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Communities of Practice (CoP) - a public health tool for facilitating implementation of research into practice for a falls prevention exercise intervention; an ethnographic study

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ABSTRACT

Introduction

In public health there is often a disconnect in translating research into practice. The Falls Management Exercise (FaME) programme is an evidence-based exercise programme aimed at reducing falls in older adults. Whilst recommended as cost-effective by expert bodies, availability of and fidelity to the FaME programme remains inconsistent across England. This paper examines the role of communities of practice (CoPs) as a tool enabling the translation of FaME from research into practice.

Study design

Ethnographic study investigating the evolution of a CoP.

Methods

Qualitative analysis of CoP observations and semi-structured interviews, focussing on the creation and evolution of the CoP to support implementation of FaME. The project lasted three years. Data on CoPs were collected from three sources: video recordings of meetings, in-depth interviews with participants of the CoP and content analysis of formal meeting documents.

Results

We found this CoP was functional in a complex environment where commissioning and provision of FaME cut across public sector organisations. It evolved organically over time to support different elements of the delivery of FaME and help maintain its fidelity.

Discussion

CoPs can be a facilitative tool for translation of research into practice and for maintaining programme fidelity. This study provides evidence of the useful nature of CoPs as a public health management tool for the delivery of public health interventions (a community falls management exercise (FaME) intervention for older adults).

Key words

Communities of practice, ethnography, health care, public services, public health, interventions

Acronyms

PSI - Postural stability instructors

CoPs – Communities of practice

FaME - Falls Management Exercise

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INTRODUCTION

Falls in older adults are an important public health problem. Impacts are wide-ranging from direct pain and disability caused to the individual by the injury, leading to loss of independence and confidence (1) and significant costs to the healthcare system (2) Community-based strength and balance exercise programmes such as FaME can prevent falls (3, 4) but aspects of such effective programmes are not fully implemented in practice, or if they are implemented they are adapted in ways unintended by the researchers. A simple example might be that FaME has been shown to reduce falls following a 6 month group and home exercise programme, yet many FaME programmes now run in the community are 3 months long with little emphasis on the home based element. This disconnect between research evidence and putting it into practice is referred to as the second translational or implementation gap (5). The challenge of going from trial to everyday practice means losing some of the scrutiny of research and therefore this study provides insight into the development of a community of practice (CoP) and its role in maintaining scrutiny and fidelity of implementation for the FaME programme.

It is likely that there are a variety of barriers to the implementation of research into practice and some will be context-specific (6). One of the causes of this phenomenon is the change of context from research (where funding and leadership are typically provided by the research team) to routine practice. However, little is known about what generalisable strategies might help overcome these barriers enabling the diffusion of research. There is also a challenge in maintaining the fidelity of evidence-based interventions once translated into practice. Adaptation of interventions to suit the local context is important but can result in non-evidence-based changes being introduced, risking programme effectiveness (7). Communities of practice may provide a useful vehicle for supporting both the implementation of research evidence into practice, and maintenance of intervention fidelity. The term community of practice (CoP) was first coined by Lave and Wenger (1991)(8). Wenger defined CoPs as:

'*Groups of people who share a concern, set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis'* (9).

The disconnect between research and its implementation in practice stemming from a change in context from a motivated, controlled, and driven research setting to the real world is partly responsible for the implementation gap. Within healthcare, CoPs have been shown to enhance problem-solving and support changes to practice and may have a role in improving healthcare performance (10-12). Therefore, the purpose of this research was to explore the role of a CoP as a management tool to deliver and maintain the fidelity and sustainability of the FaME programme, and its evolution over time.

METHOD

Study design/context

This was an ethnographic study, triangulating interviews, observations of the interplay between participants in the CoP, and document content to provide a rich insight into the culture, perspectives and practices of the people within the FaME CoP and explore its evolution. FaME is a 24-week, group, community-based exercise programme delivered weekly by postural stability instructors (PSIs). The programme was studied across three different localities within the East Midlands region of England. Members of the CoP came from all three localities and included PSIs, their managers and commissioners who funded the programme. Most PSIs were employed by local authority leisure services, though some of these services were provided by third-sector and private organisations. Some PSIs were freelancers.

