TITLE

An evolving model of best practice in a community physical activity programme: A case study of 'Active Herts

ABSTRACT

Background:

Community-based physical activity programmes typically evolve to respond to local conditions and feedback from stakeholders. Process evaluations are essential for capturing how programmes are implemented, yet often fail to capture delivery evolution over time, meaning missed opportunities for capturing lessons learnt.

Methods:

This research paper reports on a staged approach to a process evaluation undertaken within a community-based UK 12-month physical activity programme that aimed to capture change and adaptation to programme implementation. Twenty-five one-to-one interviews, and twelve focus groups took place over the three years of programme delivery. Participants included programme participants, management, and service deliverers.

Results:

Programme adaptations that were captured through the ongoing process evaluation included changes to the design of promotional material, programme delivery content, ongoing training in behaviour change and the addition of regular participant community events. We address how these strands evolved over programme delivery, and how the process evaluation was able to capture them.

Conclusion:

The pragmatic evaluation approach enabled changes in response to the local context, as well as improvements in the programme to be captured in a timely manner, allowing the delivery to be responsive and the evaluation flexible.

BACKGROUND

Experimental designs such as randomised-controlled trials (RCT's) are considered the 'gold standard' scientific method[1], yet a challenge is that high intervention delivery fidelity may be difficult to replicate outside trial conditions due to diverse practice and settings[2]. These considerations particularly apply to community-based approaches[3,4]. Research that is acceptant to changes in delivery model, and utilises diverse methods and procedures, guided by the research question, is commonly referred to as 'pragmatic'[5]. Pragmatic evaluation aims to maximise the applicability of evaluation findings to real-world, usual-care settings[6] via responsive and adaptable protocols[7]. In the case of community-based interventions, pragmatic evaluation brings substantial benefit by allowing evidence to be generated within the crucially important context of programme delivery, though they are often carried out with limited time and resource[8].

A vital component of a pragmatic evaluation is the process evaluation. Bauman and Nutbeam[9(p51)] describe this as a *"set of activities directed towards assessing progress in implementation of a project or programme*". The process evaluation is central to pragmatic evaluation, allowing researchers to assess fidelity of delivery, the active ingredients that generate effect, the degree of acceptability, and population reach[9,10]. This is particularly important for providing insight into the changes to the programme that may have been made and the impact they have on outcomes. Process evaluations can provoke community conversation about the wider barriers and facilitators to the intervention; for example, changing communication material for children as they become older, or modifying data collection methods[11].

Despite their critical importance, process evaluations of community-based physical activity interventions are rarely published, meaning vital evidence on programme implementation is lacking[9]. An even greater concern is that often, process evaluations are reported with limited focus on exploring how and why an intervention has changed over time, particularly in response to context in the early delivery stages. This is key as the context of the delivery can vary, requiring intervention evolution and development; thus, while overarching changes to programme delivery may be captured and reported through, for example, the Template for Intervention Description and Replication (TIDieR) checklist[12], rich descriptive insight into change may be lost. The lack of reporting of process evaluations also means that there is little insight into why a programme may or may not have been successful in achieving its outcomes, and what modifications may need to be implemented in order for it to be successful in the future[9].

Community-based physical activity programmes aim to improve the health of those who reside in a location or identify as belonging to a community grouping which may, for example, be based on race, culture, or socioeconomic situation[13]. They can be especially effective as they can encourage members of the community to be involved in design, implementation, and evaluation. In doing so, the community feel ownership and the interventions can be better tailored to reach a large number of participants, increasing impact and promoting sustainability[14]. Community-based approaches also allow researchers to evaluate how interventions perform in real-world settings, as opposed to the often-controlled conditions of a RCT, generating evidence that can lead to population-level improvements in physical activity[15].

The delivery method is a crucial component of effective community-based physical activity interventions[16]. A review by Kahn et al[17] highlights the importance of personal support, either delivered via face-to-face interactions or by telephone. Bock et al[18] provide further support in a meta-analysis, where they identified tailored intervention content to be highly effective among community-based physical activity interventions. Further, the authors identify, as do Morgan et al[16], a need for more physical activity interventions to undergo continuous improvement by identifying factors that have either helped or hindered programme success.

Using a case study of a targeted community physical activity intervention delivered in England, this paper explores how a responsive, ongoing process evaluation focusing on programme delivery, recruitment and sustainability, generated a trail of evidence about programme development and evolution in real world contexts, and considers the need for wider adoption of this approach within community-based physical activity interventions.

METHODS

'Active Herts' programme

'Active Herts' was a community-based physical activity behaviour change programme, delivered in four socio-economically disadvantaged districts of Hertfordshire, England over a three-year period, funded by Sport England, the local government agency and local Clinical Commissioning Group. Each participant spent up to 12 months on the programme, which ran for three years in total. The content of the programme was based on a systematic review of effective behaviour change techniques for the promotion of physical activity and the reduction of sedentary behaviour in inactive adults[19]. The target population were inactive adults (who identified themselves as achieving less than 30 minutes of moderate to

93 vigorous physical activity per week) who had one or more risk factors of cardiovascular
94 disease (CVD) and/ or mild to moderate mental health condition. Programme participants
95 were either referred by their health care professional (e.g. General Practitioner) or self-
96 referred. The programme had an initial one-to-one consultation with a staff member known
97 as a 'Get Active Specialist' (hereafter known as the Specialist), where programme
98 participants' barriers and enablers towards physical activity were explored using a COM-B
99 behavioural diagnosis[20,21] and future engagement facilitated using a selection of behaviour
100 change techniques, aided by motivational interviewing[22] and a behaviour change booklet.
101 The consultation ended with the selection of a favoured physical activity or exercise class for
102 the coming 12 weeks. Follow-up consultations between the Specialist and programme
103 participant took place at 2-weeks (by telephone), three, six and twelve months.

