School of Healthcare
FACULTY OF MEDICINE AND HEALTH

UNIVERSITY OF LEEDS

Remote Osteoarthritis Peer Mentorship for Socioeconomically Underserved People (RaMIgO)

Final Project Report, July 2025

RaMIgO
Remote peer Mentorship In Osteoarthritis

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About the Nuffield Foundation:

The Nuffield Foundation is an independent charitable trust with a mission to advance social well-being. It funds research that informs social policy, primarily in Education, Welfare, and Justice. It also funds student programmes that provide opportunities for young people to develop skills in quantitative and scientific methods. Find out more at: www.nuffieldfoundation.org

About Versus Arthritis:

There are 20.3 million people living with arthritis and musculoskeletal (MSK) conditions in the UK. That's one in four people, with half of those living in pain every single day. The impact is huge as the condition intrudes on everyday life – affecting the ability to work, care for a family, to move free from pain and to live independently. Yet arthritis is often dismissed as an inevitable part of aging or shrugged off as 'just a bit of arthritis'. We don't think that this is ok.

Alongside volunteers, healthcare professionals, decision makers and researchers we do everything we can to push back against arthritis. Find out more at: www.versusarthritis.org

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The photographs in this report are from the Centre for Ageing Better age-positive image library.

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Glossary and abbreviations

Glossary

Activity pacing – a self-management strategy designed to manage energy and reduce fatigue or pain by balancing activity and rest to help achieve consistent activity levels.

Deductive – a data analysis process that involves developing codes and themes informed by a pre-existing theory or framework.

Inductive – a data analysis process that aims to develop codes and themes from the data rather than a pre-existing theory or framework.

Mechanism of impact – explanation of how the delivered intervention produces changes, including how participants interact with the intervention and how these interactions result in outcomes.

Mentee – a person with a health condition who is receiving mentorship support.

Peer mentor – a person with the same health condition as someone they are supporting. In this study, the peer mentor has hip or knee osteoarthritis.

Peer mentorship – support and guidance provided by a peer (someone with the same health condition as the person they are supporting).

Remote – attending the peer mentorship programme either via online videoconferencing (e.g. Zoom, Teams, WhatsApp) or via telephone, rather than in-person.

Peer mentorship programme – a set of topics, activities, and guidance about osteoarthritis that peer mentors use to support mentees.

Self-management – developing the knowledge, skills, and confidence to manage a long-term health condition (hip or knee osteoarthritis).

Socioeconomic disadvantage – missing out on opportunities that most other people can access due to finances (e.g. having a low income), education (e.g. having few or no qualifications), and/or social circumstances (e.g. being a carer).

Abbreviations

COM-B – Capability Opportunity Motivation model of behaviour

DBS – Disclosure and Barring Service

MSK – musculoskeletal

OA – osteoarthritis

PPI – Patient and Public Involvement

TDF – Theoretical Domains Framework

Executive summary

Background

As summarised in Figure 1, osteoarthritis (OA) is a common joint condition mainly affecting older people. Hip and knee OA may cause high levels of pain, social isolation and difficulty with daily activities. OA is more common in people experiencing socioeconomic disadvantage, and its impact is more severe in this group. Health inequalities in OA are exacerbated by socioeconomic factors such as poorer general health, reduced access to and uptake of health services, and digital exclusion. Alternative and better forms of support are needed to help people with OA who are experiencing socioeconomic disadvantage, a group often underserved by research.

Figure 1: Summary of the project background

Self-management helps people with OA to continue to live well. For example, lifestyle changes can reduce the day-to-day impact of the condition by reducing pain and improving function and mood. Our previous research developed and feasibility tested a programme that involved training volunteers with OA to become ‘peer mentors’ to provide self-management support to others with the condition. Limitations of this research were that the sample had limited diversity, and the programme was only delivered in person. Wider evidence suggests that the impact of self-management programmes may vary between different groups of people. A tailored peer support intervention that is delivered remotely (online or via telephone) could be valuable for people experiencing socioeconomic disadvantage who are often underserved by health research.

Aim and objectives

This project’s aim was to develop a remote peer mentorship programme for people with hip and knee OA who are experiencing socioeconomic disadvantage and explore if this programme is acceptable and useful.

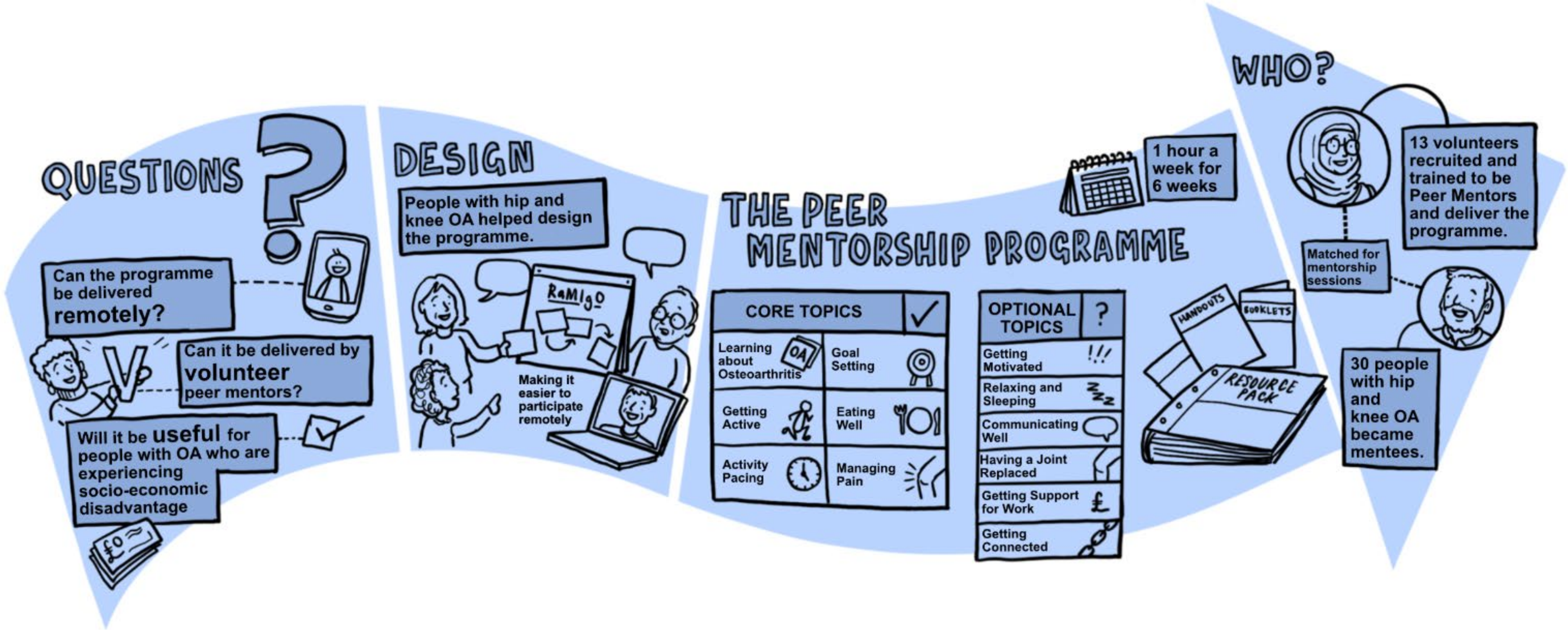
The specific objectives included:

1. To explore what may help or hinder engagement with a remote OA peer mentorship intervention among people experiencing socioeconomic disadvantage.
2. To develop a remote OA peer mentorship intervention with and for people with hip and knee OA who are experiencing socioeconomic disadvantage.
3. To estimate the costs of training volunteer peer mentors and delivering the remote OA peer mentorship intervention.
4. To investigate the delivery, acceptability, and perceived usefulness of a remote OA peer mentorship intervention for supporting self-management of hip and/or knee OA among people experiencing socioeconomic disadvantage.
5. To investigate what may help or hinder putting a remote OA peer mentorship intervention into practice in the real world.

Methods

Figure 2 summarises our project questions and overall methods. The three project phases are described in the text after the figure.

Figure 2: Summary of the project questions and methods



Phase 1: We conducted online group discussions (focus groups) and one-to-one interviews with twenty people with OA who were experiencing socioeconomic disadvantage to find out what factors could affect the success of our peer mentorship programme when delivered remotely. To develop and finalise the programme, we held two participatory workshops with fifteen stakeholders from diverse backgrounds to help make any changes to the peer mentorship programme. We held four practice runs with four Patient and Public Involvement (PPI) representatives to deliver practice mentorship sessions, which resulted in the mentorship programme being adapted further.

Phase 2: We recruited and trained volunteer peer mentors to deliver the six-week remote peer mentorship programme.

Phase 3: Our volunteer peer mentors delivered the remote peer mentorship programme to thirty participants living with hip or knee OA experiencing socioeconomic disadvantage. Each participant was matched with a peer mentor and invited to attend six remote peer mentorship sessions. We collected information about participants' health and wellbeing via questionnaires at the start of the programme. We interviewed participants immediately after they completed the programme at six weeks and again at six months. Interviews explored areas such as what the participants thought of the programme and whether it affected their health behaviours. We also interviewed the peer mentors to explore their experiences of receiving training, support and delivering the programme. Finally, we held two Stakeholder Discussion Forums with twelve key stakeholders, including healthcare professionals, public contributors and community representatives, to explore how the mentorship programme could be put into practice, including possible challenges and solutions to real-world delivery.

Key Findings

Our project adapted our previously developed in-person peer mentorship programme for remote delivery to people with hip or knee OA experiencing socioeconomic disadvantage. Our focus groups and interviews (Phase 1) identified barriers and enablers to delivering remote peer mentorship, including:

- Barriers and enablers to using self-management strategies such as insufficient knowledge about OA and self-management strategies (barrier) and personal motivations for self-management (enabler).
- Barriers and enablers to attending remote OA peer mentorship sessions such as low confidence in their ability to make videoconferencing calls (barrier) and having an empathetic peer mentor (enabler).

Based on the identified barriers and enablers, team members' suggestions, participatory workshop findings, and practice runs, we made a wide range of adaptations to the in-person peer mentorship programme. These included adaptations to the content and delivery format, including the peer mentor training (e.g. including peer mentors from the previous study as facilitators), mentorship sessions (e.g. offering to hold sessions via telephone or videoconferencing), and supporting resources (e.g. adding an exercise safety checklist to the mentee handouts).

In Phase 2 we successfully recruited fourteen volunteers with hip and knee OA and experiencing socioeconomic disadvantage to be trained as peer mentors. Thirteen volunteers went on to be matched with mentees and delivered the peer mentorship programme. Training was delivered remotely over two days and included a variety of presentations and interactive sessions designed to improve knowledge and skills about OA self-management and practicalities of peer mentorship.

Evaluation of the peer mentor training provided insights into perceived suitability and effectiveness of the training programme. Peer mentors reported being engaged and motivated to deliver the mentorship programme. They mostly found the content interesting and useful and particularly valued the activities led by previous peer mentors. They found remote delivery and long sessions tiring. Suggested improvements were to include practice mentoring sessions with previous peer mentors and to offer training in half day sessions. The approximate cost of training peer mentors was calculated as £3,833 overall, equivalent to £274 per peer mentor.

Recruitment of participants (mentees) for Phase 3 was challenging despite employing a wide recruitment strategy. Attendance and continued engagement of mentees was variable with just under two thirds of mentees (57%) completing either five or six sessions, and a third (40%) completing three session or fewer. Discussions with stakeholders suggest that poor attendance may be due to mentees forgetting to attend mentorship sessions, prioritising family or caring responsibilities and having technical difficulty connecting online. Poor engagement with mentorship sessions may be due to lack of peer mentor-mentee rapport and the peer mentor and mentees not prioritising OA self-management.

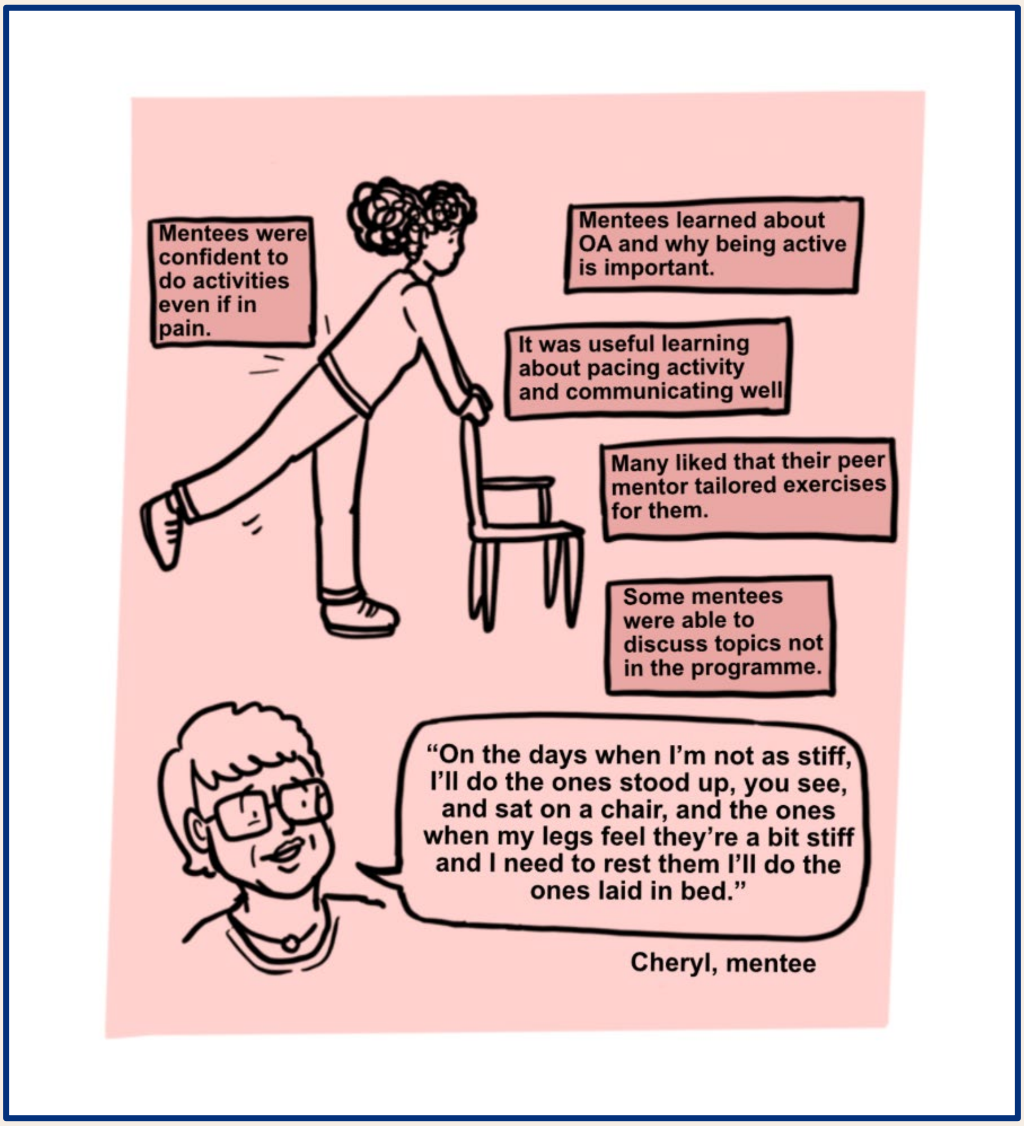
Many mentees, including those who did not complete all six mentorship sessions, engaged well with peer mentorship. They reported gaining OA knowledge and/or skills from the programme. Most mentees valued being able to share experiences about living with OA with their peer mentor. Overall, remote delivery of our peer mentorship programme was found to be feasible and acceptable. Some peer mentors and mentees preferred the convenience of connecting via phone or video, others felt that engagement may have been improved by in-person delivery. Peer mentor-mentee rapport had a positive impact on engagement and adoption of self-management strategies at least in the short term. Both mentees and mentors reported participation in the programme as enjoyable.