Data collection

The study lasted for three years. Data on CoPs were collected from three sources: video recordings of CoP meetings, in-depth interviews with CoP participants, and analysis of meeting documents (agendas, minutes, presentations). This enabled triangulation of findings (13). For this study, we observed three CoP meetings that took place between June 2016 to January 2017 although there were other activities going on with the CoP at the time. Data on these activities was collected in interviews and document review. Each meeting typically lasted for 120 minutes. Prior informed consent was obtained from the members of the CoP. Two researchers acted as observers, and one acted as facilitator since they had a dual role in the research team and as a senior manager locally (a Consultant in Public Health).

Semi-structured interviews happened at two time points. The first interview took place 2-3 weeks after the FaME programmes had begun and the second towards the end of the 24-week programme. Written consent was obtained prior to interview. Interviews were either face-to-face or over the telephone. There were specific interview guides for: PSIs (n=26, 17 interviewed twice), and their managers (n=6, 3 interviewed twice) and public health commissioners (n=8, all interviewed twice). Interviews were between 15 and 70 minutes. These were audio recorded and transcribed verbatim. Documents from the CoP events were also used, including minutes and presentations. This included the minutes from a fourth CoP event that was not video recorded. Observations of the interplay between participants in the CoP, interviews and document analysis were triangulated to provide a rich insight into the culture, perspectives and practices of the people within the FaME CoP.

Data analysis

Initially, the researchers immersed themselves in the data by reading each of the transcripts and viewing the videos. NVivo11 software was used to manage and code the data. For the analysis of the video recordings, an open coding technique was used on first analysis to identify emerging themes and patterns. The interview transcripts and CoP documents were then reviewed and coded to themes (14) identified through the

video recordings. Latent level analysis was used to help generate themes (15). The data was coded using an open coding technique, to identify themes and patterns. The codes were compared to the data extracts for similarities and differences and latent level analysis was used to generate themes(15). Thematic maps were created on paper and in NVivo. This allowed relationships and inconsistencies to be visualized and resolved. First level coding was done by the project RF and discussed with team members who had attended CoP meetings. The draft themes were discussed with and agreed by all the authors. Quotes in the text are accompanied by unique identifiers

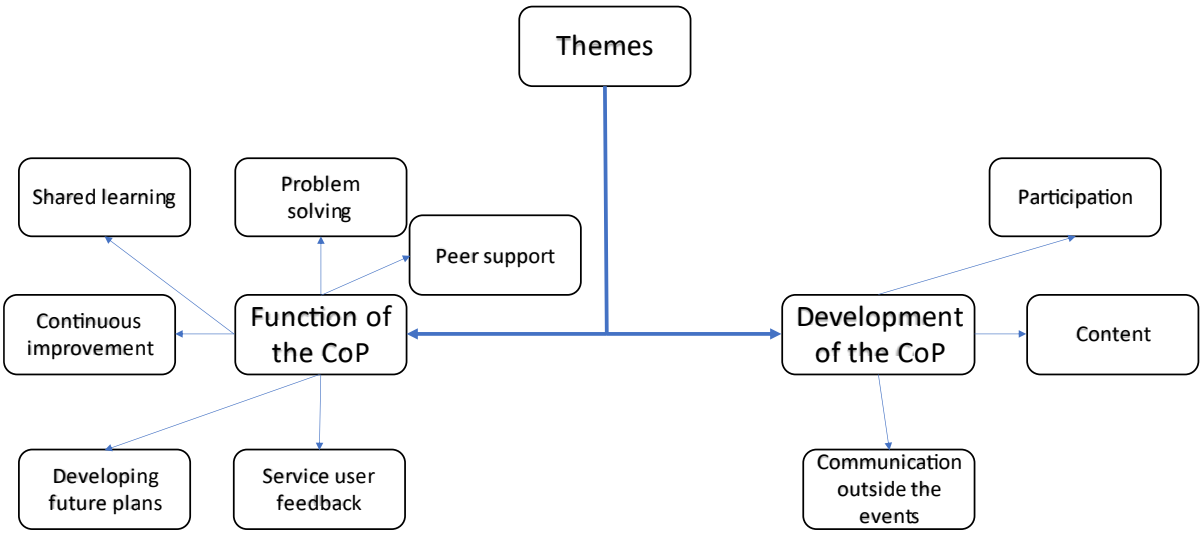
Ethical Approval

Ethical approval was granted by the University of Nottingham Faculty of Medicine and Health Sciences Research Ethics Committee.