104 Programme funding was conditional on the production of evidence on programme
105 effectiveness, and therefore a quasi-experimental approach was developed and described in
106 the Active Herts delivery protocol[23]. This used two models of delivery; the 'standard' model
107 involved the Specialist referring to existing physical activity provision in the community,
108 whilst delivery was 'enhanced' in two localities by an added free-to-access twelve-week
109 group-based physical activity programme tailored to the needs of programme participants
110 and often run by the Specialist. The enhanced model also planned to include a volunteer
111 'Buddy' scheme to support participants by attending the first session with them. Over the
112 course of the programme, changes to the delivery models and methods of participant
113 recruitment occurred, as highlighted by the process evaluation.

114 **Ethics**

Ethical approval for the evaluation of Active Herts was granted by the Faculty of Medical and Health Sciences Research Ethics Committee at the University of East Anglia (Ref: 2015/2016 – 28). Informed consent was obtained from all participants included in the process evaluation.

Design

A qualitative design was used, involving semi-structured interviews and focus groups.

Participants

Sixty-one participants were involved in the process evaluation interviews. In total, qualitative data was collected through 25 one-to-one interviews and 12 focus groups. Participants included programme and operational management, deliverers and providers, recruiters, programme participants, and university academics/ behaviour change trainers.

Data Collection

Semi-structured topic guides around several key themes provided a structure for data collection, whilst enabling new topics to be introduced and explored (see supplementary file 1). Sessions were conducted either face-to-face or by telephone, and took place in three phases, one for each year of the programme. Whilst some individuals were interviewed more than once, no participant completed more than one interview at any phase.

Phase One focused on participant recruitment and included six sessions (2 focus groups, 4 one-to-one interviews) lasting between 20-120 minutes. Phase Two focused on the programme delivery and included 10 sessions (5 focus groups, 5 one-to-one interviews), lasting between 20-90 minutes. Phase Three involved 21 sessions (5 focus groups, 16 one-to-one interviews) focussing on programme sustainability, and lasting between 15-90 minutes.

Data Analysis

Data collection and analysis over the three phases involved different researchers (LB, SD, JH, and RO). Each wrote an end-of-year report whilst a separate set of researchers (SC and AB) synthesised the findings from the previous years, for this manuscript, referring back to original transcripts when required.

Sessions were transcribed verbatim by the researchers. Interview transcripts were read and coded using NVIVO11 software package produced by QSR. A thematic analysis[24] approach was undertaken, using the broad themes of the interview topic guides as the priori framework. This was then supplemented by additional themes that were identified during an iterative reading and coding process. We present findings based on elements of the programme which were substantially adapted, and elements that were seen to make a significant contribution to the success of the programme. Their selection was initially based on the research team's analysis of process evaluation interviews, but were further verified during annual reporting of process evaluation findings to programme management and delivery staff.

RESULTS

Figure 1 outlines the original delivery model as described in the Active Herts Protocol[23] along with the final delivery model followed at the end of the programme. Significant differences between the programme delivery, recruitment, and methods to support the ongoing sustainability of the programme, as described, and as ultimately delivered are apparent. Figure 1 also addresses the drivers for changes to delivery that would not have been captured without the ongoing process evaluation.

We report on five key themes of the programme: *1) 'Engagement with primary care', 2) 'Tailored exercise classes', 3) 'Training in behaviour change', 4) 'Conversation Cafés and 5) 'Recruitment material',* and highlight their role and evolution during the course of delivery, recorded by the process evaluation.

1) Engagement with primary care

Recruitment of the target audience through primary care settings such as General Practice (GP), was an important feature of the programme. However, referral rates were initially lower than anticipated and the Specialists found that GPs in some areas did not embrace the scheme. This appeared to be due to competing priorities, a lack of time and a wealth of initiatives to which Practices could refer patients onto.

"When we started this project … it was envisaged that the GPs would jump on board, love it and refer loads of people in. But it sort of soon became apparent they've only got 10 minutes with the patients, so they're in a rush so and so many different things that they can refer in to, so many competing projects as well, that the referrals didn't come thick and fast." (Specialist, Phase Three)

However, in one district, the Specialist was located within a community trust that had a strong local reputation, helping to gain local buy-in.

"The fact that we've had the name and the brand of the football club which the GP knows that quite well. Because it's not NHS it's not public health, that's not a local council so it's quite a neutral ground in that way. It is a recognised and trusted brand that people have seen" (Specialist, Phase Three)

Over time the Specialists were able to build relationships with GPs, and referrals increased.

