Title page

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Abstract

Introduction: Healthcare professionals are well-positioned to encourage people to be more physically active. A process evaluation of the Clinical Champions Physical Activity Training Programme (CCTP) was conducted with three key objectives: evaluate programme uptake and utilisation; explore programme fidelity, barriers, facilitators and satisfaction; and provide recommendations for programme improvement.

Methods: The CCTP aimed to increase population-level physical activity across England. Clinical Champions were trained to deliver training to other healthcare professionals about physical activity. Data were collected from CCTP training sessions delivered at venues (often hospitals and General Practitioner surgeries) between Feb-Dec 2018.

Results: 509 training sessions were delivered, with 89% of sessions delivered by doctor/physician and nurse Clinical Champions. 8,917 healthcare professionals attended a training session. London and North West-based Clinical Champions trained the most people (21.6% and 20.7%, respectively). Sessions lasted on average 1hr 28min and core slidesets were used in 65% of sessions. Barriers related to arranging the sessions and time available to deliver sessions.

Conclusion: The process evaluation demonstrated a national peer-led training programme can reach all geographical regions of England; however, barriers need to be addressed to maximise reach and ensure intervention fidelity. Our recommendations include providing more administrative support to the Clinical Champions.

Text

Background

Encouraging people to be physically active is a global public health message.[1] The health benefits of physical activity include the primary and secondary prevention of several long-term conditions (e.g., hypertension, diabetes, cancer, depression) and premature mortality.[2]. Physical inactivity is responsible for a substantial global economic burden, costing healthcare systems more than $50 billion worldwide in 2013, losses in productivity and related deaths.[3] Based on Health Survey for England data, only 62% of the population are attaining sufficient levels of physical activity to benefit health.[4] However, this number is likely to be lower given the social desirability issues with using self-reported data. In addition, 1 in 4 people are currently living with more than one long-term condition.[5]

Despite efforts to increase physical activity, participation remains insufficient[6] and further interventions are needed to address this. There is evidence of effectiveness for many interventions[7,8] and policy support for physical activity promotion in England.[9] Despite this, population levels of PA remain largely unchanged. This could be due to failure to translate evidence into practice, failure to develop evidence based policy and practice[10] and challenges in implementing and scaling up interventions in real world settings.[11] Further interventions are therefore needed. Training the HCP workforce to deliver brief advice offers the opportunity to reach a large proportion of the population. Healthcare professionals in the primary care and secondary care setting (including General Practitioners [family physicians], nurses, pharmacists, health psychologists and physiotherapists) are in an optimal position to encourage people to be more physically active. Their involvement in physical activity promotion can build on providing advice about smoking cessation, alcohol intake and healthier diets. However, it is evident that as a workforce healthcare professionals are ill-equipped to deliver brief advice, lacking the knowledge and confidence to

deliver this crucial public health message to patients.[12–15] Education and training is needed to support healthcare professionals deliver brief physical activity advice to patients.

The National Institute for Health and Care Excellence (NICE) recommends that brief advice promoting physical activity is incorporated into the care pathway for patients living with health conditions and that inactive patients should be identified.[16] Research conducted to date has demonstrated that brief interventions around physical activity can increase self-reported physical activity in the short term[17] and can raise patient awareness.[18] Similar training initiatives have been specific to a population subgroup such as cancer patients.[19] Whilst this programme indicated some success, it is difficult to compare with a large scale study on the effectiveness on the general population. Regular physical activity counselling is of great importance to doctors/physicians and nurses because of the health benefits it can bring to patients and in reducing healthcare costs, but greater knowledge of physical activity is needed to improve opportunities for physical activity promotion, change attitudes and given healthcare professionals confidence to discuss physical activity with patients.[20] Implementing a training programme to promote the knowledge, skills and confidence levels of healthcare professionals in delivering such advice will be beneficial; however, there may be challenges for implementation. There is a reliance on the acceptability and efficiency of healthcare professionals to deliver brief physical activity advice.[21] The literature is currently unclear on several particular areas. Notably, (i) whether this training should be peer-led; (ii) whether a standardised set of resources can be delivered across multiple healthcare professions; (iii) whether this training is received well by healthcare professionals; (iv) whether healthcare professionals might participate, and if so who; and (v) whether there are barriers and facilitators for its implementation.

The Moving Healthcare Professionals Project (MHPP) is a national, whole system medical education programme in England which aims to provide training, education and resources for healthcare professionals to increase physical activity promotion in primary and secondary care.[22] Recognised by

the World Health Organisation global action plan on physical activity,[23] the MHPP includes e-learning modules, resources to use during consultations and peer-led training courses. The latter component is the Clinical Champions Physical Activity Training Programme (CCTP), which provides in-person, peer-led training to create awareness of the health benefits of physical activity and increase the knowledge, skills and confidence levels amongst healthcare professionals (spanning mental and physical health). The overall aim of the CCTP is to increase population levels of physical activity by increasing the proportion of healthcare professionals integrating brief conversations about physical activity into routine clinical practice.