RESULTS

The codes were broadly categorised into two themes: the *function of CoP* and the *development of the CoP;* with 9 subthemes (Figure 1). The function of the CoP focused on the learning processes of the CoP. We report these in detail to give a picture of what the CoP actually did, what was discussed and why. Data presented on the development of the CoP focused on social interaction and how the group matured.

Figure 1: Schematic of themes and subthemes



1) *Function of the Postural Stability Instructors Community of Practice*

Shared learning

The CoP events provided an opportunity for service providers and commissioners to share their experience of implementing FaME and the strategy they had employed, as there were differences in how each locality set up and delivered the programme.

The members of the CoP also shared their successes, positive outcomes and feedback that they had received from participants. We observed that many of the areas were reporting similar outcomes and feedback.

> *'We found that doing all the functional assessments together as a group worked really well rather than doing it individually, people could see the other person, there's a sense of camaraderie with that, so they wanted to see how they were progressing, so they encouraged each other to do that at the same time'*
>
> (PSI)

Another important function of the CoP was to give members an opportunity to share challenges they had faced. It helped commissioners understand common difficulties, and for PSI members and managers, by sharing lessons that they had learnt, they were able to learn from each other's experiences.

> *'splitting the class into ability levels, based on the ability of the participants so then to ensure continued adherence and suitable support. We found as well if the participants were in a class where it was too slow for them or too quick for them they weren't able to feel at ease or as comfortable.'*
>
> (Manager)

The CoP was used as a forum to discuss the wider falls pathway, prevention programmes that were running in the community and the relevance of these to FaME. The members discussed whether working with these other providers was viable, both in terms of using them as recruitment pathways into FaME and for signposting as alternatives where FaME classes were either at capacity or not deemed appropriate for an individual.

'Our partnerships with the falls service in [place] has been fantastic. I've been along to attend their final 6-week session when they've finished with the falls service and then taking referrals and meeting with the individuals straight away after that and kind of taking advice from the professionals just to say are they suitable for the programme.'

> (PSI)

Problem solving issues with the research study

The PSIs and managers used the CoP as a forum for raising problems. This was both in terms of questions for the research team regarding technicalities of the study (on transport, data collection and overall project timing and structure) and seeking the experience of other members in solving them.

> *'The data entry portion of things is quite time intensive, but I think we're quite lucky because I do that myself rather than the instructing side of things, but I just wondered if any other districts had that issue with regards to actually physically entering the data, do your instructors do it or…'*
>
> (Manager)

Continuous improvement

The CoP also provided an opportunity for the members to make suggestions of quality improvements. The members used it as a forum for raising new ideas to see whether they were feasible and whether they would be of benefit.

> *'So you're doing these functional tests at the start of FaME and at the end, so the functional reach, turn 180 and timed up and go, [*these are tests of the effectiveness of the programme*] but a PSI did mention why don't you redo these tests at 12 weeks because it will give a great idea of progression of how participants are going. Is this feasible, would this provide useful information to you as instructors?'*
>
> (Commissioner)

PSIs could share areas that they felt they lacked confidence. As a result, training sessions were planned to fill those gaps in knowledge and confidence in delivering the programme.

> *'As a result of that we as commissioners have put on two CPD sessions, they said you know the thing we find that we're not that confident about is called Backward Chaining, … I think that worked really well.'*
>
> (Commissioner)

Service User Feedback

The inclusion of service users in the third CoP event provided an opportunity for direct feedback from them about the programme. This also provided an opportunity for both commissioners and PSIs to float new ideas about the FaME programmes and gain immediate feedback.

> (Researcher) *'In terms of home exercises, did they give you like handouts, did you have a booklet, is there anything we can do to help you do any of those exercises more at home? Would a diary - how can we support you to do some more at home?'*

'I think that's a good idea, because if you gave us a diary that we had to fill in, we're more likely to do the exercises otherwise it's like I've done that at class, I don't need to do it at home and just put it to one side, but if we've got to give you, some kind of feedback then you're making us do it at home.'