"I think a lot of the time with NHS staff, especially clinicians, you really do have to kind of prove yourself, and [the Specialist] has done that. He's proved to be reliable

and knowledgeable and trustworthy and that's really reaped dividends in terms of that kind of partnership between the camps of the NHS" (Specialist host employer, Phase Three)

An important factor was not only building relationships with clinicians but also practice managers and locality leads.

"After about nine months I got introduced to the locality manager. … now if I want to know a practice manager, I want to know who a lead GP is, I need an email address, I need help, I need support,… so I think, you know, not only is it practice managers within the surgeries, it's the other hierarchy that sort of sit above them" (Specialist, Phase One)

Despite the initial difficulties, GPs were the most common route of referral throughout the programme, comprising 76% of all referrals. Programme participants, the Specialists, and programme management consistently reported how referrals through GPs provided programme credibility and additional quality assurance for potential participants.

"The fact that it's in the GP's surgery adds a bit of credibility to the project, because people are used to going there and they sort of respect what you're doing, perhaps a little bit more than somewhere else, it's a professional environment" (Specialist, Phase Two)

2) Tailored exercise classes

Tailored exercise classes were originally introduced as an additional option within the enhanced delivery model areas. These were run by either the Specialists or local instructors. Programme participants thought highly of these instructors and developed a good rapport with them.

"Those activity sessions have proved so valuable in terms of the way that [the Specialist] and the coaches that he's recruited have supported people." (Host employer, Phase Three)

The tailored activity sessions enabled a wider range of options for participants, along with additional ongoing support over and above other activities that individuals could be referred onto.

"I've been treated for a mental illness the last twenty years but come a long way…It's nice, the whole group being mature, you expect they have an ability to respect one another." (Programme participant, Phase Two)

They were also seen by the Specialists as an opportunity for programme participants to meet one another and take part in a welcoming exercise class for all abilities.

"I try and kind of reaffirm the individuals that I am seeing, to say that the sessions that we run through the Active Herts programme are suitable for all abilities… I just try to make this point clear, we're not sergeant major, we're not there blowing whistles, shouting, and pointing fingers. It is more of a relaxed atmosphere, and actually, we're trying to make exercise fun, and actually more about the social element." (Specialist, Phase Two)

In contrast, participants who were signposted to activity sessions elsewhere, out of the control of the Specialist, felt that they were not suitable for participants like themselves, and some also found provision unreliable.

"There have been some providers that have left, let us down I suppose. Like groups that have been up and running and I've, for example, sent people onto them, and then suddenly [The Instructor has] stopped the group and not told anyone… I've got another group….designed for fifty plus, a men's only group, and…because he

[instructor] needed to cover a spin class, so he's taken all of the…guys into to do spin… and when you've got guys in their 60s, 70s who were meant to be doing quite gentle circuits, spin is not the one, and they've come back to me, to complain about it; even though there's nothing I can do … it does infuriate me quite a lot." (Specialist, Phase Two)

Through feedback gathered during the process evaluation and conversations amongst the Specialists, one district delivering the standard model recognised a gap in their provision and gained additional funding to deliver classes that they were able to refer programme participants onto, in a similar manner to the tailored exercise classes in the 'enhanced' arm of delivery. The Specialist was involved in the delivery of this programme, so whilst the tailored exercise classes were not exclusively for Active Herts participants, they were invited to attend.

3) Training in behaviour change

The use of a theoretically-driven behaviour change approach by the Specialists was an integral part of the programme model from the beginning. Prior to delivery, Specialists received tailored training[25,26] across two days by AC to perform a COM-B behavioural diagnosis[20,21], using motivational interviewing[27,28] and Health Coaching[29] to identify barriers and enablers to physical activity, and to deliver a selection of Behaviour Change Techniques[30,31] to support future engagement.

"I think this training element is one thing that doesn't happen routinely in other programmes. So the training isn't just motivational interviewing and health coaching, it's behaviour change theory and so what we've managed to do is not only train the Get Active Specialists in why people may or may not engage in behaviour but they know how to deal with those in conversation." (Academic, phase two)

This training offered a 'Road Map' to consultations and was followed up after three months. During this follow-up training, from a role-play exercise with the Specialists using the Motivational Interviewing Treatment Integrity Scale[32] and listed BCTs[23], it was clear there was a need and desire for additional training and 'supervision' to support skill development, application, and programme delivery and fidelity. A key development was regular quarterly 'booster' behaviour change training sessions to support the Specialists with challenging consultations. Their ability to effectively utilise this behaviour change approach had a positive impact on the programme. One Specialist explained how using motivational interviewing and the behaviour change booklet during the initial meeting and follow up helped break down programme participants' barriers towards engaging in physical activity.

> *"Using the booklets in consultations has been integral…, you're creating a bit of dialogue to get more of these answers and responses that are very powerful for me to then continue that conversation but then for me to eventually signpost to something they would like to try and then to get their foot in the door and give it a go." (Specialist, Phase Three)*

The person-centred approach plus ongoing support that the Specialists provided enabled participants to feel a sense of continual support.

> *"She was very proactive, she's there by email and there by phone. The contact and the advice is great because it's always been advice that's detailed towards you." (Participant, Phase Two)*

The addition of ongoing training, supervision and support from AC and NH around the use of the behaviour change approach allowed the Specialists to grow in confidence and advance their knowledge and ability to use such techniques. This grew throughout programme

delivery, meaning that the experience of programme participants towards the end of delivery was enhanced from that at the outset.