Process evaluations document whether interventions have been implemented as intended. This form of evaluation is important to better understand and explain the impact of interventions and can explore the quality and fidelity of intervention delivery.[24] It can also help us to understand what adaptations are needed to facilitate consistent and sustainable delivery in real world settings. Findings from process evaluations can inform changes to future programme delivery or contribute to programme development (e.g. expansion) . Forming part of the independent evaluation of the CCTP, a process evaluation was conducted to help understand and improve delivery processes of the training programme to inform programme development The RE-AIM framework can be used to help guide process evaluations. It helps translate research into practice and encourage people to pay more attention to key elements within a programme to optimise the availability of generalisable, evidence-based interventions.[25] This framework continues to be popular in the evaluation of public health impact of real world health promotion interventions[25] such as the CCTP. Selected domains of the RE-AIM framework were used to structure this process evaluation (namely reach, adoption and implementation) with the remaining domains reported elsewhere. The key objectives were to (i) evaluate programme uptake and utilisation (reach and adoption), (ii) explore programme fidelity, identify barriers and facilitators for delivering the programme and assess the degree of participant

satisfaction with the training sessions (implementation), and (iii) provide recommendations for future delivery of the CCTP and similar programmes.

Methods

Clinical Champions' Physical Activity Training Programme

Public Health England (PHE) recruited a network of 'Physical Activity Clinical Champions' from across England to deliver the physical activity training programme for healthcare professionals (CCTP)The Clinical Champions were healthcare professionals working in the National Health Service (NHS) and included doctors/physicians, nurses and those from allied health professions (e.g., physiotherapists, pharmacists and midwives). Clinical Champions received training from PHE to be a training session deliverer, and were provided with materials to support the delivery of the CCTP training sessions. The Clinical Champions were tasked with providing peer-to-peer training on physical activity for healthcare professionals in their local areas. The Clinical Champions received payment for their time (casual hours, temporary contract; up to 12 hours per month; standard fixed sessional rate regardless of substantive grade) and reimbursement of travel expenses (i.e. public transport and vehicle fuel).

The CCTP aimed to firstly raise knowledge and awareness of the value of physical activity for the prevention and treatment of chronic disease. It also aimed to increase the knowledge and confidence of healthcare professionals to deliver brief advice on physical activity to patients, and increase the frequency of physical activity brief interventions delivered to patients in routine practice. CCTP session attendees (including doctors/physicians, nurses and allied health professionals) were recruited via several different methods with initial recruitment conducted through contacts of the Clinical Champions within their specified geographical regions and local networks. Following this, recruitment occurred via word of mouth with incoming requests for them to host sessions at various venues (including hospitals). Advertising materials were used to publicise the event to healthcare professionals.

The CCTP itself involves a one-off, free to attend training session delivered by one of the Clinical Champions with all registered healthcare professionals able to attend. This in-person session could form part of a wider 'protected learning time' or continuing professional development event for healthcare professionals or be a standalone event. The format of the CCTP training sessions comprised a standardised, peer-reviewed, core slide set targeting doctors/physicians, nurses and allied health professionals (e.g. physiotherapists) including information on (1) definitions and evidence for physical activity and health; (2) physical activity guidelines; (3) the importance of physical activity for the prevention and management of disease and (4) the integration of brief interventions for physical activity into clinical practice utilising behaviour change theory. In some training sessions, a tailored slide set was used for training psychiatrists and mental healthcare professionals to address specific issues related to their patients. Depending on the Clinical Champion, audience and time available for training, additional bolt-on slides covering topics such as motivational interviewing, the relationship between physical activity and specific chronic conditions and information on local physical activity programmes to support signposting patients to local opportunities to be active were available. Some training sessions included additional slides relating to the use of a physical activity prescription pad. An evaluation of the physical activity prescription pad is outside of the scope of this present evaluation and is reported elsewhere.[26] In recognising that training session content may differ, Clinical Champions were tasked with reporting exactly what content was delivered to attendees.

The CCTP commenced in 2014 and was initially delivered by one Clinical Champion as a pilot study in one geographical region (London); it was subsequently expanded to be delivered nationwide.[12] Only sessions delivered between 5th February and 31st December 2018 contributed to this evaluation. The evaluation was conducted independently, and the research team were not involved in the development or delivery of the training programme.

Research governance and ethics

All interviewees and survey respondents provided written informed consent to take part in the evaluation. Ethical approval was obtained from Loughborough University Research Ethics Committee (REF C17-87; Dec 2017).