Self-management

Mentees reported learning about OA self-management through the peer mentorship programme. Most understood why it is important, and with their peer mentor's help, gained confidence to exercise and be active. Mentees found it particularly helpful to learn how to pace activity and liked that their peer mentor tailored the programme exercises for them so they could keep active on days when they felt more tired or in pain.

All core topics were covered in mentoring sessions, but interview data suggests that goal setting, an important self-management strategy was not always used well by mentees. For some mentees, additional topics not in the programme such as disability benefits, home adaptations, getting around safely, and planning and building confidence for socialising, were covered in sessions.

Figure 3: Key findings - self-management

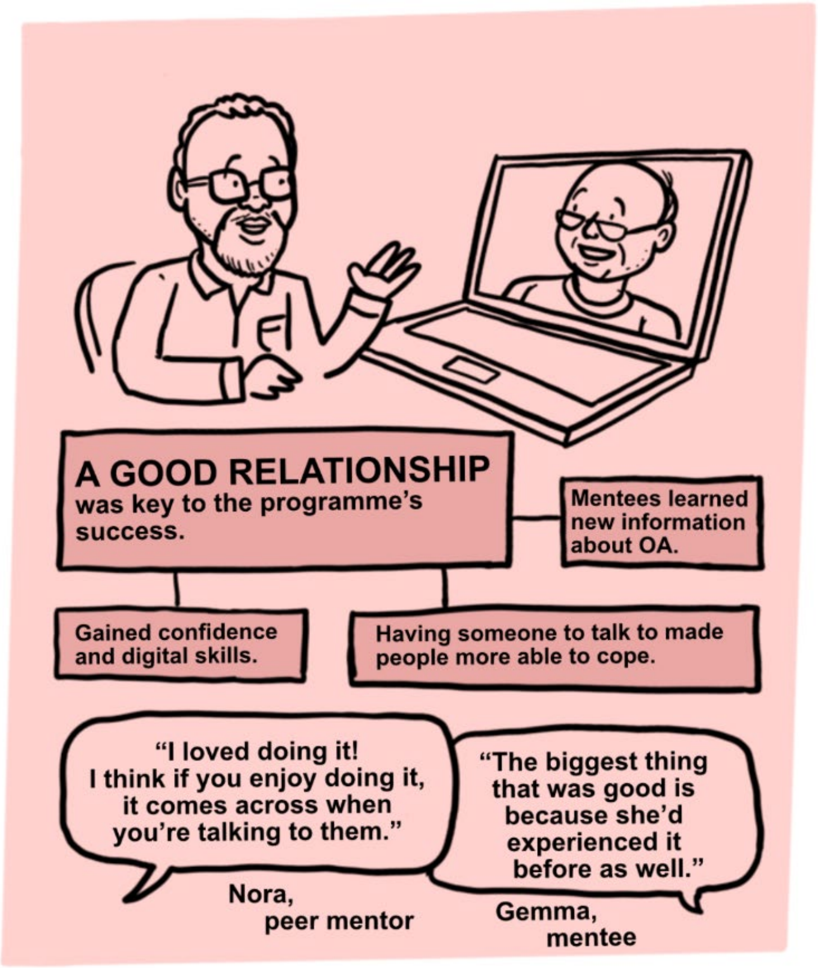


Relationship with peer mentor

When peer mentors and mentees developed a good relationship (rapport) they both benefitted more from the mentoring sessions. Mentees were more likely to follow the peer mentors’ guidance if they felt they had developed a good relationship. Peer mentors enjoyed talking with their mentees and felt a sense of satisfaction when their mentee made progress towards goals. They gained confidence and developed digital skills through supporting their mentees online.

Mentees valued having dedicated time to talk to someone with lived experience of OA in the context of socioeconomic disadvantage. For some mentees this was the first time they had talked with anyone about the impact of having OA and they appreciated someone taking an interest in them. This helped them feel understood and less overwhelmed by having OA.

Figure 4: Key findings - relationship with peer mentor

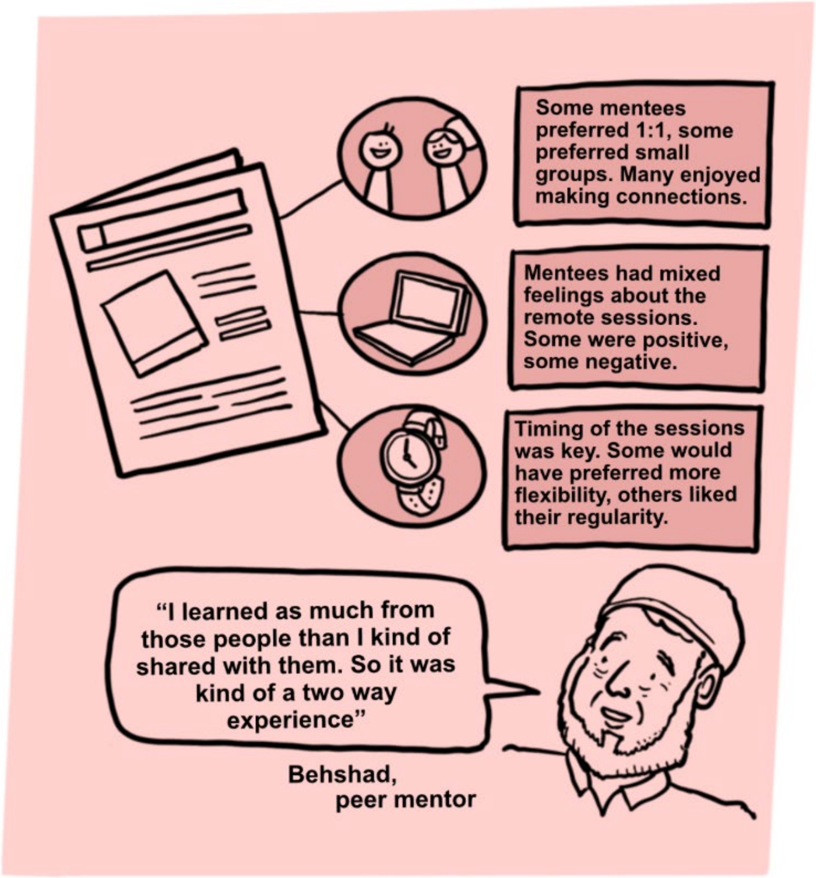


Programme format, delivery and training

Peer mentorship sessions were delivered either one-to-one or in a small group. Some mentees felt more comfortable sharing personal information and receiving one-to-one support. Other mentees reported benefitting from additional learning/coping strategies gained from other mentees in small group mentoring sessions.

Timing of sessions appropriately for mentees had an impact on their engagement with the programme. The regular weekly timing of sessions was difficult for some peer mentors and mentees, and they would have preferred a more flexible programme. Some people found it hard to prioritise their needs over others or had difficulty finding time to put self-management skills into practice. Other mentees felt that the peer mentorship came at just the right time for them. They looked forward to talking to their peer mentor at a regular time each week. This helped them to be motivated to make changes and practise self-management.

Figure 5: Key findings - programme format, delivery and training



The estimated cost of delivering the remote peer mentorship intervention was calculated as £7,533 overall, equivalent to £251 per participant on average. This figure does not include the training costs reported above, or translation, Wi-Fi replacement or care support cost as these were not required for our study participants.

Implications for policy and practice

People experiencing socioeconomic disadvantage are underserved by health services and research. There is potential for them to benefit most from self-management support. In this project, we developed a remote peer mentorship programme for, and with, people experiencing socioeconomic disadvantage to help them self-manage OA. We now have a specifically adapted programme and have gained valuable knowledge of how to put this programme into practice more widely. The following strategies could help optimise the success of the programme in the real world by addressing the importance of peer mentor-mentee rapport, supporting mentees to prioritise self-management, and ensuring peer mentors receive suitable support.

1. Using pre-meeting calls or introductory video clips of mentors and mentees to enable them to become familiar with each other prior to commencing the formal mentorship sessions.
2. Considering matching based on personal characteristics, rather than simply OA.
3. Consider re-matching of the mentee if rapport is not easily achieved.
4. Offering a buddy system which might be more appealing than mentoring, as it allows for a more equal power dynamic with buddies providing mutual support rather than one where the peer mentor provides structured guidance.
5. Offering a mentorship programme with a flexible structure and timing to suit the mentee, with the opportunity to return to the programme.
6. Delivering the mentorship support alongside other health services to improve attendance.
7. Offering rolling training for peer mentors to refresh their knowledge and develop their skills.
8. Engaging a large pool of peer mentors to enable re-matching of mentees and trained mentors to take breaks from programme delivery.
9. Providing regular feedback to peer mentors on the impact of their mentoring support to improve confidence and help develop their skills.

This study has highlighted that the remote OA peer mentorship programme has the potential to benefit people with hip and knee OA who are experiencing socioeconomic disadvantage. Given that tackling MSK health inequalities is currently a national priority, a potentially valuable next step would be to work in partnership with a third sector organisation to implement the peer mentorship programme in the real world. Future research of the peer mentorship programme could potentially be undertaken alongside the real-world implementation.

Background and aim

Osteoarthritis and socioeconomic disadvantage

Osteoarthritis (OA) is a musculoskeletal (MSK) condition affecting approximately 10 million people in the United Kingdom (UK) alone (1). The hip and knee are the most commonly affected sites (1, 2). Individuals with hip or knee OA may experience high levels of pain, reduced physical function, poor health-related quality of life, anxiety, depression, and social isolation (3-7). OA can generate high costs for the individuals affected, employers, healthcare services, and wider society (1).

Socioeconomic disadvantage is a complex concept typically used in relation to people ‘living in less favourable social and economic circumstances than the majority of others in the same society’ (8, 9). A wide range of indicators are associated with socioeconomic disadvantage, such as having a low income, living in a deprived area, being homeless, having low educational attainment, and being a carer (8, 9). Rates of hip and knee OA are higher, and the impact is greater among people experiencing socioeconomic disadvantage (10, 11). Health-related quality of life reduces in tandem with increasing socioeconomic disadvantage (10).

Osteoarthritis management

Managing OA is challenging for health professionals and patients. The National Institute for Health and Care Excellence (NICE) OA guideline recommends information and support, therapeutic exercise, and weight management if appropriate (12). People often need guided support to manage OA. With pressures on the NHS, health professionals cannot always provide the required timely support.

People experiencing socioeconomic disadvantage can find it challenging to access healthcare services due to factors such as conflicting time demands, transportation difficulties, forgetting appointments, and feeling socially distant from health professionals (13, 14). Correspondingly, people living in neighbourhoods with higher levels of deprivation experience health inequalities, with many interventions/services causing or exacerbating health disparities (15, 16).

Research suggests that intentions and/or self-efficacy are less predictive of engaging in health-behaviours among people with lower socioeconomic status, highlighting their need for additional support (17, 18). This aligns with OA research findings, which has demonstrated that engagement with self-management interventions is lower among people experiencing socioeconomic disadvantage and interventions for OA may need to be targeted specifically for this group (10, 19, 20).

Peer mentorship support

In 2023, the UK Arthritis and Musculoskeletal Alliance (ARMA) carried out an inquiry into tackling MSK health inequalities (8). Recommendations from the inquiry include providing tailored intensive self-management support to people in greatest need. The suggested support options include peer support – a process in which someone with a particular health condition supports someone else with the same condition (21, 22).

Qualitative research suggests peer support interventions for long-term condition self-management may offer benefits for those giving and receiving support (23). Correspondingly, a systematic review and meta-analysis focused on adults with chronic MSK pain found peer support interventions may lead to small improvements in pain, self-efficacy and function compared to usual care (22). However, definitive conclusions could not be drawn as the evidence certainty was low to very low. Few included studies investigated one-to-one peer support or interventions delivered via telephone or online. The authors highlighted further research in these areas is warranted given the established benefits of individualising support and the potential scalability and accessibility of remote delivery formats.

Remote intervention delivery

The COVID-19 pandemic accelerated transformation of many healthcare services to remote delivery modes, such as telephone and videoconferencing consultations. Remote delivery of healthcare services may offer benefits, such as providing more personalised and convenient care (24). However, people experiencing socioeconomic disadvantage may experience difficulties accessing remote services due to factors such as lack of access to digital devices and low motivation to engage with digital services (24). Furthermore, as people with OA are typically older, they are more likely to be digitally excluded. For example, Age UK recently reported around one in three people aged 75 or older do not use or only rarely use the Internet (25). Digital literacy is overlooked when developing digital health interventions targeted towards groups experiencing socioeconomic disadvantage (26). It is important that remote health interventions do not reinforce existing health inequalities (24).