4) Conversation Cafés

Conversation Cafés, a concept that encouraged programme participants to meet one another and their Specialist in a local setting with refreshments, were introduced following discussions with the Specialists and Behaviour Change Trainers during Phase one of the process evaluation to encourage participants to complete follow-up evaluation questionnaires. The Specialists found that the Cafés became an important peer-to-peer support mechanism, allowing programme participants to meet others and to discuss their physical activity journey over a hot drink.

"Initially it was trying to get more evaluation questionnaires completed, then it evolved so that it was almost like a feedback forum, so we could find out what people enjoyed, what they didn't like, what their suggestions were. We also found that it was an organic form of buddying so the people that came along would talk about certain sessions that they go along to" (Project Co-ordinator, Phase Three)

Though not included within the original delivery model, the importance of the interaction provided by the Conversation Cafés became more evident as the programme evolved. In particular, the opportunity for participants to talk to one another without a structured agenda.

"We had lots of fruit, we had drinks after, and I asked if anyone would like a presentation, each time I do it I can talk to you about a different subject. And they said "You know what, no, we would rather just meet up and talk to you and talk to each other", and I love just. I'm kind of I'm the facilitator within this, so we kind of sit

within a group and I ask some questions, always open-ended of course, and I let them lead the conversation and they just bounce off each other." (Specialist, Phase Three).

They also allowed programme participants to give feedback on the exercise classes they have been attending, allowing others to consider if this might be a class that they would like to attend.

"So, they're using each other to overcome barriers, and my last one last week - one of the gentlemen said "I found this really, really valuable. I've got ideas from other people just from coming today", and he ended up coming to my class this morning, so... I think it was really effective." (Specialist, Phase Two)

The evolution of Conversation Cafés illustrates how integral they became to the core of the programme; whilst their initial purpose was to improve engagement with the evaluation, they soon became highly valued as an opportunity for participants to meet and share experiences.

5) Recruitment material

At the start of the programme, promotional literature was created to advertise Active Herts. However, programme management soon realised that the material was not portraying the right message to encourage individuals to join the programme.

"A couple of the messages within the initial marketing were things like… 'I'm doing it for the team'. That one really stands out for me… People who'd be doing it for the team, you'd expect they'd already be taking part in sports, so we have reviewed the messages. We've kept with the 'I'm doing it…' as the motivator, and then the additional messages… We've looked at the reasons why people are doing it…we asked the participants and Get Active Specialists what sort of messages might be useful," (Project Co-ordinator, Phase Two)

Following consultation with participants and the Specialists, the promotional literature was revised to better reflect the intended target audiences' likely motivators for participating in physical activity. All stakeholders felt that the revised promotional literature was much more relatable to the intended target audience.

"Our second round of marketing I think has been more effective than the first lot… Some of those were working but when [Project Co-ordinator] took it on to do some different ones, which was like 'I'm doing it to improve my diabetes', 'I'm doing it to lose weight' … and I think they're much more effective" (Specialist, Phase Three)

Two delivery areas produced short videos that were effective in conveying the nature of the programme for the target group. They helped individuals looking to join the programme the chance to better understand the programme and what they could achieve if they joined.

"It was really trying to portray an image of showing people in the programme. There's a lot of different ages, shapes sizes, and abilities as well who have been in the programme for a good three months, some maybe a year or more… it's been useful for me to use that in the initial consultation for anyone that's in the pre-contemplation phase, you know, they're still a bit anxious about starting." (Specialist, Phase Three)

Whilst conversations about changing the promotional material took place outside of the evaluation, the annual cycle of process evaluation gave the opportunity to capture the importance of developing the promotional materials that the target audience could identify with; whilst also illustrating the importance of on-going consultation with the intended audience and the difference appropriate marketing materials can make to people overcoming participation barriers.

DISCUSSION

349 This paper identifies how a pragmatic process evaluation closely aligned with programme
350 delivery can provide transferable learning that can enhance the delivery of similar public
351 health interventions. The process evaluation undertaken on Active Herts extended beyond
352 the five themes addressed in the results, but the scope of material presented in this paper
353 was deliberately limited, in order to focus on key adaptations to the programme evolution,
354 and elements of the programme which contributed to the success of Active Herts. The
355 model of Active Herts described at the launch of the programme differed substantially to
356 that ultimately delivered. Indeed, such diversion is to be expected; in community-based
357 delivery, evolution valuation and adaptation is common, whilst the requirement to adhere
358 to a protocol can be problematic and even undesirable as the intervention adapts from
359 learnings from delivery and the evolving needs of the target population.