Data collection

Data were collected from training attendees (healthcare professionals) and from the CCTP session deliverers (Physical Activity Clinical Champions). Data from the Clinical Champions were collected using sign-in sheets and a short delivery audit form. The sign-in sheets were completed by training participants and recorded their name, professional role of position and e-mail address. A short delivery audit form was completed by the Clinical Champion for each training session, further details are provided in Table 1. The Clinical Champions used freepost Business Reply envelopes to return the sign-in sheets and session delivery audit forms to the research team.

Training attendee data were collected using 1) surveys which were completed by training attendees at baseline (pre-training) and 4 and 12 weeks after the training session (16-item, 27-item and 19-item surveys, respectively), and 2) semi-structured interviews with nurse Clinical Champions at the end of the evaluation in January 2019. The baseline surveys were completed either online, or on an identical paper-based version if there was no internet connection available, at the start of the training session. These surveys captured data on the attendee (including age), their current professional position, the perceived role that physical activity played in their role, current knowledge of physical activity guidelines, confidence toward advising patients, and perceived barriers to assessing patients' physical activity levels. Any paper copies were returned to the research team with the sign-in sheets and session delivery audit forms, and manually entered onto the online database. The 4-week and 12-week follow-up surveys were completed online, distributed to

attendees by email via an external data capture agency (Cuttlefish Multimedia Limited). The follow-up surveys also captured reflections on the training session (including content, delivery, duration, usefulness and relevancy), if they had received any training on the physical activity prescription pad, and preference to enter the monthly prize draw. Non-responders to the follow up surveys were sent a reminder e-mail after two weeks. A monthly prize draw incentive was offered. Only the baseline and 4-week follow-up surveys were used in this process evaluation (see Table 1 for their contribution to the evaluation); the 12-week survey did not contain any data relevant to this process evaluation. The findings in relation to the effectiveness of the CCTP are reported elsewhere.

Twelve of the sixteen nurse Clinical Champions were contacted to take part in a one-to-one interview. Sampling criteria for these interviews were driven by the funder (Burdett Trust for Nursing) who specifically provided funding to interview the nurse Clinical Champions only. The remaining 4 nurses were not invited as they were not working at the time of the interviews (including being on extended leave and maternity leave). In total, nine agreed to take part in a telephone interview. These champions represented a range of geographical locations and different levels of experience of the CCTP. The interviews aimed to (i) explore the views on the content and duration of the training; (ii) investigate previous physical activity and behaviour change training; (iii) gauge perceptions on how well the training and resources equipped them to cascade the information and (iv) how to improve future delivery of the programme. The interviews were conducted by telephone, were audio recorded and lasted approximately 45 minutes. An interview guide was developed, reviewed and approved by Public Health England and used to facilitate the interviews (see Supplementary Material).

A summary of how each indicator of the RE-AIM framework was assessed is presented in Table 1. For the purpose of this process evaluation, our focus was on the reach, adoption and implementation domains.

Data analysis

Quantitative data

Descriptive data about the training sessions delivered were summarised using frequency (percentage). Data management was facilitated by Cuttlefish's online administrative portal. Online survey responses were captured directly using the online system and paper-based surveys were entered manually using a custom data import function. The data was exported to SPSS and cleaned prior to analysis (e.g. identifying missing data, coding responses). Data concerning participants who had received information about the physical activity prescription pad were excluded from the database. Data were analysed using SPSS Statistics Version 26 (IBM SPSS Inc., New York).

Qualitative data

Responses to open ended survey questions were reviewed and the most frequently mentioned themes identified. The interview audio files from the nurse Clinical Champions were transcribed verbatim by an independent administrator. Transcripts were checked and identifiable information was removed to maintain confidentiality. Transcripts were read thoroughly to understand participants' perspectives, and were then re-read and coded into key theme areas with sub-themes analysed for emerging recurrent views and opinions (based on thematic analysis principles).[27] Key quotes to demonstrate the themes were selected.

Results

Results for the RE-AIM domains are presented in the order adoption, reach and implementation to reflect the logical process in which programme delivery takes place.[28]

Adoption

As of December 2018, 46 Clinical Champions were actively delivering training sessions (Table 2). A total of 509 training sessions were delivered across the nine geographical regions of England. The doctor/physician and nurse Clinical Champions delivered 48% (n=239) and 41% (n=202) of the sessions respectively, with the remaining 56 (11%) sessions delivered by other Clinical Champions such as allied healthcare professionals (including physiotherapists, midwives, pharmacists and psychologists). The Clinical Champions based in London and the North West trained the greatest proportions of people (21.6% and 20.7%, respectively).