Our previous research

Our project team previously developed and feasibility tested an in-person peer mentorship intervention to support OA self-management (27). Our research suggested the intervention was acceptable and feasible, providing a promising approach for supporting people with hip and knee OA to manage their condition more effectively (27, 28). Additionally, the peer mentors appeared to benefit from their role (28). A key limitation of our previous research was that the sample had limited diversity (27).

Our previous research and consultations with PPI contributors indicate that peer support needs to be more inclusive and reach more diverse populations. Furthermore, wider research has suggested that peer support interventions may be more effective among people who are underserved, including people experiencing socioeconomic disadvantage (29). We therefore decided to build upon our in-person OA peer mentorship intervention to develop and evaluate a remote peer mentorship intervention with and for people with hip and knee OA who are experiencing socioeconomic disadvantage.

Aim and objectives

Our overall aim was to develop and assess the feasibility and perceived usefulness of a remote peer mentorship intervention for people with hip and knee OA who are experiencing socioeconomic disadvantage. Our specific objectives were:

1. To explore what may help or hinder engagement with a remote OA peer mentorship intervention among people experiencing socioeconomic disadvantage.
2. To develop a remote OA peer mentorship intervention with and for people with hip and knee OA who are experiencing socioeconomic disadvantage.
3. To estimate the costs of training volunteer peer mentors and delivering the remote OA peer mentorship intervention.
4. To investigate the delivery, acceptability, and perceived usefulness of a remote OA peer mentorship intervention for supporting self-management of hip and/or knee OA among people experiencing socioeconomic disadvantage.
5. To investigate what may help or hinder putting a remote OA peer mentorship intervention into practice in the real world.

Project overview

Project design

We conducted a pragmatic mixed-methods feasibility study (30) comprised of three phases. Phase 1 (intervention development) was a multi-method study designed to adapt our previously developed OA intervention for remote delivery to people experiencing socioeconomic disadvantage.

Phase 1a used qualitative methods to address issues and uncertainties about remote OA peer mentorship. Phase 1b involved participatory workshops and PPI activities to develop and finalise the remote peer mentorship intervention. Phase 2 (intervention set-up) involved recruiting volunteer peer mentors and training them to deliver the intervention.

Phase 3 (intervention evaluation) was a mixed-methods process evaluation (31) which involved trained peer mentors delivering the intervention to people with OA, and investigating the acceptability, appropriateness and feasibility, fidelity and of the intervention. Wider implementation was explored through Stakeholder Discussion Forums.

Figure 6 illustrates the overall study design and flow through each phase.

Figure 6: Project flow chart

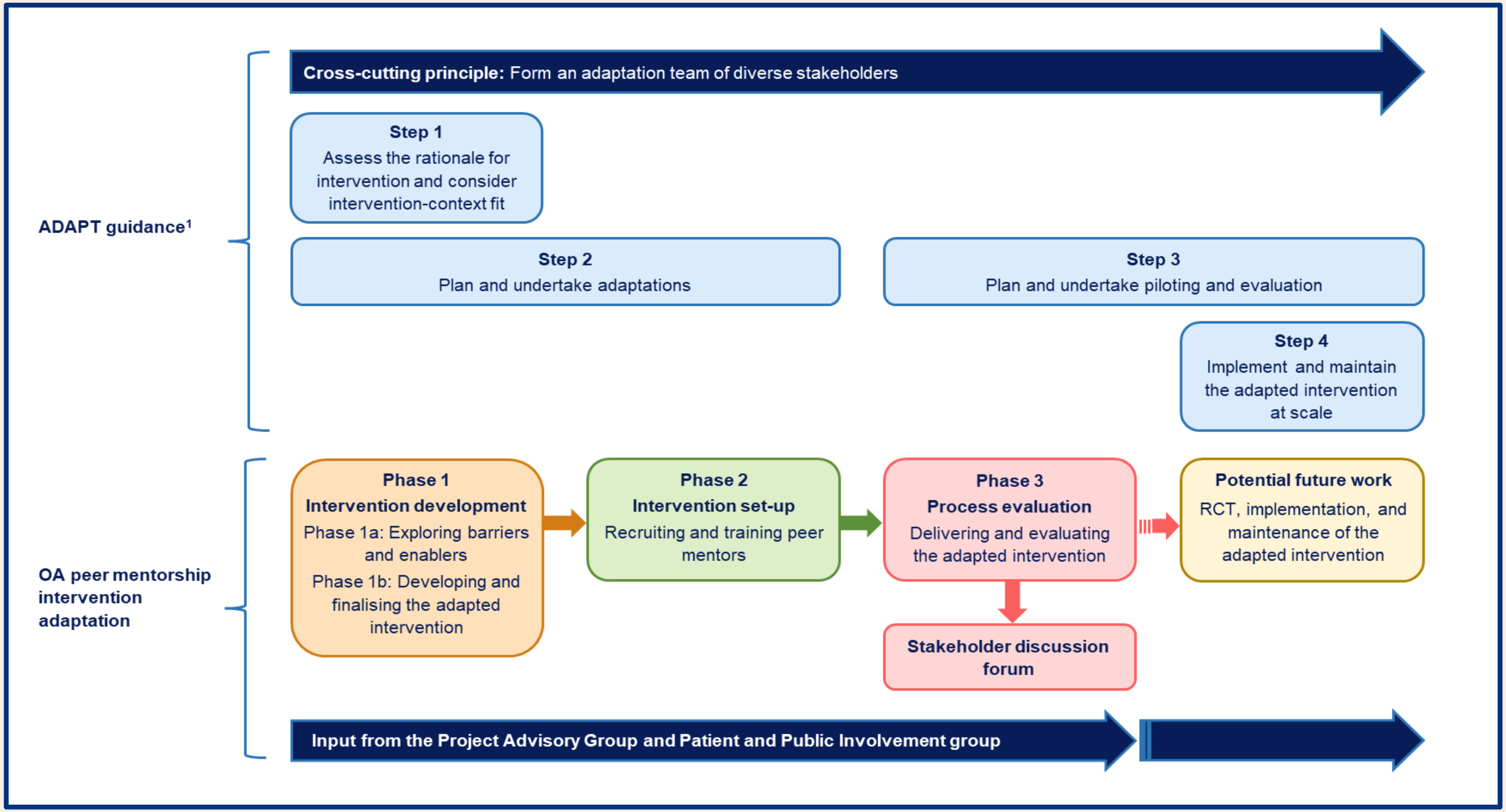


Figure adapted from Figure 1 in Anderson et al. (32) under the terms of the Creative Commons Attribution License (https://creativecommons.org/licenses/by/4.0/). [1]The cross-cutting principle and steps are quoted from the ADAPT guidance (33).

OA, osteoarthritis; RCT, randomised controlled trial.

Ethics Approval

Ethical approval for this study was gained from the South Birmingham Research Ethics Committee (23/WM/0108). All participants provided informed consent prior to participating. The project was performed in accordance with all relevant guidelines and regulations, including the Declaration of Helsinki.

Study dates

This was a 30-month study running from February 2023 to July 2025. The dates of the study phases and recruitment periods are provided below.

Intervention development (Phase 1): June 2023 – November 2023
    Recruitment of Phase 1 participants: June 2023 – August 2023
    Focus groups and interviews: July 2023 – September 2023
Intervention set-up (Phase 2): August 2023 – March 2024
    Recruitment of peer mentors: August 2023 – January 2024
    Training of peer mentors: January 2024 – February 2024
Intervention evaluation (Phase 3): March 2024 – February 2025
    Recruitment of Phase 3 participants: July 2023 – April 2024
    Mentorship support sessions: March 2024 – August 2024

Mentee interviews were conducted concurrently with mentorship support sessions and ran from April to December 2024. Peer mentor interviews commenced on completion of their mentoring.

Data analysis, reporting and dissemination were conducted over fourteen months from May 2024 to July 2025. Further dissemination activities are planned for November 2025.

Ensuring digital inclusion

To address any barriers to participation in this project due to digital capabilities and remote access, we developed a working partnership with local organisations who offered free digital skills training. The research team also provided one-to-one support where required. Participants and peer mentors were offered a digital tablet with internet connectivity to facilitate access and ensure that no connection costs were incurred. Ongoing digital support and training was offered by members of the study team and through a PPI digital champion. Each project phase included other routes to participation (e.g. phone or support to connect online) to optimise inclusion of participants who were not digitally confident.

Patient and Public Involvement

Patient and Public involvement (PPI) was embedded throughout all phases of this study. We engaged a diverse group of public contributors to ensure that the developed peer mentorship intervention is useful, acceptable and accessible to the people who it aims to benefit (people with hip/knee OA who are experiencing socioeconomic disadvantage).

A total of eleven PPI members, all with hip and/or knee OA and direct or indirect experience of socioeconomic disadvantage, were involved in the study. We have two PPI co-applicants who are part of the study team and lead the PPI Group; three PPI members who form part of the Project Advisory Group; and six PPI members forming the wider study PPI Group. Our PPI members attended regular study meetings and contributed to development of study materials, adaptation and development of the intervention, participant recruitment, peer mentor training and supporting peer mentors to deliver the intervention. Our PPI co-applicants assisted with developing public outputs and dissemination, including co-presenting at a conference.

Specifically, our PPI members have influenced:

- how we have communicated with the public about the study
- how we have engaged and recruited mentees
- how we adapted the intervention for remote delivery
- training and networking with peer mentors
- supporting peer mentors to deliver the intervention

Our PPI co-applicants reflected on their experience of being involved in the study. They felt that their own input as well as that of other PPI members was valued by the study team.

> “Most of the online sessions that I joined re: the PPI went well and were successful and I felt actively engaged and involved, with my comments and feedback being actively considered and taken on board.” **PPI Co-applicant**

Involvement of PPI members has had positive impact throughout this study, as well as on individual PPI members. Two examples are given below.

Example 1

Four PPI members were involved in a previous study and have peer mentorship experience. They attended peer mentor training and led ‘Question and Answer’ and ‘Role Play’ sessions. These sessions enabled trainee peer mentors to learn first-hand about the experience of being a peer mentor and to understand potential challenges with mentees and how to overcome them.

Involvement of PPI in training provided a uniquely informative experience for our trainee peer mentors. These sessions were positively evaluated by PPI and peer mentors.

Summary of PPI impact: enjoyable engagement opportunity, building confidence with and experience of remote training, improved engagement with the study team

Summary of study impact: interactive activity enhanced training sessions and improved engagement of peer mentors, made the role become ‘real’, trainee peer mentors gained confidence to carry out the role.

Example 2

Two PPI members supported peer mentors to deliver the mentorship programme by providing advice on structuring sessions and co-delivering a few mentorship sessions to help peer mentors gain confidence with their mentees.

Summary of PPI impact: meaningful and enjoyable involvement with intervention delivery, sharing of OA self-management strategies with peer mentors and mentees

Summary of study impact: increased confidence of peer mentors, improved delivery of mentorship support, continued engagement of peer mentors and mentees

“I personally found the whole PPI experience very positive with participants being very engaged at each meeting. The main thing that stands out for me is the generous sharing of information regarding all aspects of the condition, this coming of course from people with lived experience. This information could then be passed on to mentors and mentees to aid the mentoring sessions with more self-management advice and guidance.” **PPI Co-applicant**

Intervention development

Phase 1 methods and findings

How we adapted the intervention

Our starting point for this study was to adapt our previously developed and feasibility tested in-person OA peer mentorship intervention for remote delivery to a diverse and underserved population, namely, people experiencing socioeconomic disadvantage. This chapter has been adapted from our published report of the intervention development (32) under the terms of the Creative Commons Attribution License.

Phase 1a

To explore barriers and enablers to engagement with the intervention (objective 1) we conducted focus groups and interviews with people with hip and knee OA who self-identified as experiencing socioeconomic disadvantage.

The theoretical basis for the adaptation process was the Theoretical Domains Framework (TDF) (34, 35). The topic guide for the focus groups/interviews was developed using the TDF and addressed two broad target behaviours:

1. Using self-management strategies
2. Attending remote OA peer mentorship sessions

Appendix 2 provides the topic guide prompt questions.

Two focus groups were held online, and one was conducted in-person. To promote inclusion, online focus group participants were offered training and the opportunity to join a practice online meeting. Focus groups were facilitated by members of the research team who encouraged discussions between participants.

To further promote inclusion, participants were offered the opportunity to participate in a one-to-one interview rather than attending a focus group. Four interviews were held via telephone, and one interview was held online with a family member present as a Patwari interpreter. Prior to the focus group/interview, participants completed a brief sociodemographic and clinical characteristics questionnaire administered via telephone by a researcher. The focus groups/interviews were recorded and professionally transcribed.

These focus group/interview findings were used by the project team to inform initial adaptations to the OA peer mentorship intervention and to develop a discussion framework for Phase1b.

Phase 1b

Phase 1b involved further adapting and finalising the intervention. To address objective 2, we held two online participatory workshops with key stakeholders. Participants were provided with a briefing document prior to the workshop and guided through the workshop activities by the members of the research team.

The final stage of intervention development was to carry out practice runs to test remote delivery of the intervention. Members of our PPI Group, with and without peer mentorship experience, conducted practice remote mentorship sessions using draft resources. They provided structured feedback about their experiences of the practice session which led to minor revisions of the resources and delivery format.

Following the workshops, around two thirds of attendees completed an online evaluation form. The workshops were positively evaluated as being interesting, informative and well-organised. Attendees appreciated being briefed beforehand and felt encouraged to contribute and raise any concerns about the proposed intervention.

Who was involved?

Phase 1a: Focus groups and interviews

We adopted a wide recruitment strategy for Phase 1 to facilitate recruitment of diverse participants. This included targeting neighbourhoods with high socioeconomic deprivation (20% most deprived) using the English Index of Multiple Deprivation (IMD) (36). Recruitment activity took place between June and August 2023. Advertisements were shared via General Practices, social media, community organisations, PPI representatives, additional networks, and Egality Health – a community engagement agency dedicated to reducing health inequalities by improving inclusion in research.

Adults were eligible if they:

- Had been diagnosed with hip/knee OA by a health professional and,

- Considered themselves to be experiencing socioeconomic disadvantage assessed by the question ‘Do you consider yourself to be experiencing socioeconomic disadvantage?’

To promote understanding of recruitment advertisements, wording was simplified to: ‘feel that you are disadvantaged because of your finances, education or social circumstances’ rather than referring to socioeconomic disadvantage. The wording of recruitment materials was revised slightly following consultations with PPI members who also advised on recruitment routes.