360 Conducting process evaluation as an on-going activity enables a more fine-grained
361 understanding of the programme to be gathered than would be the case if a single snapshot
362 was taken at delivery conclusion. For Active Herts, the process evaluation was conducted
363 through annual cycles of interviews, across three years, rather than through more on-going
364 approaches such as the use of participant diaries, or the analysis of programme
365 documentation such as meeting minutes. Our approach was taken to make the most
366 appropriate use of limited resources. The change of researchers at each cycle of interviews
367 allowed for diversity of perspectives but meant it was somewhat challenging for the
368 research team to stay familiar with any changes to the programme delivery model.
369 Nevertheless, the annual cycles of reporting assisted with this matter by allowing
370 researchers to keep track of any changes. Additionally, researchers were present at
371 programme steering group meetings and this enabled them to stay aware of changes to the

programme and make necessary amendments to interview schedules. The yearly interviews were informative to the research team but, in the case of Active Herts, they also allowed management to adapt the delivery model to ensure the programme improved and fitted the local context and target population. Conversation Cafés provide an example of this; initially set up to increase follow-up data collection, they became an important mechanism for peer support. This method of social support within a community setting has been shown by Heath et al[33] to reinforce physical activity behaviour. The impact of social support is also supported by Matz-Costa et al[34] who highlight the effect of peer-to-peer support on participant's activity levels and retention rates.

Tailored, free exercise classes were a consistent element of the programme for enhanced delivery model areas, and these were later introduced into one of the standard areas as a result of the constant positive feedback. Tailored activities have been shown to have a positive impact on individual's level of physical activity[35]. Their benefits are also highlighted by Bock et al[18] and amongst recommendations within the 'physical activity strategy for WHO European Region 2016-2025'[36] who identify the need for physical activity to be tailored towards individual's health needs and preferences. Tailored messaging and materials have also been shown to be important to successful adoption and adherence [37,38]. Within Active Herts, the tailored messaging and advice that Specialists provided encouraged participants to maintain participation during their time on the programme. The training that the Specialists received by experts on behaviour change techniques, motivational interviewing and health coaching was also crucial to this success.

Engagement with primary care has been widely found to be an ideal setting for recruitment into physical activity interventions[39,40] and within this programme, recruitment through

primary care was felt to add assurance and credibility for programme participants. Though the programme had lower referrals levels through this sector than first anticipated, the process evaluation was able to capture the challenges that the Specialists initially had engaging with primary care, such as competing opportunities being offered to GPs. Such learnings allowed primary care to be the most common route of referral into the programme across all three years of delivery and should be considered among future community-based interventions.

A key strength of the process evaluation was the ability to gather thoughts from a range of individuals with different perspectives of the programme over time, including stakeholders and programme participants. Additionally, a-priori testing of programme theory to develop interview schedules and a deductive coding framework which was then supplemented by additional themes that were inductively identified during the reading and coding process, allowed programme modifications to be captured and interviewers and participants to discuss issues beyond the interview schedules[41,42]. The use of annual cycles of interviews may have meant that minor changes to the programme were missed, but we are confident that all major successes and modifications to the programme were captured and are reported in this paper. In reporting our work, we were guided by the Standards for Reporting Qualitative Research (SRQR)[43] however, some elements of the SRQR were found to be more suited to a focussed qualitative investigation of a specific research question, rather than to our use of qualitative methods to gather multiple views of a complex intervention.

The willingness of programme management to adapt their approach and their openness to feedback was crucial as without this, the programme would not have been able to evolve.

418 This was found by Schneider et al[11] who adopted a continuous process evaluation that
419 allowed them to monitor success and challenges of an intervention and make quick
420 modifications to elements of the programme which were poorly performing. Findings were
421 regularly shared with programme management and delivery teams during programme
422 meetings and within yearly evaluation reports. This strong relationship among stakeholders,
423 participants and researchers enabled quick modifications to be made, and ensured that
424 stakeholders had access to evidence on the programme for use in future funding
425 applications[44]. Though this research highlights the importance of conducting a process
426 evaluation, it is of concern that identifying and reporting adaptations and programme
427 changes within physical activity research may still be overlooked. A recent taxonomy for
428 reporting physical activity referral schemes by Hanson et al[45] includes participant measures
429 within the monitoring and evaluation of a referral scheme (for example, attendance and
430 uptake of physical activity) but does not include any recommendations to report
431 adaptations to programme design.

432 CONCLUSION

433 Community-based programmes are inherently complex and often need to adapt to meet the
434 needs of the environmental-setting, or target population in which they are being carried
435 out, yet these adaptations are often not known prior to programme delivery commencing.
436 Pragmatic evaluations fit well within community-based interventions with data collection
437 cycles, allowing the capture of challenges and success of the programme over its course of
438 delivery, and enabling delivery to be responsive to need. This work extends current
439 knowledge and practice in the area of programme evaluation and future intervention
440 designers should consider the adoption of pragmatic programme evaluations.

ACKNOWLEDGEMENTS

We would like to thank Lucy Bain (LB), Sarah Dalzell (SD), Julie Houghton (JH), and Rebecca Owens (RO) for their contribution to the evaluation of Active Herts, as well as all the programme management at Herts Sports Partnership, the four Get Active Specialists, the service providers, and all programme participants for their invaluable help with the evaluation.

FUNDING SOURCE

This work was supported by Sport England (ref: 2015000295), Broxbourne Borough Council, East and North Herts Clinical Commissioning Group (CCG), Herts Valley CCG, Hertfordshire Public Health, Herts Mind Network, Mind in Mid Herts, and Herts Sports Partnership.

