	0.17	-0.11	0.56	1.48	0.7	0.07	2.84	1.68	0.69	0.31	3.04
Headspace -> mindfulness -> life satisfaction	0.79	0.22	0.4	1.25	1.25	0.64	-0.03	2.5	2.04	0.66	0.73	3.33
Mindfit Cop -> mindfulness -> life satisfaction	0.29	0.23	-0.14	0.77	1.45	0.81	-0.13	3.01	1.74	0.8	0.17	3.3
Headspace -> mindfulness -> resilience	0.3	0.08	0.15	0.46	0.73	0.27	0.21	1.27	1.03	0.28	0.48	1.59
Mindfit Cop -> mindfulness -> resilience	0.11	0.09	-0.05	0.29	0.5	0.33	-0.14	1.13	0.61	0.34	-0.04	1.27

Appendix 8: Regression models

Table 5: Regression results for primary outcomes (week 24)

	Wellbeing			Life satisfaction			Job performance			Resilience		
	B	SE		B	SE		B	SE		B	SE	
Intercept	7.93	1.22	***	2.35	0.45	***	3.09	0.46	***	1.38	0.19	***
Gender (male)	0.08	0.34		-0.05	0.13		-0.15	0.13		-0.09	0.06	
Role (other)	0.22	1.19		-0.33	0.47		-0.40	0.49		-0.10	0.19	
Role (senior officer)	-0.39	0.75		0.18	0.30		0.36	0.29		0.05	0.12	
Role (staff)	0.25	0.34		0.03	0.14		0.31	0.13	*	-0.04	0.06	
Allocation (headspace)	6.36	1.45	***	2.16	0.57	***	1.57	0.56	**	0.99	0.24	***
Allocation (mindfit cop)	5.10	1.69	**	1.89	0.66	**	1.89	0.65	**	0.69	0.27	*
Job control (pre-intervention)	0.94	0.33	**	0.24	0.13		0.19	0.13		0.11	0.05	*
Job control * Headspace	-1.48	0.50	**	-0.49	0.20	*	-0.31	0.20		-0.25	0.08	**
Job control * Mindfit Cop	-1.33	0.57	*	-0.52	0.22	*	-0.49	0.22	*	-0.17	0.09	
Mindfulness (pre-intervention)	0.11	0.28		0.04	0.10		0.10	0.11		-0.01	0.04	
Wellbeing (pre-intervention)	0.51	0.04	***									
Performance (pre-intervention)							0.39	0.04	***			
Life satisfaction (pre-intervention)				0.51	0.03	***						
Resilience (pre-intervention)										0.51	0.04	***
R ²	0.30			0.33			0.22			0.28		
N	584			581			576			578		
RMSE	3.64			1.42			1.41			0.59		

*** p < 0.001, ** p < 0.01, * p < 0.05

Note: RMSE = root mean square error

Table 6: Regression results for mindfulness (week 10 only)

	Mindfulness		
	B	SE	
Intercept	1.13	0.16	***
Gender (male)	0.05	0.05	
Role (other)	-0.01	0.16	
Role (senior officer)	0.08	0.10	
Role (staff)	0.12	0.05	*
Allocation (Headspace)	0.96	0.20	***
Allocation (Mindfit Cop)	0.32	0.23	
Job control (pre-intervention)	0.12	0.04	**
Job control * Headspace	-0.25	0.07	***
Job control * Mindfit Cop	-0.09	0.08	
Mindfulness (pre-intervention)	0.49	0.04	***
Wellbeing (pre-intervention)			
Performance (pre-intervention)			
Life satisfaction (pre-intervention)			
Resilience (pre-intervention)			
R ²	0.28		
N	688		
RMSE	0.54		

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Note: RMSE = root mean square error

Table 7: Regression results for secondary outcomes (week 24)

	Absence days			Absence spells		Presenteeism			Leaveism		Restricted duties			
Intercept	2.95	0.58	***	0.02	0.32	2.21	0.86	*	-0.67	0.94	0.01	0.94		
Gender (male)	-0.34	0.18		-0.46	0.11	***	-0.26	0.23	0.07	0.29	-0.18	0.29		
Role (other)	0.29	0.67		0.55	0.3		0.64	1.1	-0.74	0.95	-0.23	0.87		
Role (senior officer)	-0.67	0.38		-0.36	0.26		-1.27	0.46	**	-0.57	0.67	-0.46	0.58	
Role (staff)	-0.21	0.18		0.06	0.1		-0.61	0.23	**	-0.08	0.29	-1.08	0.29	***
Allocation (Headspace)	-0.11	0.79		0.17	0.41		-2.98	0.99	**	-2.52	1.22	*	-1.01	1.24
Allocation (Mindfit Cop)	-1.02	0.81		-0.67	0.44		-3.71	1.12	***	-2.98	1.54		-1.6	1.36
Job control (pre-intervention)	-0.15	0.17		-0.21	0.09	*	-0.64	0.23	**	-0.5	0.26	-0.62	0.29	*
Job control * Headspace	0.04	0.27		-0.08	0.15		0.86	0.33	**	0.72	0.42	0.35	0.46	
Job control * Mindfit Cop	0.3	0.28		0.22	0.15		1.15	0.37	**	0.92	0.52	0.73	0.48	
Mindfulness (pre-intervention)	-0.34	0.14	*	0.02	0.08		0.09	0.17		-0.07	0.23	0.03	0.22	
Absence days (pre-intervention)	0.03	0.01	***											
Absence spells (pre-intervention)				0.31	0.04	***								
Presenteeism (pre-intervention)							1.54	0.22	***					
Leaveism (pre-intervention)										2.74	0.27	*		
Restricted duties (pre-intervention)												1.78	0.29	***
AIC	3529.48			1788.65			643.1			422.09		427.99		
BIC	3591.54			1850.72			695.41			474.34		480.18		
Log likelihood	-1751.74			-881.33			-309.55			-199.05		-201.99		
Deviance	721.75			872.81			619.1			398.09		403.99		
N	875			875			578			575		572		

*** p < 0.001, ** p < 0.01, * p < 0.05

Note: AIC = Akaike information criteria and BIC = Bayesian information criteria

Appendix 9: Qualitative analysis

The interview data were analysed using the framework approach. This analysis was carried out in Microsoft Excel over multiple spreadsheets.

The framework approach is a formalised type of thematic analysis that was developed around 30 years ago at the National Centre for Social Research as a means of carrying out social policy research, but it has since spread to other areas of qualitative research that require sensitivity to both themes and case context (Gale et al, 2013; Bryman, 2012). The key feature of this type of analysis is the production of grids or spreadsheets where each cell both stores and indexes a short data description and/or verbatim quote by theme and interviewee (Gale et al, 2013; Bryman, 2012). By building up sets of grids, the researcher is able to ask direct and specific research questions of the data (eg, what were the barriers and enablers to take-up?), keep an audit trail of the quotes they used to answer the questions and also retain a sense of where each quote came from (eg, an interviewee who was female, a police officer, had used Headspace and had spent over two hours on the app).

The grids employed for this framework analysis were as follows:

- reasons for using the online resources
- barriers and enablers
- learning
- behavioural change
- impact
- future intentions
- other (miscellaneous themes arising multiple times but not coded for elsewhere – clarifications over methods and times of usage and aesthetic responses to the online resources).

The inclusion of themes in the report was not based purely on the number of interview responses that could be used to justify the theme, but also on importance and relevance for policy in future. Themes were based on common points of response from between 4 and 19 respondents (average 9) out of the pool of 29 respondents overall.