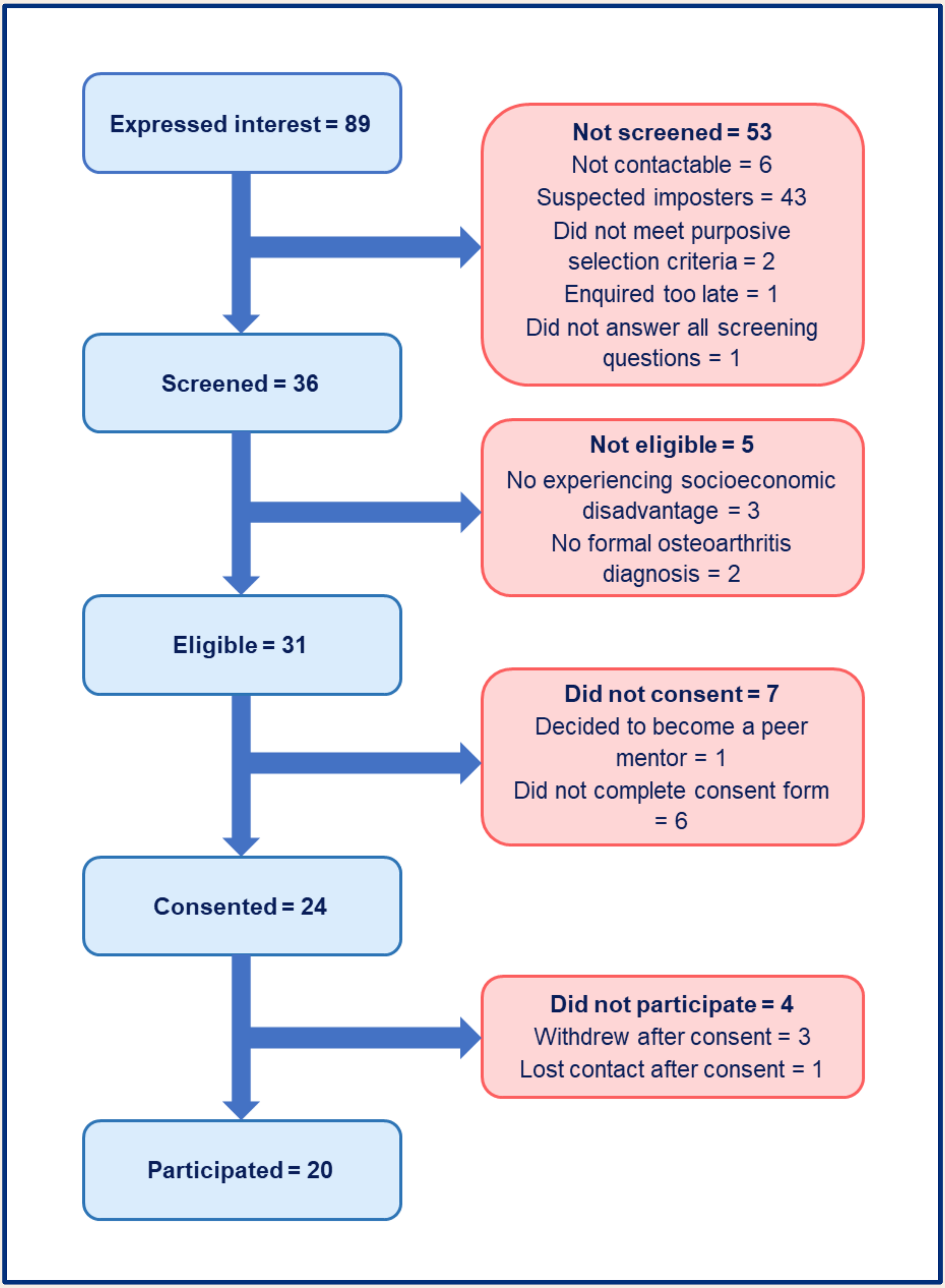
Interested people were asked to contact the study team via phone or email. They were screened for eligibility by a researcher before being sent further information about participating and consent.

Eighty-nine people expressed an interest in participating. Thirty-one were eligible and twenty-four consented. Twenty people participated in Phase 1a between July and September 2023. There were five participants in each focus group. A further five people took part in one-to-one interviews.

Figure 7 shows the number of people who expressed interest and reasons for inclusion or exclusion. Appendix 3 provides the participant characteristics.

Note on Figure 7: During Phase 1 recruitment, we received a number of enquiries that we believed to be false expressions of interest from ‘suspected imposters’. Our suspicions were aroused by seemingly spurious email addresses, volume and timing of when emails were sent and the language used in initial emails. Follow-up by the research team and invitation to second screening often confirmed that the motivation to participate in the project was financial gain and the potential participants did not genuinely meet eligibility criteria. Enquiries from any suspected imposters were rejected and deemed ineligible. Further information about this experience can be found in Anderson et al. (32).

Figure 7: Phase 1 participant recruitment



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Phase 1b: Participatory workshops and practice mentorship sessions

To capture diverse perspectives about the suitability of the intervention, we again adopted a wide recruitment strategy for the workshops by sharing study advertisements and information via community organisations, a university public engagement group, and a previous community engagement project. Community organisations and study PPI members were approached directly.

Workshop attendees were:

- Five people with hip/knee OA experiencing socioeconomic disadvantage
- Four community organisation representatives working with people with hip/knee OA experiencing socioeconomic disadvantage.
- Six PPI representatives, two of whom were peer mentors in the previous study.

Four members of the wider PPI group each took part in two practice runs of delivering peer mentorship sessions. The PPI members provided feedback by completing a form with questions focusing on the delivery and accessibility of the resources, connecting and communicating online, content of the resource pack and handouts, working through the ‘Getting active, staying active’ topic and other general feedback.

Data analysis

Four researchers from the study team used reflexive approaches, such as recording and discussing reflections on the data collection and/or analysis process, to analyse the focus group and interview data using reflexive thematic analysis (37, 38).

The transcripts were initially coded inductively to identify barriers and enablers to the target behaviours. The barriers and enablers were grouped into two deductively developed themes, each addressing one of the target behaviours.

A behaviour change model, the Capability Opportunity Motivation model of behaviour (COM-B) (39, 40), was used alongside the TDF to structure the findings relating to target behaviours. This helped with classifying the data into subthemes and provided a transparent way of mapping the barriers and enablers to the COM-B components, TDF domains, and original intervention features or adaptations. The behavioural analysis tables were discussed and refined by the project team and feedback on the analysis process and findings was provided by the Project Advisory Group. The full behavioural analysis tables showing the adaption process are reported in Anderson et al. (32).

Barriers and enablers to using self-management strategies

Table 1 shows the barriers and enablers to using self-management strategies identified from Phase 1a. These spanned eight TDF domains. Many of these barriers had been identified in the previous study and were already included in the original in-person peer mentorship programme, so adaptations were not required to address them. However, a few adaptations were made to wording and re-organising topics, as reported below.

Table 1: Barriers and enablers to using self-management strategies

TDF domain	Barrier	Enabler
Knowledge	Insufficient knowledge about OA and self-management strategies	Having knowledge about OA and self-management strategies
Skills	Difficulty finding or understanding relevant self-management information online	Being able to find relevant self-management information online
Environment, context and resources	Lack of infrastructure e.g. transport	Having access to sports/health facilities
		Use of aids or resources (including cushioned trainers) to self-manage
Social influences	Limitations with support from friends, family, and groups	Having appropriate support from friends, family, and groups
	Inadequate support from health and care professionals	Having adequate support from health and care professionals
Beliefs about capabilities	Mobility/physical limitations due to OA	
	Mobility/physical limitations due to other health conditions	
Beliefs about consequences	Believing physical activity/exercise will cause pain	Believing physical activity/exercise is beneficial
	Believing that pain management medications are ineffective	
Intentions	Feelings of helplessness, depression, or anxiety leading to demotivation	Personal motivations for self-management
Emotions	Fear of going out	

OA, osteoarthritis; TDF, Theoretical Domains Framework (34, 35).

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Barriers and enablers to attending remote OA peer mentorship sessions

Table 2 provides the identified barriers to attending remote peer mentorship sessions. These spanned seven TDF domains. Most of these barriers and enablers required adaptations to the previously developed intervention.

Table 2: Barriers and enablers to attending remote osteoarthritis peer mentorship sessions

TDF domain	Barrier	Enabler
Knowledge	Not knowing what peer mentorship is	Knowing what peer mentorship is
Skills		Experience of making video calls with a specific videoconferencing platform
Environment, context and resources	Lack of access to a digital device and adequate internet connection	
	Difficulty engaging at specific times of day	
	Lack of time to engage in peer mentorship	
Social influences		Female peer mentor or all-female group
		Peer mentor who speaks the same language or an interpreter present
		Peer mentor with lived experience of OA
		Empathetic peer mentor
Beliefs about capabilities	Low confidence in ability to make videoconferencing calls	
Beliefs about consequences	Concerns about peer mentorship	Believing peer mentorship would be beneficial
	Concerns about a remote format	Believing a remote format would be appropriate or advantageous
	Believing a group format would be advantageous	Believing a one-to-one format would be advantageous
Emotions	Feeling fed up with or stressed by videoconferencing calls	

OA, osteoarthritis; TDF, Theoretical Domains Framework (34, 35).

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Intervention adaptations

The adaptations made to address the barriers to self-management included:

- Adapting the wording and formatting of the resource pack and mentee handouts to improve readability, clarity, and accessibility
- Adding extra links to national support organisations to the ‘Getting connected’ topic in the participant handouts
- Changing ‘Getting connected’ from a core topic to an optional topic
- Changing ‘Managing pain’ to a core topic, with guidance about non-medical forms of pain management and guidance/signposting related to medications

Multiple adaptations were made to address barriers to attending remote peer mentorship sessions, including clarifying the concept of peer mentorship in recruitment materials to encourage initial engagement with the programme.

Many adaptions aimed to offer a more flexible intervention format and support digital engagement. These included offering:

- Flexibility with the choice of videoconferencing platform
- The option to hold mentorship sessions via telephone or videoconferencing
- Reassurance about the remote format and digital coaching/support
- A loan digital device and Wi-Fi support funds
- The option of having a peer mentor who speaks the same language or an interpreter present
- The option of having mentorship in small groups (rather than one-to-one only) if feasible

Participants having lack of time to engage in peer mentorship was highlighted as a significant barrier which could not be addressed directly through adapting the intervention.

In addition to the above adaptations made based on the Phase 1a focus group and intervention findings, numerous adaptations were made based on our project team members' suggestions and participatory workshops. Feedback from the mentorship delivery practice runs also led to a few minor additional adaptations.

Practical recommendations made by workshop attendees and PPI members were to provide mentees with printed and electronic copies of the mentee handouts before their first support session; include a safety checklist for the Getting active, staying active’ topic; offer culturally adapted versions of the ‘Eatwell guide’ in the mentee handouts; and include an Activity Tracker and series of Versus

Arthritis booklets as additions to the mentee resources. Full details of all the adaptations made are available in Anderson et al. (32).

At the end of Phase 1 we had a robustly developed OA peer mentorship intervention suitable for remote delivery to people experiencing socioeconomic disadvantage. Our multi-method approach with diverse stakeholders, including study PPI members, ensured that key characteristics of the target group such as ethnicity and digital capability were represented throughout intervention development.

Intervention set-up

Phase 2 methods and learning

Overview

In Phase 2 of the study, we recruited people with hip and knee OA and experience of socioeconomic disadvantage to become study peer mentors. These volunteers were provided with the resource pack and handouts developed in Phase 1 and trained to deliver the remote peer mentorship programme.

To address any barriers to digital inclusion, peer mentors were invited to borrow a digital tablet, offered Wi-fi reimbursement costs and/or provided with a pre-paid data sim. They were offered support and additional training to deliver online peer mentorship online using videoconferencing platforms (e.g. Teams, Zoom or WhatsApp). They were also given the option to deliver the programme via telephone.

Peer mentors were asked to undergo a Disclosure and Barring Service (DBS) check prior to being matched with a mentee. They were offered £20.00 thank you payment for each one-to-one peer mentorship session, and £35.00 for each group session delivered.

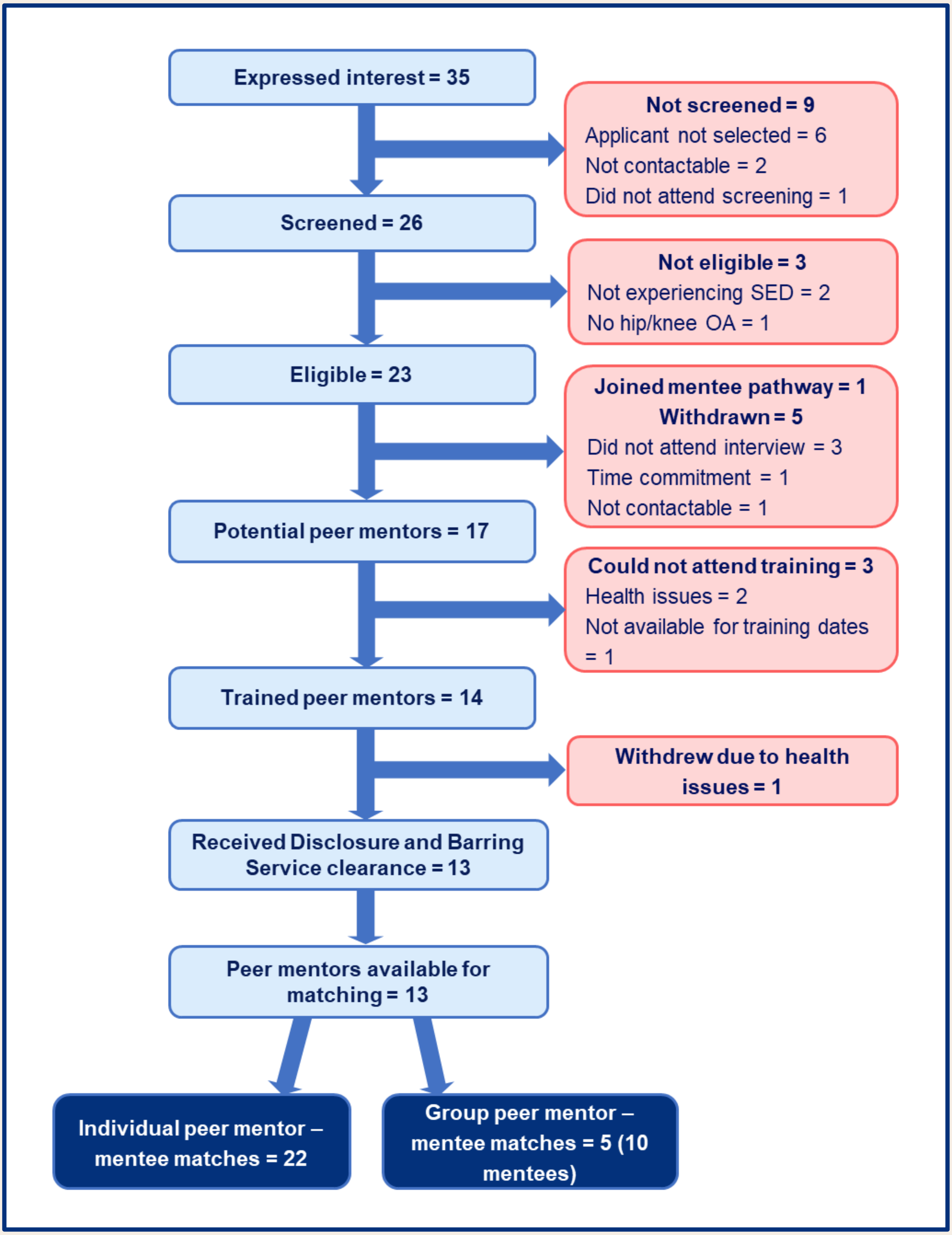
Recruitment and screening

Peer mentors were recruited via posters, news articles, social media advertising and word of mouth. Information about the role was shared through the UK's National Innovation Centre for Ageing-VOICE, Arthritis Action, The Elders Council of Newcastle, community organisations, PPI members, other study stakeholders, and in-person community engagement activities.