(Service User Participant)

Developing future plans

One of the key themes throughout all CoP events was the sustainability of FaME beyond the initial programme that had been funded. There were discussions around funding options, and ways in which each area could integrate FaME into their current programmes of delivery. There were also discussions around what form FaME would take in the future in the different areas. This was for both bringing in new participants to the programme and for exit strategies for current participants to continue to be active.

'Any other ideas? Do you think you might get people to continue into other programmes? Walking programmes? What about your other active aging programmes?'

(Manager)

The CoP also provided an opportunity for collaboration between the various localities in their plans moving beyond the research. By the final session, there were plans to bring the PSIs together to formalise plans for maintenance classes so that these were consistent across the areas.

'*Currently there are no classes in [*the*] GP referral scheme which are like FaME – participants don't necessarily want to go on GP referral scheme as they like the structure of FaME. Can the maintenance sessions be integrated into the GP referral scheme as an alternative activity?'*

(Meeting Minutes)

Peer support

The CoP events provided an opportunity for PSIs, who usually work independently, to build a support network. This was particularly relevant in the implementation of this FaME programme as the PSIs were newly-trained and had not undertaken the programme with participants before. This support network also enabled the PSIs to cover each other's sessions and this was highlighted by one member as a key success of implementation. The value of the CoP in providing a support network was echoed in the interviews and enabled good practice to spread.

'I think what helped me was being able to talk to other PSIs. I'd recommend that particularly a new PSI starting if you've got queries speak to somebody else and you'd usually find that you're both concerned about the same thing or it really just helps to keep in touch.'

(Commissioner)

2) Development of CoP

Participation

In the early stages of the CoP, the participation of the members in discussions was unbalanced; the commissioners and managers were observed to be much more vocal than the PSIs. However, as the meetings progressed, there was more active involvement from PSIs, particularly when it concerned practical issues around getting the sessions up and running. As the CoP members became more familiar with each other, there was much more peer-to-peer discussion and problem solving as described above.

Content

Although both shared learning processes and continuous improvement of FaME were observed at the events throughout the study period, there was a shift in emphasis. In the earlier sessions, the sharing of experiences and transfer of knowledge between members of the CoP was the primary focus. By the time the next CoP event occurred three months later, we observed that the scope as reflected in discussions of the members shifted to how the programme could be improved and sustained such as by using technology.

(Researcher) *'Is that something we could potentially post on the website?' 'Yeah.' 'Is it, can we have a shared, a private area of the website?'*

'We can. We've got a, um, extranet so I can give you all passwords to a specific FaME page just for the, just for you guys which the public can't see.'

(Commissioner)

Communication outside the events

The CoP events were created as a way of bringing the commissioners, managers and PSIs together to discuss the implementation of FaME. However, as the programme developed, members also communicated outside of these organised events including requests to visit each other's sessions and the use of virtual networks for sharing information.

'I was just wondering are you going to be doing anything similar with your maintenance classes in terms of maybe peer supervision? are you going to be observing each other and offering feedback?'

'It's just time constraints really. I've like to go and watch somebody else's.'

(PSI)

At the final CoP event within the study period, there were ongoing plans for both peer visits and a virtual network for PSIs to be utilised as strategies for knowledge sharing and quality assurance. There were also plans for further sessions for PSIs to meet in person (based on shared desire) to continue the function of the CoP events as minutes from the meeting reported. The CoP continued after the study finished until the COVID19 pandemic.

DISCUSSION

Principal findings

This study investigated how a Community of Practice that was specifically established to support the implementation of a falls prevention exercise programme (FaME) with fidelity and quality evolved over time, and what functions it performed for participants.

CoP functions included: sharing learning, problem solving, agreeing activities supporting continuous improvement, listening to participant feedback, planning and peer support, in common with much of the literature including Wenger et al (9). Feedback happened in real time and commissioners were able to receive and act on information quickly such as setting up training programmes to fill knowledge/skill gaps.

CoPs exist in different forms, including those cultivated by organisations and used as a tool to consciously manage knowledge in order to improve outcomes (16-18). So, whilst this CoP was initially established as a formal setting for commissioners, managers and instructors to come together and problem-solve, findings related to the development of the CoP showed that relationships built over time (19, 20) and support continued outside of the CoP meetings. Content also shifted over time to be less strategic and more operational, and the weight of discussion shifted from commissioners to instructors over time.