REFERENCES

1. Robson C, McCartan K. *Real World Research: A Resource for Users of Social Research Methods in Applied Settings*. 4th ed. West Sussex, UK: John Wiley & Sons Ltd; 2016.
2. Saturni S, Bellini F, Braido F, et al. Randomized controlled trials and real life studies. Approaches and methodologies: A clinical point of view. *Pulm Pharmacol Ther*. 2014;27(2):129-138. doi:10.1016/j.pupt.2014.01.005
3. Durlak JA, DuPre EP. Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *Am J Community Psychol*. 2008;41(3-4):327-350. doi:10.1007/s10464-008-9165-0
4. Helmink JHM, Meis JJM, de Weerdt I, Visser FN, de Vries NK, Kremers SPJ. Development and implementation of a lifestyle intervention to promote physical activity and healthy diet in the Dutch general practice setting: The BeweegKuur programme. *Int J Behav Nutr Phys Act*. 2010;7(1):49. doi:10.1186/1479-5868-7-49

5. Morgan DL. Pragmatism as a Paradigm for Mixed Methods Research. In: *Integrating Qualitative and Quantitative Methods: A Pragmatic Approach*. ; 2017:25-44. doi:10.4135/9781544304533.n2

6. Patsopoulos NA. A pragmatic view on pragmatic trials. *Dialogues Clin Neurosci*. 2011;13(2):217-224. doi:10.31887/dcns.2011.13.2/npatsopoulos

7. Feilzer MY. Doing mixed methods research pragmatically: Implications for the rediscovery of pragmatism as a research paradigm. *J Mix Methods Res*. 2010;4(1):6-16. doi:10.1177/1558689809349691

8. Milton K, Kelly P, Richards J. Pragmatic Evaluation in Physical Activity and Health – Global capacity building courses. *Aspetar Sport Med J*. 2019;8(1):182-185.

9. Bauman A, Nutbeam D. *Evaluation in a Nutshell: A Practical Guide to the Evaluation of Health Promotion Programs*. 2nd ed. Sydney, AU: McGraw-Hill; 2013.

10. Steckler AB, Linnan L, Israel B. *Process Evaluation for Public Health Interventions and Research*. Vol 28. San Francisco, CA: Jossey-Bass; 2002.

11. Schneider M, Hall WJ, Hernandez AE, et al. Rationale, design and methods for process evaluation in the HEALTHY study. *Int J Obes*. 2009;33(SUPPL. 4):S60-S67. doi:10.1038/ijo.2009.118

12. Hoffmann TC, Glasziou PP, Boutron I, et al. Better reporting of interventions: Template for intervention description and replication (TIDieR) checklist and guide. *BMJ*. 2014;348. doi:10.1136/bmj.g1687

13. Foulds HJA, Bredin SSD, Warburton DER. The effectiveness of community based physical activity interventions with Aboriginal peoples. *Prev Med (Baltim)*. 2011;53(6):411-416. doi:10.1016/j.ypmed.2011.09.008

14. Bopp M, Fallon E. Community-based interventions to promote increased physical

488 activity: A primer. *Appl Health Econ Health Policy*. 2008;6(4):173-187.
489 doi:10.2165/00148365-200806040-00001
490 15. Mummery WK, Brown WJ. Whole of community physical activity interventions: Easier
491 said than done. *Br J Sports Med*. 2009;43(1):39-43. doi:10.1136/bjsm.2008.053629
492 16. Morgan PJ, Young MD, Smith JJ, Lubans DR. Targeted Health Behavior Interventions
493 Promoting Physical Activity: A Conceptual Model. *Exerc Sport Sci Rev*. 2016;44(2):71-
494 80. doi:10.1249/JES.0000000000000075
495 17. Kahn EB, Ramsey LT, Brownson RC, et al. The effectiveness of interventions to
496 increase physical activity: A systematic review. *Am J Prev Med*. 2002;22(4 SUPPL.
497 1):73-107. doi:10.1016/S0749-3797(02)00434-8
498 18. Bock C, Jarczok MN, Litaker D. Community-based efforts to promote physical activity:
499 A systematic review of interventions considering mode of delivery, study quality and
500 population subgroups. *J Sci Med Sport*. 2014;17(3):276-282.
501 doi:10.1016/j.jsams.2013.04.009
502 19. Howlett N, Trivedi D, Troop NA, Chater AM. What are the most effective behaviour
503 change techniques to promote physical activity and/or reduce sedentary behaviour in
504 inactive adults? A systematic review protocol. *BMJ Open*. 2015;5(8).
505 doi:10.1136/bmjopen-2015-008573
506 20. Michie S, van Stralen MM, West R. The behaviour change wheel: A new method for
507 characterising and designing behaviour change interventions. *Implement Sci*.
508 2011;6(1):42. doi:10.1186/1748-5908-6-42
509 21. Michie S, Atkins L, West R. *The Behaviour Change Wheel: A Guide to Designing*
510 *Interventions*. Great Britain: Silverback Publishing.; 2014.
511 22. Rollnick S, Miller WR. What is Motivational Interviewing? *Behav Cogn Psychother*.

1995;23(4):325-334. doi:10.1017/S135246580001643X

23. Howlett N, Jones A, Bain L, Chater A. How effective is community physical activity promotion in areas of deprivation for inactive adults with cardiovascular disease risk and/or mental health concerns? Study protocol for a pragmatic observational evaluation of the "Active Herts" physical activ. *BMJ Open*. 2017;7(11). doi:10.1136/bmjopen-2017-017783

24. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3(2). doi:10.1191/1478088706qp063oa

25. Chater A. *Motivational Interviewing, Health Coaching and Behaviour Change. Enhancing Communication Skills for Effective Consultations. Training Manual*. Bedfordshire: SEPIA Health; 2015.