Interested volunteers were screened for eligibility via phone and provided with the peer mentor role description. Informal interviews were arranged with prospective peer mentors and were conducted online with at least one member of the study team. Interviews focused on the applicant's suitability for the role, as well as ensuring that they were clear about the purpose of the role and expectations to deliver the programme. Suitable applicants were invited to attend the two-day training course.

Recruitment activities took place between August 2023 and January 2024 and resulted in thirty-five people expressing interest in the peer mentor role. Of these, twenty-six people were screened and nine people declined or did not attend screening. Three people were ineligible either because they did not consider themselves to be experiencing socioeconomic disadvantage or did not have hip/knee OA. Of the seventeen eligible volunteers, three people withdrew prior to training. Fourteen volunteers attended the peer mentor training and thirteen were matched, as shown in Figure 8. Table 3 shows demographic information for all fourteen of the recruited volunteer peer mentors.

Figure 8: Recruitment, training and matching of peer mentors



OA, osteoarthritis, SED, socioeconomic disadvantage

Table 3: Peer mentor demographics

Peer mentor (Study ID)	Age	Gender	Ethnicity	Site of OA (hip / knee)	Length of time with OA	Digital capability	Support requirements
PM_001	72	Female	White British	Both knees	< 30 years	Not at all	Training to use Teams
PM_005	59	Female	White - other	Both knees and hip	5-10 years	Very experienced	Tablet loan and data sim required
PM_006	67	Male	White British	Both hips	10-15 years	Quite experienced	Mentoring skills support
PM_010	52	Female	White British	Knees	10-15 years	Experienced	None requested
PM_015	50	Female	White British	Both hips	10-15 years	Very experienced	None requested
PM_019	65	Female	White British	Both hips and knee	< 5 years	Quite experienced	None requested
PM_027	55	Male	White British	Both hips	15-20 years	Very experienced	None requested
PM_022	56	Male	White British	Hip	< 5 years	Quite experienced	None requested
PM_003	53	Male	British Pakistani	Knee	< 30 years	Very experienced	None requested
PM_018	58	Female	White British	Both knees	5 -10 years	Very experienced	Hard of hearing needs headset
PM_016	70	Female	White British	Both knees and hip	10-15 years	Experienced	None requested
PM_021	60	Female	Black Caribbean	Both knees	< 5 years	Very experienced	Hard of hearing needs headset
PM_028	32	Female	White British	Both knees	< 5 years	Very experienced	None requested
PM_034	72	Female	White British	Both hips	15-20 years	Quite experienced	Tablet loan and training to use

OA, osteoarthritis

Peer mentor training

All recruited volunteers attended a remotely delivered two-day peer mentor training course held in January or February 2024. Volunteers were allocated to one of two small groups for the training. The course was developed by the study team and incorporated adaptions following feedback from Phase 1. Peer mentor training was delivered by study team members, a physiotherapist specialising in activity pacing and pain management, and PPI Group members who were peer mentors in the previous feasibility study.

The training was designed to enable peer mentors to build knowledge about self-managing OA and develop self-management and mentoring skills. The course covered topics related to OA, the self-management programme and peer mentoring; and consisted of educational components, knowledge sharing, development of skills and familiarisation with the peer mentorship programme. Examples are provided in Table 4. To improve engagement with the remote delivery, the training programme was divided into short sections interspersed with regular breaks and involved a range of presentations and interactive activities, including quizzes, discussion scenarios, practising exercise and role play practice sessions with experienced peer mentors.

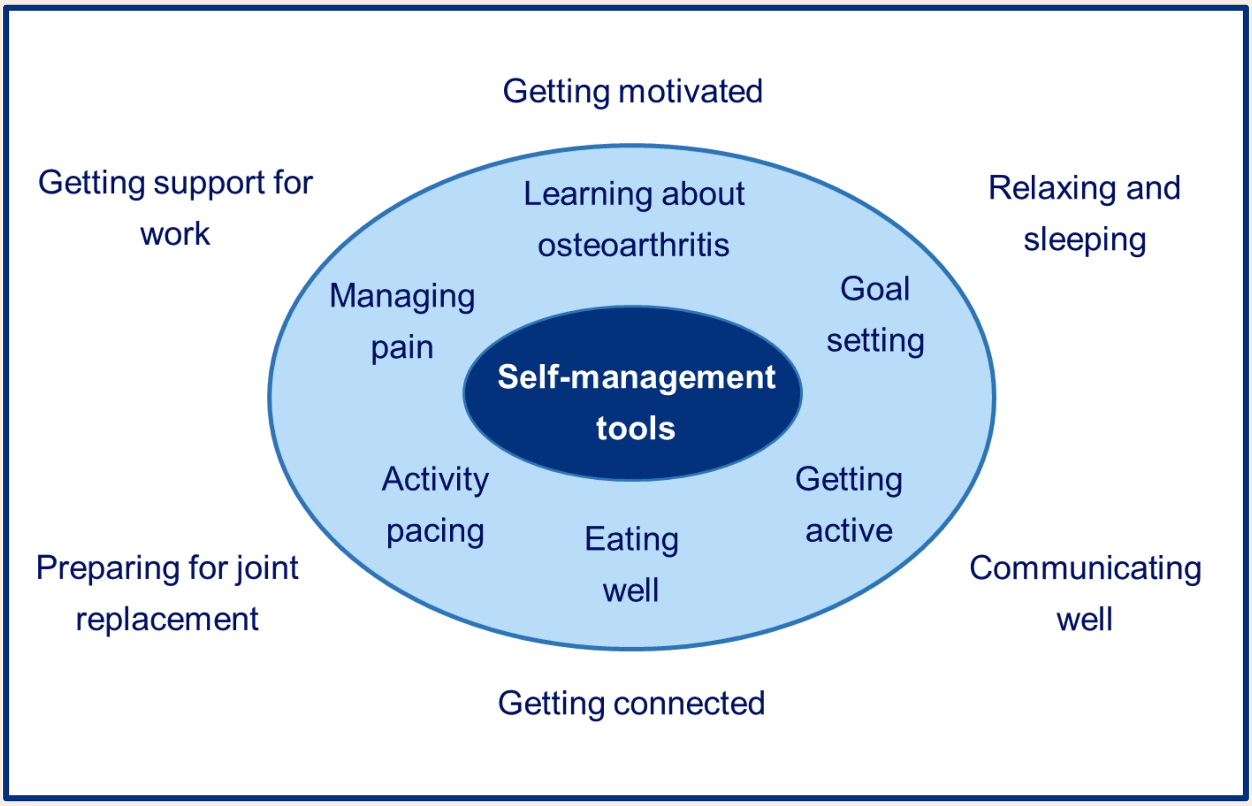
Table 4: Peer mentor training summary

Module	Topic	Content	Format
Knowledge sharing (OA)	Exploring OA	OA key facts Knowledge sharing activity	Presentation Quiz and group discussion
Knowledge sharing (OA self-management)	Exploring programme resources	Self-management (core topics/optional topics)	Group discussion
Developing skills (OA self-management)	Activity pacing	Understanding pacing, why it is important and how to achieve it	Presentation Group discussion
Knowledge sharing (peer mentoring)	Being a peer mentor in practice	Ask the peer mentor	Question and answer
Developing skills (peer mentoring)	Understanding goal setting	Goal setting scenarios	Small group activity
Developing skills (peer mentoring)	Effective communication	Communication styles and developing communication skills	Presentation

OA, osteoarthritis

Peer mentors were provided with printed and electronic versions of the peer mentor resource pack and participant handouts prior to training. The peer mentor resource pack included information and guidance on self-management topics, such as exercises, healthy eating, goal setting; and was used throughout training. The programme was divided into six core and six optional topics as illustrated in Figure 9.

Figure 9: Core and optional topics



The six core topics are shown inside the blue oval. The six optional topics are shown outside the oval.

Peer mentor training evaluation

On completion of training, peer mentors were asked to complete an online or paper evaluation form to help assess how effective and engaging they found the training. The evaluation included numerical ratings out of five and free text options. Twelve out of fourteen peer mentors completed the training evaluation.

In general peer mentors found the course content interesting, informative and enjoyable. People with greater prior knowledge of OA self-management said that they did not gain much new information but still rated the overall training positively.

Participants praised the well-thought-out presentations and liked the relaxed presentation style with opportunities for discussion. Having small training groups made it easier for participants to interact and contribute.

> “Each part of the day was fully explained. Slides used were clear and easy to follow.”
>
> “It was very informative and in-depth for the time given.”

Participants were asked to rate aspects of the training on a five-point scale (1=low, 5=high). The question ‘How well equipped do you feel to fulfil your role as a peer mentor?’ was rated highest (mean score = 4.83). The question ‘How motivated do you now feel to carry out your role as a peer mentor?’ was also rated high (mean score = 4.50).

> “I have seen the information and am aware of the support I can access as a mentor. I have the leaflets and booklet to give a framework for the future sessions.”

Participants commented that training days were long and tiring, and some people found remote delivery made it harder to concentrate. Others enjoyed the convenience of being at home, particularly during breaks. The average rating for effectiveness of remote delivery was 4.33. Suggestions for improvement included shorter days, face to face delivery and more opportunities to practise being a peer mentor.

> “I would have preferred training to be in half day sessions, it was difficult to sit comfortably ‘til end of session.”
>
> “Face to face would be nicer, easier to communicate.”

Peer mentor training costs

To address objective 3, we recorded training costs including details of the numbers of attendees and trainers for each training round, and training-related expenses such as cost of digital connectivity, PPI input, printing and posting of resources packs.

The two-day training was organised in two rounds. There were eight attendees in Round 1 and six attendees in Round 2. For each training round there were five trainers/facilitators and two PPI members who had been previous peer mentors. Table 5 provides an estimate of the costs of training 14 peer mentors.

Table 5: Peer mentor training costs

Type of cost	Total
Peer mentor Wi-Fi or additional support	£0.00
Staff costs for five trainers/facilitators (including salary and National Insurance and pension contributions)	£3,216.00
Peer mentor and mentee resource packs printing and postage	£442.40
PPI member recognition payments	£175.00
Total cost of training	**£3,833.40**
Cost of training per peer mentor	**£273.81**

Additional peer mentor costs

There were no requirements for additional digital connectivity costs as all peer mentors had access to their own Wi-Fi. If reimbursement for Wi-Fi was required, the potential cost would be approximately £60 per peer mentor. One peer mentor missed Day 2 of the training due to being unable to connect online through her computer. One of the research team provided four hours of top-up training the following day. The approximate cost for this additional training support was £280.00.

Following training, thirteen peer mentors underwent an enhanced DBS check. This was offered at a discounted rate of £10.00 per person through the University of Leeds. The usual cost would be £49.50 per person. As the DBS checks were carried out remotely, most peer mentors required independent identity verification through the Post Office. The cost for this service was £12.75 per person. Many peer mentors had difficulty using the automated DBS check system and needed support to upload identity documents. The research staff cost for this support was approximately £58.00 per person.

Using this information, DBS check costs without additional support, could range from £22.75 per person (£295.75) to £49.50 per person (£643.50). The total cost for completing DBS checks for study peer mentors, including staff support, was £999.01.

Waiting to be matched

Obtaining DBS checks after training created a delay of several weeks before trained peer mentors could be matched with a mentee. Despite being warned about this delay, there was a risk of previously motivated peer mentors becoming disengaged. To help maintain their interest in the role, the study team kept in regular contact (phone call and email) with individual peer mentors, provided updates on mentee recruitment, discussed availability for mentoring and provided guidance on completing session summaries. Some peer mentors asked for a recap on sections of training, and this was offered informally on an individual basis.

Peer mentors were matched with a mentee as soon as possible after gaining DBS clearance. Suitability for matching depended on peer mentors' and mentees' availability, personal characteristics, mentoring experience, preference for connecting by phone or videoconferencing, and in some cases gender.

Some mentees specifically requested group or one-to-one mentoring; and some peer mentors were keen to support multiple mentees at the same time. All peer mentors were encouraged to start with one-to-one mentoring before taking on a group. Most peer mentors completed one (6 week) round of mentoring with their first mentee before being matched with subsequent mentees, although in a few cases mentorship sessions were conducted concurrently with more than one mentee.

Intervention evaluation

Phase 3 methods and findings

Overview

Phase 3 focused on the delivery and evaluation of the remote peer mentorship programme for people living with hip and/or knee OA experiencing socioeconomic disadvantage. Mentees who took part in the peer mentorship programme were matched with a volunteer peer mentor, who also lived with hip and/or knee OA and experienced socioeconomic disadvantage. The mentees were invited to take part in six peer mentoring sessions.