Reach

Sign-in sheets were completed and returned for 494 (98%) training sessions which indicated 8,917 healthcare professionals signed in at a session. On average, 17 healthcare professionals signed into each training session delivered (range 1 to 129). Table 3 outlines the characteristics of the training attendees and the training sessions. The highest proportion of attendees were aged 25-34 years (35.9%) and were doctors/physicians in training (22%). 637 General Practitioners and 188 practice nurses (primary care-based nurses) attended. Sessions in the West Midlands and Yorkshire and Humber regions had the highest average number of attendees and most sessions took place in the North West and London.

Implementation

The core slide set alone was used in 65% of sessions. The remaining sessions included core and supplementary slides, most often on motivational interviewing (17%), broader health psychology (13%), physical activity advice pad (exercise prescription pad) (22%) or unspecified (36%). A fifth of sessions were given less time than initially scheduled, with an average duration of 1 hour 28 minutes (range 20 minutes to 3 hours 30 minutes). Shorter sessions were often incorporated into practice team meetings and longer sessions integrated within student nursing modules. Many sessions (69%)

were delivered as a standalone session and 41% of sessions took place within protected learning time.

From a peer-to-peer perspective, 85.9% of doctors/physicians were trained by doctor/physician Clinical Champions, 69.3% of nurses were trained by nurse Clinical Champions and 28.5% of allied healthcare professionals were trained by allied healthcare professional Clinical Champions (Table 4). A high proportion of attendees agreed that it was important for the trainer to be working in their area of clinical practice (59.2%) whilst others were neutral (30.3%) or disagreed (10.5%).

Barriers and facilitators for implementation

The Clinical Champions reported several barriers and facilitators for implementing the training programme during the interviews and via the session delivery audit forms. The themes of the barriers and facilitators related to: (i) the training and support they received, (ii) arranging training sessions, (iii) the time available for delivering sessions (which led to adapting delivery), (iv) developing their own personal delivery style and approach, (v) involving local organisations and (vi) handling attendee perceptions on their role in giving physical activity advice to patients.

Training and support received

The Clinical Champions were complementary of the training and support they received, suggesting they felt adequately equipped with the latest information and had powerful data and evidence to empower other healthcare professionals in understanding the health benefits of physical activity. They also mentioned how the Clinical Champion 'team' has developed rapport amongst themselves; creating an effective support network, where they could share learning, sources of information and their experiences to inform future delivery, easing communication and helping them feel less isolated in their position as Clinical Champion. The training delivered to become a Clinical Champion was perceived to be informative and engaging; however, more help and advice was needed in

accessing and building a network of clinical practitioners to whom the programme could be cascaded, and training participants recruited. Two Clinical Champions noted:

> *"...I do think it's a good training course, and I enjoyed the training when I went down, the facilities were brilliant and [trainer] was amazing, very inspirational."*

> *"….in the beginning it did feel like you were banging your head against a brick wall and that's where I felt that there wasn't any support to help you, you were just sort of right, off you go, go and find these sessions."*

Arranging training sessions

Arranging the training sessions was incredibly challenging for many Clinical Champions. In particular, knowing who the correct person was to contact was very time consuming. Having a Public Health England email address was thought to be most effective when communicating to NHS trusts and local authorities; however, it was evident that making these arrangements was a barrier for many, as highlighted in these two quotes:

> *"The process of actually being able to have that appointment to give the presentation is very, that's the hard, that's the real bulk of the work, trying to get to [healthcare professionals]."*

> *"…sometimes you feel like you're putting a lot of time and effort in and it's a real priority for me but its way down the priority list of some of the people that you are trying to get in touch with."*

To help overcome this barrier, the Clinical Champions felt an investment in marketing was needed and a national-level push to promote the key messages and the training programme. The

importance of the support of management was also highlighted by Clinical Champions (see below quotes) and how future delivery would benefit from having greater support and respect from senior practitioners:

> *"…it always surprises me that so many people do not know about this and yet it's such a big thing nationally and obviously now with the NHS plan coming out which is all you know, massive push for prevention, it needs to be out there a lot more than it is."*

> *"… just making sure nationally that people are aware of what we're doing and really just to make it bigger, a really big, much bigger push from the national team really."*

The Clinical Champions also discussed that as the training was not mandatory, fewer attendees were in attendance than anticipated or attendees arrived late which was disruptive to the session. In addition, they found that nurses' protected learning time was often unavailable to schedule as they often had pharmaceutical companies visits during this time. This was disappointing as this could have been a good opportunity to deliver the programme to large numbers of nurses, as emphasised by one Clinical Champion:

> *"One of the biggest problems I found was how much the pharmaceutical companies are actually involved in lots of the nursing meetings and gatherings… But because of the pharmaceutical sponsorship I suppose or involvement, it's an area where we haven't been able to, well I certainly haven't been able to tap into and that's a huge loss really."*

Time available for delivering sessions

The time available for delivering the sessions was often misaligned, with many Clinical Champions recalling how they adapted the session to fit with the time available. This sometimes affected the

content which could be delivered. Within shorter delivery sessions lasting less than an hour the focus was on promoting the key messages, in particular the infographics and local services available. Longer delivery sessions concentrated on motivational interviewing and role play using case studies. Thus, there was considerable variation and adaptation (loss of fidelity) of the training programme.