26. Chater A. Behavioural problems: The power of language: Why patient consultations often fail to change behaviour. *Brew Freuds Heal Behav Spec Issue*. 2015:68-71. https://thebrewery.com/journals/health-behaviour/behavioural-problems.

27. Miller, W. R, Rollnick S. *Motivational Interviewing: Helping People Change*. 3rd ed. New York: Guilford press.; 2012.

28. Rollnick S, Miller, W. R, Butler, C. C. *Motivational Interviewing in Health Care*. New York: Guilford Press; 2008.

29. Whitmore J. *Coaching for Performance: A Practical Guide to Growing Your Own Skills*. London, UK: Nicholas Brealey Publishing; 1995.

30. Michie S, Richardson M, Johnston M, et al. The behavior change technique taxonomy (v1) of 93 hierarchically clustered techniques: Building an international consensus for the reporting of behavior change interventions. *Ann Behav Med*. 2013;46(1):81-95. doi:10.1007/s12160-013-9486-6

536 31. Howlett N, Trivedi D, Troop NA, Chater AM. Are physical activity interventions for
537 healthy inactive adults effective in promoting behavior change and maintenance, and
538 which behavior change techniques are effective? A systematic review and meta-
539 analysis. *Transl Behav Med*. 2019;9(1):147-157. doi:10.1093/tbm/iby010
540 32. Moyers TB, Martin T, Manuel JK, Miller WR, Ernst D. Revised global scales:
541 Motivational interviewing treatment integrity 3.1. 1 (MITI 3.1. 1). *Unpubl manuscript,*
542 *Univ New Mex Albuquerque, NM*. 2010.
543 33. Heath GW, Parra DC, Sarmiento OL, et al. Evidence-based intervention in physical
544 activity: Lessons from around the world. *Lancet*. 2012;380(9838):272-281.
545 doi:10.1016/S0140-6736(12)60816-2
546 34. Matz-Costa C, Howard EP, Castaneda-Sceppa C, Diaz-Valdes Iriarte A, Lachman ME,
547 Pruchno R. Peer-Based Strategies to Support Physical Activity Interventions for Older
548 Adults: A Typology, Conceptual Framework, and Practice Guidelines. *Gerontologist*.
549 2019;59(6):1007-1016. doi:10.1093/geront/gny092
550 35. Frändin K, Grönstedt H, Helbostad JL, et al. Long-Term Effects of Individually Tailored
551 Physical Training and Activity on Physical Function, Well-Being and Cognition in
552 Scandinavian Nursing Home Residents: A Randomized Controlled Trial. *Gerontology*.
553 2016;62(6):571-580. doi:10.1159/000443611
554 36. World Health Organization. *Physical Activity Strategy for the WHO European Region*
555 *2016-2025*.; 2016.
556 37. Marcus BH, Bock BC, Pinto BM, Forsyth LAH, Roberts MB, Traficante RM. Efficacy of
557 an individualized, motivationally-tailored physical activity intervention. *Ann Behav*
558 *Med*. 1998;20(3):174-180. doi:10.1007/BF02884958
559 38. Williamson C, Baker G, Mutrie N, Niven A, Kelly P. Get the message? A scoping review

of physical activity messaging. *Int J Behav Nutr Phys Act*. 2020;17(1). doi:10.1186/s12966-020-00954-3

39. Stathi A, McKenna J, Fox KR. The experiences of older people participating in exercise referral schemes. *J R Soc Promot Health*. 2004;124(1):18-23. doi:10.1177/146642400312400108

40. Garrett S, Elley CR, Rose SB, O'Dea D, Lawton BA, Dowell AC. Are physical activity interventions in primary care and the community cost-effective? A systematic review of the evidence. *Br J Gen Pract*. 2011;61(584):e125-e133. doi:10.3399/bjgp11X561249

41. Fereday J, Muir-Cochrane E. Demonstrating Rigor Using Thematic Analysis: A Hybrid Approach of Inductive and Deductive Coding and Theme Development. *Int J Qual Methods*. 2006;5(1). doi:10.1177/160940690600500107

42. Azungah T. Qualitative research: deductive and inductive approaches to data analysis. *Qual Res J*. 2018;18(4). doi:10.1108/QRJ-D-18-00035

43. O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. Standards for reporting qualitative research: A synthesis of recommendations. *Acad Med*. 2014;89(9). doi:10.1097/ACM.0000000000000388