We conducted a process evaluation, informed by the Medical Research Council process evaluation framework (31), to explore the feasibility, acceptability, and perceived usefulness of a remote OA peer mentorship programme for people with hip and knee OA who are experiencing socioeconomic disadvantage. Data were collected through baseline surveys with mentees, qualitative interviews with the peer mentors and mentees, and sessions summaries completed by the peer mentors.

Mentee recruitment and sampling

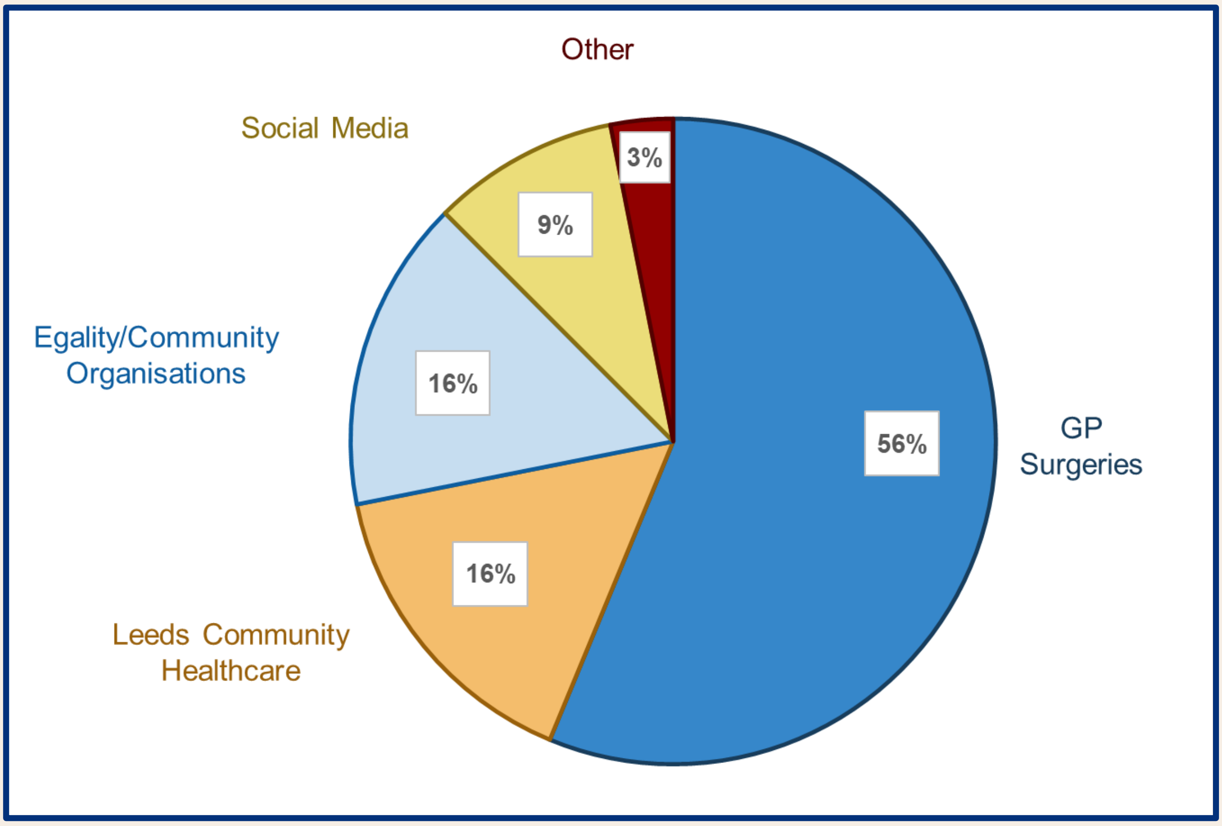
Target recruitment for Phase 3 was around 30 people with hip and knee OA self-identifying as experiencing socioeconomic disadvantage. Learning from the previous study phases, we extended the recruitment period and used various direct and indirect approaches to maximise diversity of participants in relation to age, gender, ethnicity, site of OA, length of time with OA, digital capability and UK geographical location. Our recruitment routes included GP surgeries recruited via the NIHR Clinical Research Network Yorkshire and Humber and West Yorkshire Research and Development and Deep End GP (a network of GP practices serving areas of high levels of socioeconomic disadvantage); Leeds Community Healthcare NHS Trust MSK services; national and local third sector organisations; community networks; Egality Health; and social media platforms.

Recruitment communication methods included sharing posters and flyers, social media posts, newsletter articles, targeted text messaging to people on MSK service waiting lists, word of mouth, local radio and videos. The project team and PPI members promoted the study through their networks of community organisations including Versus Arthritis, Bradford for Better, Leeds Forum

Central, Leeds Older People's Forum and Patient Involvement Groups covering London and the South East.

Recruitment for Phase 3 participants ran from July 2023 to April 2024. Screening commenced in August 2023 with the first eligible participant consented in October 2023. Figure 10 summarises the recruitment routes.

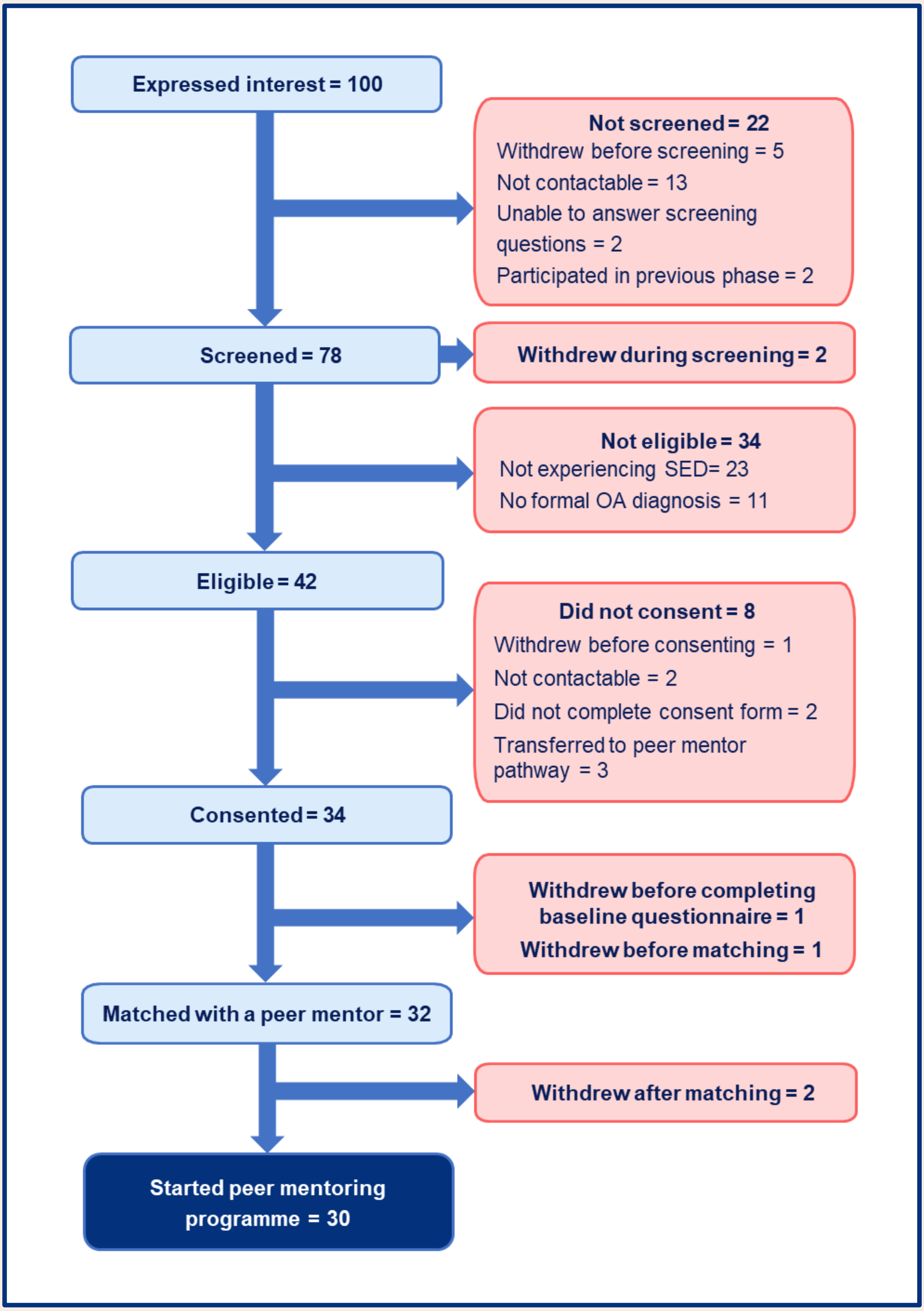
Figure 10: Phase 3 participant recruitment routes



Who was involved?

People who expressed an interest in taking part in the peer mentorship programme were screened for eligibility via phone by the study team. People who met the criteria for eligibility were provided with a participant information sheet and consent form. From 100 expressions of interest, 42 people were eligible to take part in the study. Consent was obtained for 34 participants, 32 were matched with a peer mentor and 30 participants began the peer mentorship programme. Figure 11 shows the number of people who expressed interest and reasons for exclusion.

Figure 11: Phase 3 participant recruitment



OA, osteoarthritis, SED, socioeconomic disadvantage

Recruitment challenges

Our broad recruitment strategy, including the use of a specialist recruitment agency, diverse community networks and social media channels, enabled us to reach a vast potential audience to obtain a target sample of 30 mentees. Despite this, community-based recruitment of mentees for Phase 3 was challenging. Egality Health provided feedback from their community networks and suggested possible barriers to recruitment. These included:

- people not understanding key words in recruitment materials such as ‘peer mentor’, ‘socioeconomic disadvantage’ or ‘osteoarthritis’
- people not knowing if they have a confirmed diagnosis of hip/knee OA
- people not understanding the potential benefits of self-management for OA
- people not being willing to divulge their disadvantaged socioeconomic status
- people considering participation as a mentee as ‘high effort/low reward involvement’.

Some PPI members suggested that mentees would expect payment for participating, even though recruitment posters emphasised six free support sessions. The timing of the intervention may have created a further barrier for some people. During the wait between consenting and being matched with a peer mentor, some participants lost interest and withdrew from the study. A few consented and matched mentees became uncontactable (withdrew) once they received the educational materials. It is possible that the study materials were perceived as unhelpful or inaccessible to them.

Recruitment learning

The most successful recruitment strategies were through primary care, community health services and word-of-mouth. Recruitment via GP and community MSK health service text messages may have given people the impression that their GP/MSK health service endorsed participation in the study, and this appeared to encourage some people to express an interest in participation. Some community representatives and PPI members acted as study ambassadors by sharing information directly with family, friends and their community networks. Hearing about the study and having the opportunity to discuss potential participation with a ‘trusted source’ worked effectively to promote awareness of, and in some cases, participation in the study. PPI members recommended incorporating more in-person opportunities to promote the study and address questions. An in-person recruitment strategy may improve engagement with under-represented communities. Feedback from community organisations via Egality Health suggested that early community consultations and co-creation of recruitment materials with different ethnic groups could have led to better engagement.

Participant characteristics

Table 6 provides the characteristics of the 30 participants who started the mentorship programme.

Table 6: Phase 3 participant characteristics

Characteristic	N	%
Gender		
Male	9	30%
Female	21	70%
Age range		
30 - 39 years	1	3%
40 - 49 years	4	13%
50 - 59 years	7	23%
60 - 69 years	10	33%
70 - 79 years	7	23%
80+ years	1	3%
Ethnicity		
White	20	67%
Black - African	2	7%
Indian	6	20%
Pakistani	2	7%
Geographical region		
Brighton and Hove	1	3%
Greater London	1	3%
Leicestershire	5	17%
South Yorkshire	8	27%
West Yorkshire	15	50%
Site of OA (hip and knee only)		
Single knee	6	20%
Single knee and single hip	4	13%
Single knee and both hips	6	20%
Both knees	9	30%
Both hips	2	7%
Both knees and hips	3	10%
Length of time with OA		
1 year	2	7%
Between 2 - 5 years	10	33%
Between 6 - 10 years	9	30%

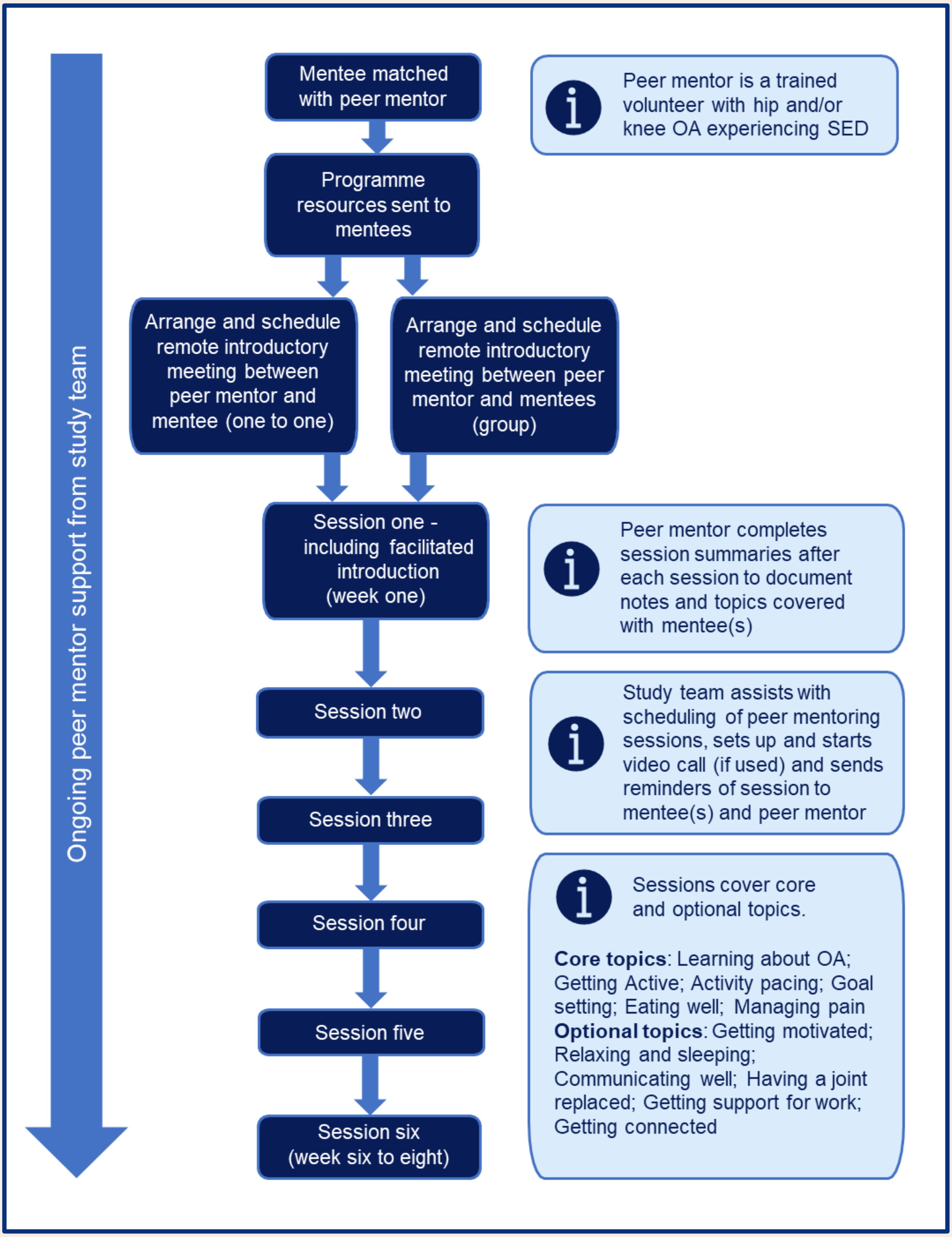
Characteristic	N	%
Between 11 - 15 years	2	7%
Over 15 years	7	23%
Digital capability		
Unconfident	7	23%
Neither confident nor unconfident	5	17%
Confident	11	37%
Very confident	7	23%