Personal delivery style and approach

The interviews revealed the nurse Clinical Champions needed to develop their own presenting style and be able to adapt to the circumstances of the training to effectively deliver the programme content and to get the key messages across. Being enthusiastic and confident were considered as key to gaining the respect of the audience. However, it was reported that several of the slides in the core slide set were challenging to deliver as highlighted by one Clinical Champion:

> *"…those were the slides that I think we struggled with and I think it's just trying to find your own sort of comfort zone in terms of what you're saying to make sure it's the right information."*

The presentation materials formed a good basis for discussion, but some Clinical Champions reflected on how the slide sets could be more specific and have less text. In the sessions that were longer in duration, the Clinical Champions noted that it offered a better opportunity to share personal scenarios and to facilitate small groups of discussion. Clinical Champions highlighted that case studies and the interactive nature of the training engaged staff and trigged interest:

> *"I've found that when I've done case studies, it's really provoked conversation and the atmosphere has been really buzzing."*

Involving local organisations

The involvement and support of outside organisations and individuals, including sports centres, local Active Partnerships (who bring local sport and physical activity organisations together) and physical activity leads, was perceived as a facilitator by some. However, often there was insufficient time to capitalise on this and often their coverage was too local, which restricted the information provided as it was not relevant to attendees who had travelled to the training from outside of the local area.

Handling attendee perceptions

The other barrier was around how training attendees perceived their professional responsibility to deliver physical activity advice to patients, and also their perceptions toward what the training session would involve. The latter was partly attributed to the materials that were used to advertise the training session, suggesting there was too much information on there, leading to confusion. More concerning, there was some resistance from healthcare professionals, particularly those well established in their roles, questioning why they would have a conversation with patients about physical activity. This narrow view on promoting physical activity evoked negative feelings as reported by one Clinical Champion here:

> *"…quite surprising as healthcare professionals as how negative initially the responses were regarding their, you know, why they would have that kind of conversation."*

Participant satisfaction

Attendee perceptions of the training session were highly positive. Attendees agreed the objectives were clearly defined (95%), that the topics were relevant (88.2%), the trainer was knowledgeable (96.9%), that the time allotted for the training was sufficient (87.3%), and that the training had been useful (83.7%). Attendee feedback revealed that 90.5% of attendees would recommend the training to colleagues.

Overall nurse Clinical Champions found that attendees had engaged with the programme and left the session with a message of supporting patients to be more physically active. As one champion commented:

> *"As long as it gives them just one question that they can ask somebody or an answer they can give, you've done something worthwhile in relation to physical activity."*

Furthermore, Champions revealed that the impact of the programme can go beyond the patients and resonate with the healthcare professionals who deliver the key messages too, having a positive impact on their own physical activity levels. As one Clinical Champion described:

> *"…it's about what they take away from it personally and how they can also affect these sorts of messages on their family and friends as well. So, I think it's a wider remit even than just saying nurses, yes, we want the nurses and all the other sort of groups of health professionals to take this message to cascade it, I think the impact of this can be quite big for them personally as well."*

Discussion

The CCTP involved delivering peer-led training to increase awareness of the health benefits of physical activity amongst healthcare professionals. It also aimed to increase their knowledge, skills and confidence for delivering brief physical activity advice to patients. This process evaluation aimed to evaluate the uptake and utilisation of the CCTP, as well as to explore the barriers and facilitators for its implementation and participant satisfaction with the training. Our findings suggest that a peer-led, national physical activity training programme can be implemented, and many healthcare professionals can be reached. However, several challenges were noted which we believe will provide useful learning to inform the future of the CCTP and other similar training programmes.

Programme uptake and utilisation (adoption and reach)

Healthcare professionals are optimally positioned to give brief advice to patients about smoking cessation,[29] weight loss[30] and alcohol use.[31] Delivering a training programme for healthcare professionals to support them in delivering physical activity advice to patients was successful in this instance with more than 500 sessions and 8,000 attendees recorded. Other programmes have reported 207 registering for a training session in an 11 month period after promoting its availability to more than 7,000 healthcare professionals.[32] The involvement of Clinical Champions with differing clinical backgrounds was also of merit and sessions were delivered in all nine geographical regions of England. However, there was a disproportionate spread of sessions delivered nationally, largely due to where Clinical Champions were based. An alternative, more targeted strategy may be needed to recruit Clinical Champions from specific areas to ensure full coverage of all geographic regions. This approach could also help to identify the areas where the training could have the most impact, for instance, in areas with a high prevalence of patients with long-term conditions.