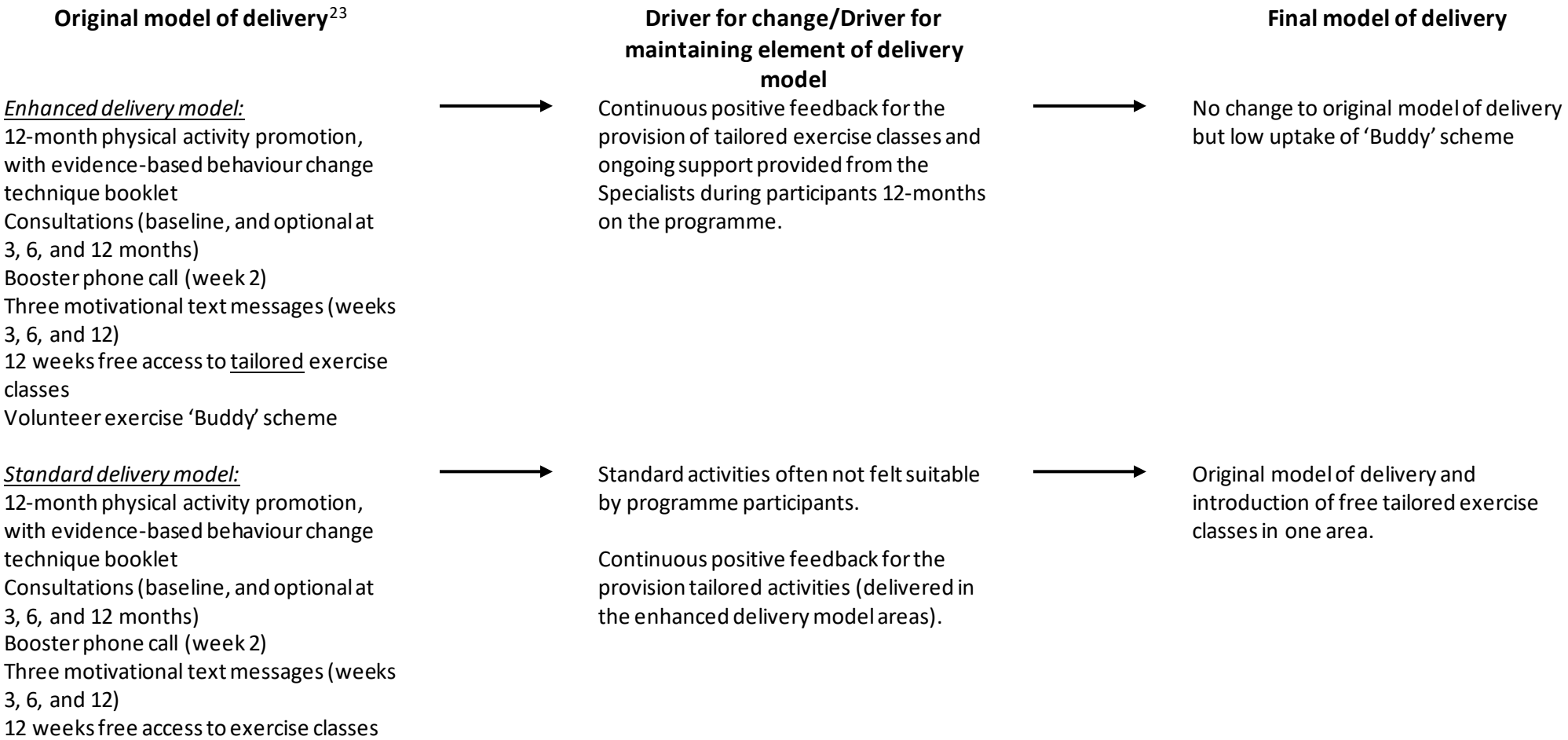
44. Fynn JF, Hardeman W, Milton K, Jones A. Exploring influences on evaluation practice: a case study of a national physical activity programme. *Int J Behav Nutr Phys Act*. 2021;18(1). doi:10.1186/s12966-021-01098-8

45. Hanson CL, Oliver EJ, Dodd-Reynolds CJ, Pearsons A, Kelly P. A modified Delphi study to gain consensus for a taxonomy to report and classify physical activity referral schemes (PARS). *Int J Behav Nutr Phys Act*. 2020;17(1). doi:10.1186/s12966-020-01050-2

FIGURES

Figure 1

Outline of original delivery model, final delivery model and the drivers for changing, or maintaining an element of the delivery model.



Primary route of referral through primary care, particularly GP surgeries	→	Lower number of referrals than first anticipated through primary care. Referral through GP surgeries was felt to add credibility and assurance to programme participants joining the programme.	→	Other referral routes were also explored in order to encourage more people onto the programme; for example, referral through support services. Primary route of referral remained through primary care, particularly GP surgeries, but lessons learnt about how to engage with practices.
Specialists use a tailored behaviour change approach during consultations with programme participants	→	Need to provide ongoing support to Specialists in behaviour change techniques, motivational interviewing and health coaching to enable reflection, further learning and skill development. Specialists found to be a key driver for change in programme participants attitudes and behaviours towards physical activity.	→	Continued behaviour change training and supervision through ongoing support, training, and feedback provided from qualified academics in behaviour change, motivational interviewing and health coaching.
No formal mechanism in programme design for informal peer-to-peer support between programme participants	→	Need to capture more follow-up evaluation data and provide an opportunity for programme participants to meet one another.	→	Provision of Conversation Cafés (programme participant community event) highly valued by participants.
Promotional material created to advertise the programme	→	Promotional material was not found to be relatable for the target programme audience or in the right formats e.g. video case studies.	→	Revised promotional material (content and delivery method) based on feedback from programme participants and the Specialists.