OA, osteoarthritis

Intervention delivery

Mentees were invited to join a remote peer mentorship programme for hip/knee OA. The programme consisted of six sessions conducted via phone or video call, over six to eight weeks. Each session was led by a trained volunteer peer mentor with lived experience of hip or knee OA and socioeconomic disadvantage. The peer mentor provided support with self-management through information sharing, goal setting, skill and confidence building, motivation, and social support. Sessions were designed to be tailored to mentees' individual needs. To complement the sessions, mentees were sent programme resources by post, including educational materials, exercise sheets, Versus Arthritis booklets and the programme resource booklet. After each session, peer mentors completed a session summary form. Figure 12 provides a detailed overview of the intervention delivery process. Additional information on the stages of delivery is provided in the boxes marked with the 'i' icon.

Figure 12: Process for intervention delivery



Peer mentor is a trained volunteer with hip and/or knee OA experiencing SED

Peer mentor completes session summaries after each session to document notes and topics covered with mentee(s)

Study team assists with scheduling of peer mentoring sessions, sets up and starts video call (if used) and sends reminders of session to mentee(s) and peer mentor

Sessions cover core and optional topics.

Core topics: Learning about OA; Getting Active; Activity pacing; Goal setting; Eating well; Managing pain **Optional topics**: Getting motivated; Relaxing and sleeping; Communicating well; Having a joint replaced; Getting support for work; Getting connected

OA, osteoarthritis; SED, socioeconomic disadvantage

Data collection methods

Quantitative

Prior to being matched with a peer mentor, mentees provided baseline data through completion of a structured questionnaire. This questionnaire was administered by a researcher either by telephone or via videoconferencing.

Content of the questionnaire included:

- participant characteristics/demographics
- employment status
- history of arthritis
- perceived impact of hip/knee OA on overall life
- current pain ratings and management
- perception and adequacy of social support
- current exercise
- capability with using digital technology

Validated measures used were the 8-item Arthritis Self-Efficacy Scale (41) and the EQ-5D-5L (health-related quality of life) (42).

Qualitative

Mentee longitudinal qualitative interviews: mentees were invited to participate in two remote semi-structured interviews (via videoconferencing or telephone). One interview was conducted immediately following completion of the OA peer mentorship intervention, and a follow-up interview was conducted approximately six-months from the start of the intervention. The semi-structured interviews were guided by topic guides based on the constructs of Normalisation Process Theory (43, 44) and the Framework of Implementation Outcomes (45). Topics as part of the six-week interview included:

- positive/negative experiences of remote OA peer mentorship
- health-related changes or decisions during/immediately following the intervention (adequate guidance/information to self-manage)
- benefits/challenges to receiving peer mentorship/achieving goals

The six-month interview focused on issues around sustained self-management such as:

- perceptions of any self-management changes/improvements in symptoms (OA and health)
- level of knowledge/confidence to self-manage OA
- perceived usefulness of the remote peer mentorship programme

Twenty mentees took part in individual remote interviews (via either phone or video call) at six weeks, with two mentees participating in a remote group interview. At the six-month follow-up, 17 mentees took part in individual remote interviews.

Peer mentor interviews: Peer mentors were invited to participate in a remote semi-structured interview via videoconferencing or telephone. The interview focused on:

- views of the training and support
- delivery of remote peer mentorship
- experiences of being a peer mentor

Twelve peer mentors took part in remote interviews.

Session summaries: Peer mentors were asked to complete session summaries after each mentoring session to provide an overview of what was discussed during each session, which core and optional topics were covered, document the progress of their mentees, and feedback anything else they felt was important.

Data analysis

Transcripts from the mentee and peer mentor interview data were coded inductively by two researchers (SM, EL) using reflexive thematic analysis (37, 38) to develop themes from the data. Details about topics mentioned in the qualitative data were cross-checked with the session summaries.

The data were then deductively analysed, using the Medical Research Council process evaluation framework (31) to identify key points related to the following components:

- context – anything external to the intervention that influences implementation, effectiveness, or outcomes.
- mechanisms of impact – explains how the delivered intervention produces change, including how participants interact with the intervention and how these interactions result in outcomes.
- mediators – these are part of the mechanisms of impact, specifically the intermediate processes that explain outcomes.

The process evaluation utilised findings from mentee's longitudinal qualitative data, taken at six-weeks and six-months, content analysis from the session summaries completed by their peer mentors, and quantitative findings from the mentee's questionnaires. Quantitative and qualitative data were initially analysed separately. Findings were then compiled to form a cohesive narrative.

We have presented the findings below for the mentee attendance, inductively developed themes and then the process evaluation components. We then present the approximate costs of delivering the remote OA peer mentorship intervention and the Stakeholder Discussion Forums we completed at the end of Phase 3.

Mentee attendance

As explained previously, thirty participants commenced the mentorship programme. Peer mentorship started in March 2024, with the last two participants (mentees) starting peer mentorship in July 2024. Mentees received either one-to-one (N=22) or group peer mentorship (N=8). Group peer mentorship was with four groups of two mentees. All six peer mentorship sessions were attended by 43% of mentees (13/30); 17% attended between four or five sessions (5/30) and 40% attended three or fewer sessions (12/30). Other medical appointments or priorities meant peer mentorship sessions were either re-scheduled or not attended.

Phase 3 themes

We developed the following four themes:

1. Mentee engagement with the peer mentorship programme
2. Remote delivery of the peer mentorship programme
3. Acceptability of the peer mentorship programme
4. Self-management progress

Each theme is discussed below with supporting quotes labelled with the mentee/peer mentor's pseudonym.

Theme 1: Mentee engagement with the peer mentorship programme

Mentees explained how having a good rapport with their peer mentor helped them feel comfortable. Mentees frequently described their peer mentors as positive, easy to speak to, compassionate and able to put them at ease. One mentee elaborated that this enabled trust to be built with the peer mentor. Some mentees mentioned having common interests with the peer mentor and how this built rapport. For some, the peer mentor felt like a friend. One mentee reported that while the relationship with her peer mentor was initially good, there wasn't enough emphasis on mentoring. When reflecting on the peer mentorship, another mentee felt that she would have preferred to share certain things with a female peer mentor.

Many mentees considered the involvement of a peer mentor, who understood what having OA was like and the challenges it presents, to be the most valuable component of the intervention. Consistent, dedicated time with the peer mentor was described by some mentees as more useful than previous referrals to Health Care Professionals about their OA.

> “I've just got more from Isla with being on the phone and having a session with her than I have with going to a physiotherapist” **Cheryl, mentee**

Engagement with the peer mentorship programme was generally good, despite many mentees being unsure of what to expect from the intervention. Data from the mentee interviews indicated that most mentees felt that the programme covered what they wanted to know, with one mentee labelling the intervention as, “the full package”. However, some mentees who had been diagnosed with OA for many years expected to receive new insights into the condition rather than information they already knew.

> “I don't know what I were expecting. I but I weren't expecting for me to already know a lot of it” **Gemma, mentee**

Mentees appreciated tailored guidance on managing OA within their daily life, focussing on what they could do and how to gradually increase activity or complete tasks differently. Other valued aspects of the programme included the programme resources and sharing ideas, tips and advice with the peer mentor and/or other group mentee.

Mentees were motivated to take part in the programme for numerous reasons. Mentees wanted to better understand OA, what to expect in the future, how to live with OA and what they could do to self-manage their condition and especially their pain. For some mentees, the intervention was perceived as a natural alternative to pain management and a way to avoid surgery, steroids or strong pain relief. However, for other mentees, the intervention was viewed as an interim measure while they awaited joint replacement surgery or physiotherapy.

From the six-week interview data, it was apparent that some mentees were highly motivated to manage their OA pre-intervention, and therefore easily engaged with activity, programme exercises and eating well. In contrast, other mentees became motivated because of the peer mentorship programme, with one mentee expressing that she felt like she had renewed willpower. Progression with activities and exercise motivated some mentees to want to do more, especially if they recognised a decrease in severity of OA symptoms (e.g. less pain, joints felt less stiff). One mentee did not want to engage with the programme exercises, as he found them less appealing than other forms of exercise.

The peer mentor’s experience of OA could act as either a motivator or a demotivator to engaging with self-management strategies. For some mentees, hearing about their peer mentor’s experience of OA and seeing them manage their own OA was motivational and made them aspire to be more like their peer mentor. Several mentees reflected on how the peer mentor, or other mentee’s OA experiences had put their own into perspective, and how this motivated them to self-manage to improve their OA symptoms and avoid some of the experiences they heard about during the peer mentorship sessions. On the contrary, another mentee, observing that his peer mentor's OA was more severe than his own, questioned the relevance of using the suggested self-management strategies himself.

Theme 2: Remote delivery of the peer mentorship programme

Mentees had mixed views about the remote delivery of the peer mentorship programme. For some, it offered greater convenience and better fit with their routines, while others only considered engaging with remote sessions. Although no one explicitly mentioned disliking the remote format, a few noted that it took longer than expected to build rapport with their peer mentor. One mentee who was less engaged with the intervention described feeling disconnected due to experiencing technical issues with the camera on his phone, meaning the sessions felt like ineffective phone calls.

Practising the programme exercises remotely with their peer mentors was inconsistent. Some mentees chose not to practise during sessions, due to familiarity with the exercises through previous physiotherapy. Other mentees delayed practising remotely. Peer mentors also reported challenges with demonstrating or practising the exercises, either due to not having sufficient space to do this remotely and be easily seen by the mentee or having concerns about the safety of practising exercises together over the phone.

> “We ended up on the WhatsApp and I just, it didn't feel safe to me. I didn't think first that I should be doing any sort of exercise with it, with somebody I couldn't see, because I couldn't see what she was doing” **Isla, peer mentor**

While one mentee noted that connecting remotely during the COVID-19 pandemic had forced them to become comfortable with videoconferencing, some peer mentors faced difficulties with online connectivity and especially using videoconferencing platforms. One mentor strongly preferred phone-based sessions, while another expressed anxiety about using technology for mentoring.

Theme 3: Acceptability of the peer mentorship programme

Many mentees considered the peer mentorship programme content to be acceptable and comprehensive. Generally, mentees who engaged with the programme resources found them to be informative; with the programme exercises and the 'Eatwell guide' cited as the most useful programme resources. A possible reason for this may be due to the use of pictures to illustrate exercises and an optimum food plate. Mentees liked having the programme resources to refer to after the peer mentorship programme had finished, and data from the six-month interviews showed that some mentees still read the programme resources. However, one mentee explained that due to her dyslexia, the resources were not accessible to her without help.

The delivery of the programme by a peer mentor was particularly valued and acceptable. Mentees appreciated both the emotional support such as encouragement, reassurance, and providing a boost when things were difficult for the mentee; and the practical support, including sharing experiences and advice, answering questions, and tailoring programme content.

> "I can't say how much she's done for me. She's done such a lot… I've sort of moved forward so much, both in exercising and getting out and about as well" **Theresa, mentee**

Comparatively, few peer mentors were confident about the impact their involvement had on their mentees, with some unsure about how well they delivered the programme or whether their mentees benefited. Despite this uncertainty, mentors valued the opportunity to support others with OA, with some describing a sense of fulfilment. Several also reported personal gains, including using self-management strategies themselves and learning new insights from their mentees.

Although peer mentor training was positively evaluated directly after training, peer mentor interview data provided mixed feedback on how well the training prepared them to deliver the peer mentorship programme. Positive feedback from peer mentors included that, they liked the structure of the training, valued the resources and felt more knowledgeable by the end. They enjoyed the friendly and relaxed approach to delivering training, appreciated the regular breaks and liked the interactive and past peer mentor sessions. Several peer mentors mentioned that they found the training intensive, or that long days were difficult to fit around their work or current lifestyle. Additionally, some peer mentors expressed that shorter sessions would have been physically easier to manage, citing OA and other health conditions as problematic. Several peer mentors felt the remote group setting made discussion between trainees difficult; and the need to accommodate individual communication needs made it harder for people to ask questions. A few peer mentors felt disconnected because of the remote delivery of training, with connection difficulties and a perceived lack of group interaction impacting on their engagement.

The majority of peer mentors felt the training content was comprehensive although in retrospect, hadn't always adequately prepared them for delivering the programme to particular mentees. Several peer mentors mentioned pre-planning sessions. One said he would have liked more real-world examples of SMART goal setting to be included in the resources. Instead, he had worked through the resources before the session and included an example of SMART goal setting from his own life to explain the concept to his mentees.