As of September 2018 more than 700,000 professionally and clinically qualified individuals were employed by the NHS in the UK;[33] revealing a large pool of healthcare professionals who may be in a position to promote physical activity to patients. If these individuals could all be trained to deliver brief advice on physical activity to patients, it would increase workforce capacity for physical activity promotion to improve health and help manage long-term conditions. However, identifying how to better engage training attendees who have low levels of value towards physical activity and this form of lifestyle advice is crucial. One way may be to make the training compulsory to help encourage healthcare professionals become more aware of the role physical activity can play in the prevention and management of chronic disease. Professional training has been described as an excellent way to improve physical activity prescription[34], and can help healthcare professionals become more aware of guidelines and effective strategies to counsel patients,[35] the CTCP is

warranted. However, currently the programme is reliant on the recruitment and training of volunteer Clinical Champions to deliver the training programme. Being reliant on a clinical workforce can be challenging and our findings show that ensuring these individuals receive the appropriate support in organising and delivering training sessions is essential.

During the evaluation period, the training programme was attended by healthcare professionals from a variety of backgrounds, foremost doctors/physicians and nurses. In another programme evaluation, it was revealed that the largest number of bookings was from nurses followed by support workers and physiotherapists.[32] The online delivery format of that evaluation also enabled monitoring of completion rates which demonstrated Dieticians ranked highest followed by physiotherapists.[32] It has been suggested that 1 in 4 people would be more active if they were told by a General Practitioner (GP; family physician) or practice nurse (primary-care based nurse) that physical activity can help them manage their condition.[36] Hearing this form of advice from a credible source appears to be important for patients.[37] With more than 600 GPs (family physicians) and nearly 200 practice nurses (primary care-based nurses) attending training during the evaluation period, as well as secondary care hospital doctors/physicians and nurses, it appears the reach of the training programme extended into the domains of both primary care and secondary care.

Our findings revealed that 16% of the attendees were students. With concerns around the extent to which physical activity is covered in current medical-related degree curriculum,[38,39] it is valuable to see that the CCTP is reaching this cohort. It should be noted here, then, that the training programme may be a first encounter to physical activity for the student cohort, but this could also be true for the fully qualified attendees who would benefit from training to promote physical activity.[40,41] However, having the opportunity and time to raise physical activity with patients during routine care, remains a challenge.[42]

Programme fidelity, barriers and facilitators and degree of participant satisfaction (implementation)

The number of attendees at each training session varied between the sessions, logging as few as one attendee and as many as 129 attendees. It was also evident that time allocated to the training session on the day often varied from the provision at the point of scheduling. This was on occasion due to a previous session overrunning or because many attendees arrived late, delaying the start of the session. These factors directly impacted the delivery of the training, meaning intervention fidelity was inconsistent across the sessions. On one hand, the availability of the core slide set, and the secondary supplementary slide sets, was of benefit. It facilitated delivery of a standardised training session and allowed flexibility to extend a session to include further discussion around patient case studies and role play when more time was made available. In contrast, the shorter sessions restricted how much flexibility the Clinical Champions had to deliver the training and it was often difficult to deliver the full core slide set in this time. Other programmes have embraced online delivery of training which has the added benefit of logging attendance and retention for each attendee. Although online training is promising, it can produce a low booking to completion ratio.[32] This variation in training provision needs be minimised to ensure all attendees receive the same level and quality of training to promote consistent application of brief advice on physical activity in clinical care.

Several barriers to implementation were recorded during the evaluation. Scheduling of sessions was a time-consuming task for the Clinical Champions and one that could be enhanced with additional support from authorities such as Public Health England and local Clinical Commissioning Groups. Reducing the administrative burden of the Clinical Champions is pivotal for this training programme to be scaled up to deliver more sessions in each area. There is a need to reduce the reliance on the Clinical Champions for finding crucial local contacts to arrange session delivery, to avoid the burden of making repeated attempts to talk to the contact around normal clinical duties and sessions. It may

be that online delivery of the training sessions could be more scalable; however, it is recognised that a face-to-face setting was preferred by many, with social learning and interaction welcomed.[19] Difficulties in signposting and referring was reported elsewhere and, in response, those authors highlighted the need to create links with other related programmes to widen the availability of local opportunities.[19]

The training programme was peer-led by design, whereby healthcare professionals delivered training to their counterparts, regardless of profession. The findings showed that a high proportion of doctors/physicians and nurses were trained by doctor/physician Clinical Champions and nurse Clinical Champions respectively. There was no known influence by Public Health England to deliver training to healthcare professionals of their own profession, but it is possible on occasion the Clinical Champions capitalised on contacts which aligned with their own profession. Most training attendees thought it was important for the trainer to be working in their area of clinical practice and this has been done in other programmes which have delivered training specific to speciality (e.g. cancer).[32] This could improve the training sessions for nurses and allied health professionals because they could be delivered in a way that acknowledges the variation in patient consultation practice which differs in length, format and regularity compared to doctor/physician consultations.[43] However, scheduling training appeared to be a challenge in itself, so if the sessions were then to be attended by particular groups of healthcare professionals, such as GPs (family physicians) only, extra consideration would need to be made to facilitate additional training sessions for other staff. A pragmatic step forward would be to continue having a mixed audience for the Clinical Champions to maximise coverage in England, but to refer to scenarios and case studies that align with the audience.