Strengths and limitations

The study triangulated data from interviews, observations and formally-recorded meeting minutes. Integrating data from different sources in this way provides rigour and internal validity and allows and in-depth analysis of different perspectives and changing

perspectives over time. However, unlike the observation and content analysis it is possible that the interviews were subject to responder bias. Whilst the study was conducted over a 3-year time scale, which is longer than many studies in the literature, we did not observe any waning of CoP activity over time. In addition, although the CoP was guided by mangers initially, they gradually stepped back to let the practitioners lead and this did not appear to affect the effectiveness of the CoP even over time. That said, the longer term (5 -10 years) role and impact of this CoP is still poorly understood and there is a need for longer-term studies to understand this better. If a CoP were to be continued there would be a resource cost, but also benefits in terms of quality assurance, support for PSIs and innovation. Our study was of one CoP and therefore findings may not be generalisable to other CoPs. However, given that the same group of participants that deliver FaME, also deliver other programmes, the learning from this study may be transferable to the implementation of other exercise interventions delivered in the community. The CoP cut across organisational boundaries (including public sector leisure services and private sector freelance PSIs) and geographical locations (Leicestershire and Derbyshire) and although this was not tested in this study, we think it is an important development warranting further research as we know that CoPs have often been confined to one organisation. Furthermore, it is possible that the opportunities to tweak the mode of delivery to suit ongoing needs of the service users and conversations around integrating the FaME programme or aspects of it into other interventions running in the local areas may never have occurred if the CoP wasn't set up as it was.

Comparison to the literature

This study adds to the literature on the role of identity, cross-organisational membership, strong relationship base and an enabling environment in the development of successful CoP's. The tight focus of the CoP (on the delivery of the FaME programme) was probably a factor which enabled it to build identity rapidly. This has been identified as a factor for success by Mabery et al and Li et al (19, 20). What started as a structured programme to deliver strength and balance exercise classes for older adults turned into a more cooperative learning and development network, which along with observation and quality improvement visits (21)may have led to improved fidelity to the original FaME intervention and therefore improved patient outcomes.

The role of CoPs as shared learning and continuous improvement settings has been demonstrated by several studies including (10, 19, 22). Activities such as frequent

interaction, facilitation through a trusted facilitator, a safe learning environment and diversity amongst members all of which apply to the CoP studied have been identified as key enablers to CoPs success (10).

In terms of the development of the CoP, its evolution from an initially management-led and facilitated setting to one with more peer-peer conversations and improved trust, meant that the CoP could focus on issues of interest to members leading to a sense of shared purpose, freedom to feedback and generate new ideas. Mabery et al 2013 found that this relationship base formed over time and the focus on an area of interest shared by all members led to the greatest impact on the effectiveness of a CoP.

Application

This CoP was deliberately established at the start but progressed organically into a forum for shared learning and improvements that maintain intervention quality. However, there is currently little evidence on the use of CoPs as a tool to deliver public health interventions to maintain quality, stimulate quality improvements and ensure fidelity to proven research interventions. This study demonstrates that benefit can be achieved both in terms of getting proven interventions into business as usual, and in improving them, thus closing the implementation gap. The CoP that we studied was reported to be a factor in the overall success of the implementation and outcomes of FaME as described elsewhere (Orton et al 2018). While we cannot attribute this success solely to the CoP, we can be confident that it played a part, not least in creating a positive, collaborative culture and emotional climate around the wider project (Clarke et al 2019) and embedding the programme with fidelity underpinned by quality improvement. It is hard to say whether the CoP's evolution into a more participant-driven way of working would have occurred naturally, but it is certainly a possibility.

Conclusion

This study provides evidence of the useful nature of CoPs as a public health management tool for the delivery of public health interventions (in the case of this study, a community falls management exercise (FaME) intervention for older adults). A CoP can be consciously created, and sustained for a period, drawing on participants from a range of organisations and roles to problem solve and potentially improve fidelity to original interventions and therefore patient outcomes. This a CoP may be an approach that can improve sustainability.

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