Overall attendee satisfaction was high, suggesting the session was highly relevant, that the Clinical Champion was knowledgeable in the area and the training session was useful. High levels of

satisfaction can have extended effects on whether the healthcare professionals go on to discuss physical activity with patients and may also impact personal physical activity levels. Sustaining this satisfaction beyond the training session into the clinical environment is important. However, the literature suggests that time can be restrictive in clinical settings[44] as can a lack of resources.[45]It is also important to acknowledge boundaries between different healthcare professions and the complexity of physical activity promotion with individual patients; noting that particular healthcare professionals may not view physical activity promotion within remit. [46] Enabling healthcare professionals to give tangible materials to patients may be a helpful resource, such as handing out leaflets and vouchers to inactive patients.[47] The CCTP may benefit from doing something similar. Indeed in the subsequent delivery of the programme, stronger links have been made to the use of the Moving Medicine e-learning resource (https://movingmedicine.ac.uk/) to supplement the verbal advice given at the training sessions, and which may provide a useful resource for healthcare professionals in their consultations with patients. Further evaluation is underway to understand how the Moving Medicine resource is being used in practice.

Recommendations for future delivery of the CCTP and similar programmes

Based on the findings from this process evaluation several recommendations are suggested for the future delivery, scale up and expansion of the CCTP.

1. Consider how Clinical Champions are recruited to ensure there is geographical spread and there are equal opportunities to attend sessions across all geographical regions. But also consider targeting specific areas where there are greater health needs in the population which could benefit from increased physical activity and could be promoted by healthcare professionals.
2. Ensure all healthcare professionals have the opportunity, and are encouraged, to participate in the training by engaging with senior managers and clinicians to gain recognition of the value of physical activity in promoting health, support the programme and increase awareness of training sessions being offered.

3. Consider how to reach and engage more healthcare professionals in the training, particularly those who may not perceive physical activity promotion to be a high priority or part of their role.
4. Amend the advertising material used to publicise the event to healthcare professionals to have an explicitly clear message why it is relevant to *all* healthcare professionals.
5. Provide more administrative support to Clinical Champions to identify key contacts and to schedule training sessions.
6. Ensure scheduled sessions have a minimum duration to enable the full core slide set to be delivered in a standardised fashion.
7. Increase awareness of the CCTP nationally to increase awareness of the training programme and to support the process of organising and delivering training sessions.
8. Evaluate the delivery of the brief advice on physical activity in both mental and physical health clinical settings following the training to determine how and when it is implemented, and the impact on patient's physical activity participation.
9. Identify the potential downstream barriers and facilitators for promoting physical activity to patients using brief advice during routine clinical practice.
10. Standardise the evaluation procedure for this training programme to enable comparisons and inform future programming.

Strengths and limitations

A comprehensive, pragmatic process evaluation[48] of the CCTP was conducted and had good buy-in from the Clinical Champions to complete the data collection procedures. The data collection methods were designed with support from an evaluation steering group who advised on feasible approaches. There were challenges, however, with capturing data for the evaluation due to the pressures with delivery of the training sessions and reliance on the Clinical Champions. An alternate approach may have been to send links to the evaluation materials ahead of the training session.

Given the pragmatic real world nature of the training programme, the evaluation did not contain a control or comparison group and there was no randomisation to different intervention groups. It must be acknowledged that not every attendee completed the sign-in sheet at training sessions. Often attendees arrived late, and the Clinical Champions were preoccupied with delivering the session. As a result, rates of attendance reported in this paper are likely an underestimation of true programme reach. It was also noted that some session delivery audit forms were incomplete, therefore it was not always possible to identify exactly which slide set was delivered or how the sessions were adapted to suit different circumstances. The interviewees may have withheld particular comments of the CCTP which were deemed negative, given their employment with the organisation overseeing the CCTP. The sample of the interviews was also limited in breadth across healthcare professions; driven by the funding provided, which was specifically for interviews with nurses, and the doctor/physician and allied health professional Clinical Champions being unavailable at the time along with other resource capacity issues.

Conclusion

The process evaluation demonstrated that a national peer-led training programme for healthcare professionals to deliver physical activity advice to patients is possible to implement and can reach many of the target audience. However, there were several barriers to its implementation and these need to be addressed to ensure maximum reach and engagement of healthcare professionals, intervention fidelity and effective scale up and expansion of the programme.

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Author contributions

MW contributed to the conception and design of the process evaluation, data management, data analysis, drafted the manuscript and approved the final version submitted.

LC contributed to data management, data analysis, drafted the manuscript and approved the final version submitted.

HM contributed to data management, data analysis drafted the manuscript and approved the final version submitted.

EA contributed to project management, drafted the manuscript and approved the final version submitted.

Conflict of interest

None to declare.

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Tables

Table 1. An overview of the RE-AIM framework used in this evaluation, domain definitions and the data sources

Domain	**Definition**	**Data items**	**Data source**
Reach	The absolute number and proportion, and representativeness of individuals who are willing to participate in a given initiative.	Where the sessions took place	Session delivery audit form
		Number of training attendees	Session sign-in sheet
		The profession of training attendees	Baseline survey
		Age of training attendees	Baseline survey
		Perceptions of how valued physical activity is	Baseline survey
Adoption	The absolute number, proportion, and representativeness of intervention agents (clinical champions) who are willing to initiate a program.	Number of Clinical Champions	Session delivery audit form
		Profession of the Clinical Champion	Session delivery audit form
		Geographical location of the Clinical Champions	Session delivery audit form
		Who delivered the session?	Session delivery audit form
		Location of the sessions delivered	Session delivery audit form
		Number of training sessions delivered	Session delivery audit form
Implementation	The intervention agents' fidelity to the various elements of an intervention's protocol. This	Which slide set was delivered	Session delivery audit form
		Time allocation for the session	Session delivery audit form
		Subsequent time allocation for the session	Session delivery audit form

	includes consistency of delivery as intended and the time and cost of the intervention.	Whether the training session formed part of a wider training session	Session delivery audit form
		Training attendees' satisfaction of the sessions	4-week follow-up survey
		All Clinical Champions: What went well and what could have gone better	Session delivery audit form
		Nurse Clinical Champions: Perceived successes and challenges of delivering sessions	Interviews

Table 2. An overview of the Clinical Champions delivering the training programme

Healthcare profession of Clinical Champions	n (%)
Doctor/physician	17 (37)
Nurse	20 (43.5)
Allied Health Professional	4 (8.7)
Other	5 (10.9)
Number of sessions delivered by Clinical Champions	
Doctor/physician	239 (48)
Nurse	202 (41)
AHP	44 (9)
Other	12 (2)
Number of Clinical Champions by geographical region	
London	8 (17.4)
North West	8 (17.4)
North East	5 (10.9)
East Midlands	5 (10.9)
East of England	5 (10.9)
South West	5 (10.9)
South East	4 (8.7)
Yorkshire & Humber	3 (6.5)
West Midlands	3 (6.5)

Table 3. Training attendee and training session characteristics

	n (%)
Age	
18-24 years	985 (16.6)
25-34 years	2,122 (35.7)
35-44 years	1,202 (20.2)
45-54 years	1,062 (17.9)
55-64 years	510 (8.6)
65 or older	29 (0.5)
Unknown	35 (0.6)
Job role	
Doctor/physician	2,099 (35.4)
Nurse	1,145 (19.3)
Other AHP	1,079 (18.2)
Student	975 (16.4)
Non-clinical	252 (4.3)
Other	378 (6.4)
Unknown	17 (0.3)
Geographical region where training session was delivered*	
North West	111 (23)
London	102 (21)
East of England	58 (12)
South East	49 (10)
West Midlands	45 (9)

South West	39 (8)
Yorkshire & Humber	32 (6)
East Midlands	30 (6)
North East	23 (5)
Number of attendees by region*	
London	1,884 (21.6)
North West	1,808 (20.7)
West Midlands	1,036 (11.9)
South East	1,018 (11.7)
East of England	744 (8.5)
Yorkshire & Humber	681 (7.8)
South West	652 (7.5)
East Midlands	541 (6.2)
North East	368 (4.2)

*Total does not equal expected total as the region where the session took place was incomplete in several sign-in sheets and session delivery audit forms.

Table 4. Number of training recipients by Clinical Champion profession

	Training attendees by profession					
	Doctor (physician) (n=2116)	Nurse (n=1418)	AHP (n=1018)	Student (n=989)	Pharmacist (n=186)	Other (n=218)

Clinical champions by profession	Doctor/physician	1818	388	332	212	20	80
	Nurse	134	982	346	720	34	108
	AHP	18	28	290	51	132	24
	Other	146	20	50	6	0	6

Abbreviations: AHP, allied healthcare professional (e.g. physiotherapist).

Figures/graphics

None