> "So you know, it mentions things like SMART goals and just [have] more examples that you could use. So you are not having to find examples. I suppose in a way, it was better for me to find examples from my own life. But just to initiate a little bit, thinking more examples, more like case scenarios. That kind of thing would have been helpful." **Behshad, peer mentor**

Finally, the delay between training and being matched with a mentee was difficult for many mentors, as they felt they had forgotten some of their training. Several peer mentors expressed a need for a refresher session or opportunities to practise mentoring in the meantime.

Peer mentors reported variable experience of delivering the peer mentorship programme. Some did not feel able to follow the programme content as closely as intended due to their mentee's preference for a social session or to discuss non-OA related needs. Some peer mentors were comfortable with the adaptable delivery, while others felt that they were not able to deliver the programme as well as they wanted due to a perceived lack of structured delivery.

> "I felt like I wasn't doing the study justice. I felt like I wasn't doing it properly and I hate not doing things properly. Yeah, I felt like sometimes they weren't listening because they'd have little side chats as well" **Suzy, peer mentor**

Based on evidence from the session summaries, core topics were not always delivered by peer mentors and some peer mentors covered topics not included within the programme, such as helping mentees obtain disability grants and benefit claims. One optional topic, 'Getting support for work' was not covered by any peer mentor. This topic may not have been relevant for many mentees. Only two mentees were employed, while only three were unemployed. The majority were retired (N=14) or medically disabled (N=11).

Physically undertaking the programme exercises with mentees was variable, as was discussion of activity pacing and pain management. Some peer mentors found it challenging to keep mentees focused on the peer mentorship programme, highlighting difficulty in balancing structured content with more personal conversations. Support needs of peer mentors varied: some needed frequent contact with the study team for reflection, reassurance and general guidance; other peer mentors required minimal support. A few peer mentors required focused support on structuring mentorship sessions from a PPI member who had previously been a peer mentor. Overall, peer mentors gained confidence through mentoring, enjoyed meeting new people and being a part of their journey towards better OA self-management.

Theme 4: Self-management progress

Understanding of activity pacing was the most variable. At six-weeks, interpretation of activity pacing varied; a proportion of mentees believed that OA pain did not mean they had to stop all activity but could modify activity and take breaks; for others, it was perceived as resting and restricting activity. Session summaries completed by peer mentors highlighted that activity pacing was not consistently covered with mentees, which may explain the varied interpretation and may also imply that some peer mentors had difficulty understanding the topic and therefore may have shied away from delivering it. While understanding of activity pacing had improved at six-months, some mentees only understood the concept after overdoing activity and experiencing ‘boom and bust’. Other mentees demonstrated understanding of activity pacing but still viewed it as unhelpful when completing tasks that they viewed as time specific.

The purpose of the programme exercises was only partially understood by a proportion of mentees, despite almost all peer mentors indicating that they covered the getting active, staying active module in session summaries. Although most mentees understood that exercise has health benefits and could help them self-manage their OA, fewer mentees identified the link between the programme exercises and muscle strengthening. At six-months, even though she was still practising the programme exercises, one mentee was uncertain about whether the exercises were helping due to still having OA pain. It is possible that motivation to practice programme exercises may decrease over time if mentees do not understand the connection between exercise and muscle strengthening and do not recognise improvement in their OA symptoms.

All mentees reported gaining something positive from the peer mentorship programme. The peer mentorship programme increased mentees' knowledge of self-management strategies and their confidence to engage with self-management. Data from the six-week interviews indicated that mentees were trying out a variety of self-management strategies; with programme exercises, activity and eating well being the most practised forms of self-management. Comparatively, activity pacing and goal setting were either new concepts or concepts mentees state they were not previously good at doing. By six months, mentees were knowledgeable about the self-management strategies that worked best for them. If mentees were not implementing self-management, it was typically because of a setback (e.g. illness), prioritising other things (e.g. caring responsibilities) or because their OA pain had become more manageable. At six months, for some mentees programme exercises were a regular habit, alongside additional exercise. Other mentees were still doing activities, such as walking or exercise classes, but had stopped or reduced how often they were practising the programme exercises. Additionally, mentees had more experience of activity pacing, and most mentees were able to effectively practise this. However, far fewer mentees were still actively setting goals.

> "I'm more aware of what I can and can't do, also I'm more aware of what I should be doing to keep it all under control… But since I haven't had her to nag me each week, I must admit I haven't done all the things that I planned on doing, in so far as exercise" **Janice, mentee**

Data from the six-month interviews discussed the change and progression that mentees had noticed from the beginning of the peer mentorship programme to their follow-up interview. Some mentees recognised that they were doing more activity, were able to do more (e.g. walk further), noticed improved OA symptoms (e.g. decreased pain, improved mobility), felt more confident to go out (including to socialise) and more confident to advocate for themselves, especially with healthcare professionals. It was noted how the programme exercise variations (seated, standing and lying down) contributed to their acknowledgement of progression, by encouraging mentees to do some form of movement, even on bad days.

> "The person I am now is completely different to the person I was at both at the beginning and at six weeks. I think at six weeks I was sort of, I was sitting and thinking of things… the mentorship has sort of opened my eyes more" **Denise, mentee**

Overview of process evaluation components

The process evaluation utilised findings from mentee's longitudinal qualitative data, taken at six-weeks (N=22) and six-months (N=17), findings from the content analysis of the session summaries completed by their peer mentors, and quantitative findings from the mentee's questionnaires.

Using the Medical Research Council process evaluation framework (31) helped with understanding how the delivered intervention may work or not work by:

- understanding the context under which the intervention operates
- evaluating the processes through which the intervention is delivered
- assessing how participants interact with the intervention
- identifying factors that explain potential outcomes or changes in outcomes
- identifying self-reported outcomes of those receiving the intervention

Context

When analysing the mentee interview data, we identified the following contextual factors that impacted on how mentees interacted with the intervention:

- Lived experience of peer mentors – the peer mentor having lived experience of hip and/or knee OA was considered valuable by mentees as they perceived the mentor to be relatable, similar to themselves and authentic.
- Multiple long-term conditions – 27/30 mentees reported other long-term conditions in addition to their hip/knee OA. The severity of these conditions impacted how well some mentees were able to engage with the intervention and with self-management. During the six-month interviews, for a small number of mentees, an emerging new health condition had impacted on their ability to engage with self-management.
- Fatigue and level of OA pain – fatigue, energy and OA pain were all cited as barriers to being able to engage with self-management, especially activity and exercises.
- Joint replacement surgery journey – mentees who were awaiting joint replacement surgery had differing levels of engagement with the intervention compared to those who had recovered/were recovering from joint replacement surgery (even if the joint replacement was perceived as unsuccessful).
- Competing priorities – having caring responsibilities was the most common priority that impacted on how mentees engaged with the intervention. While some mentees discussed the difficulty of balancing their caring responsibilities and life with self-management, others referred to the intervention as being their time for themselves, emphasising the importance of self-care and making themselves a priority. Other competing priorities included work or hobbies and managing other health conditions.

- Digital capability – attendance or length of peer mentoring sessions was variable due to issues connecting online or using videoconferencing. This may have contributed to some mentees dropping out of the programme.
- Cold and damp weather – some mentees discussed having increased difficulty effectively self-managing their OA symptoms during winter.

Mechanisms of impact

We identified the following mechanisms of impact, that influenced how mentees responded to, and interacted with the intervention:

- Rapport and relationship with the peer mentor – feeling well connected and comfortable with the mentor and perceiving that the mentor was interested led to increased engagement with the intervention, while feeling dismissed by the mentor was a barrier to engaging.
- Support peer mentor offered – practical and emotional support.
- Lasting influence of peer mentor – what the peer mentor provided that was valuable and memorable to the mentee in the long term.
- Accountability – at six weeks, mentees discussed feeling accountable to the peer mentor. By six months, for some mentees this shifted to being accountable to themselves, while others struggled to self-manage without peer mentor support.
- Motivation and attitude – included motivations for joining the study, motivations to self-manage and their attitude towards self-management and specific topics, how the intervention impacted on motivation and whether motivation was sustained in the longer term.
- Perceived gains from the programme – the main gains described were knowledge of OA, knowledge of self-management strategies and confidence.
- Perceived usefulness of the programme – discussions focussed on the aspects of the peer mentorship programme and self-management strategies that were considered the most important to the mentee.
- Key learning – in the long term, the key self-management strategies taken from the intervention were around activity pacing, exercise variations, adapting tasks and feeling better able to manage their OA.

Mediators

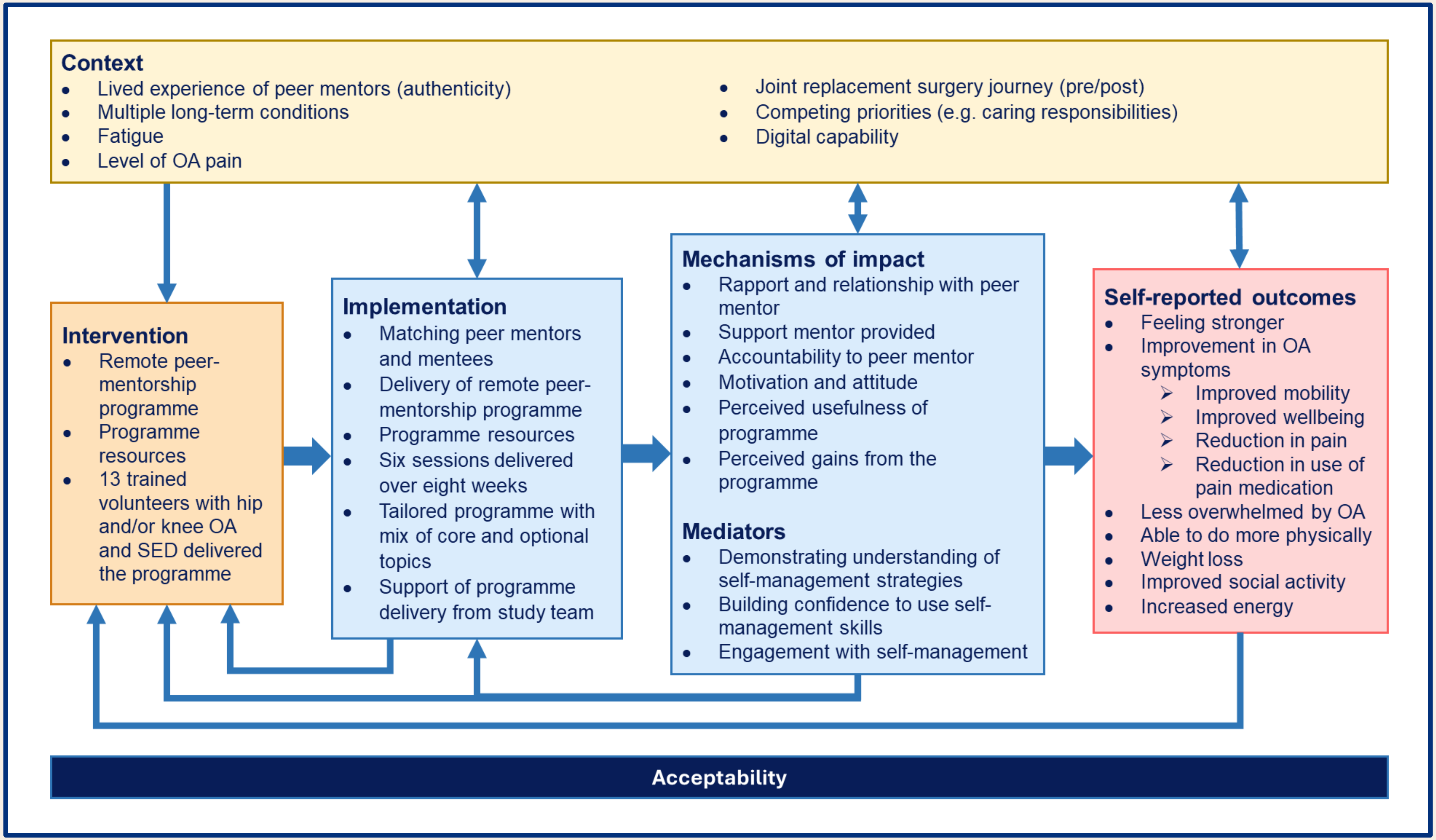
We identified the following mediators. These factors account for how or why outcomes occurred:

- Demonstrating understanding of self-management strategies – at six weeks, mentees expressed an understanding of the need to build up muscle strength, the importance of gradually building up exercise and activity and that low impact activity is better than no activity.

- Building confidence to use self-management skills – at six weeks, generally mentees were trialling a variety of self-management strategies and finding out what worked best for their needs and developing the skills to perform the programme exercises.
- Knowledge of effective self-management strategies – by six months, many mentees were knowledgeable about the forms of self-management that worked best for them.
- Confidence to use self-management strategies – mentees were generally confident that they were able to use some self-management strategies that they believed were effective for managing their OA. For a small number of mentees, they were less confident to undertake certain activities. For example, walking either at a steep gradient, or as part of a walking group was still a daunting activity.
- Engagement with self-management strategies – at six weeks, mentees were trying out self-management including activity and exercise, healthy eating, pain management, relaxation techniques, goal setting and activity pacing. By six months some mentees reported a period of inactivity and a gradual return to self-management, while other mentees spoke of regularly practising forms of self-management and appeared to have developed habits.
- Support of others – support from family and from the community was discussed.
- Reframing mindset – when interviewed at six-months, some mentees discussed feeling like their mindset had changed from taking part in peer mentoring; with mentees reporting feeling more positive, less overwhelmed by their OA and being more accepting about having to do tasks differently.

Figures 13 and 14 summarise the key findings from the six-week and six-month mentee interviews.

Figure 13: Process evaluation findings from mentee six-week interviews



Context
- Lived experience of peer mentors (authenticity)
- Multiple long-term conditions
- Fatigue
- Level of OA pain
- Joint replacement surgery journey (pre/post)
- Competing priorities (e.g. caring responsibilities)
- Digital capability

Intervention
- Remote peer-mentorship programme
- Programme resources
- 13 trained volunteers with hip and/or knee OA and SED delivered the programme

Implementation
- Matching peer mentors and mentees
- Delivery of remote peer-mentorship programme
- Programme resources
- Six sessions delivered over eight weeks
- Tailored programme with mix of core and optional topics
- Support of programme delivery from study team

Mechanisms of impact
- Rapport and relationship with peer mentor
- Support mentor provided
- Accountability to peer mentor
- Motivation and attitude
- Perceived usefulness of programme
- Perceived gains from the programme

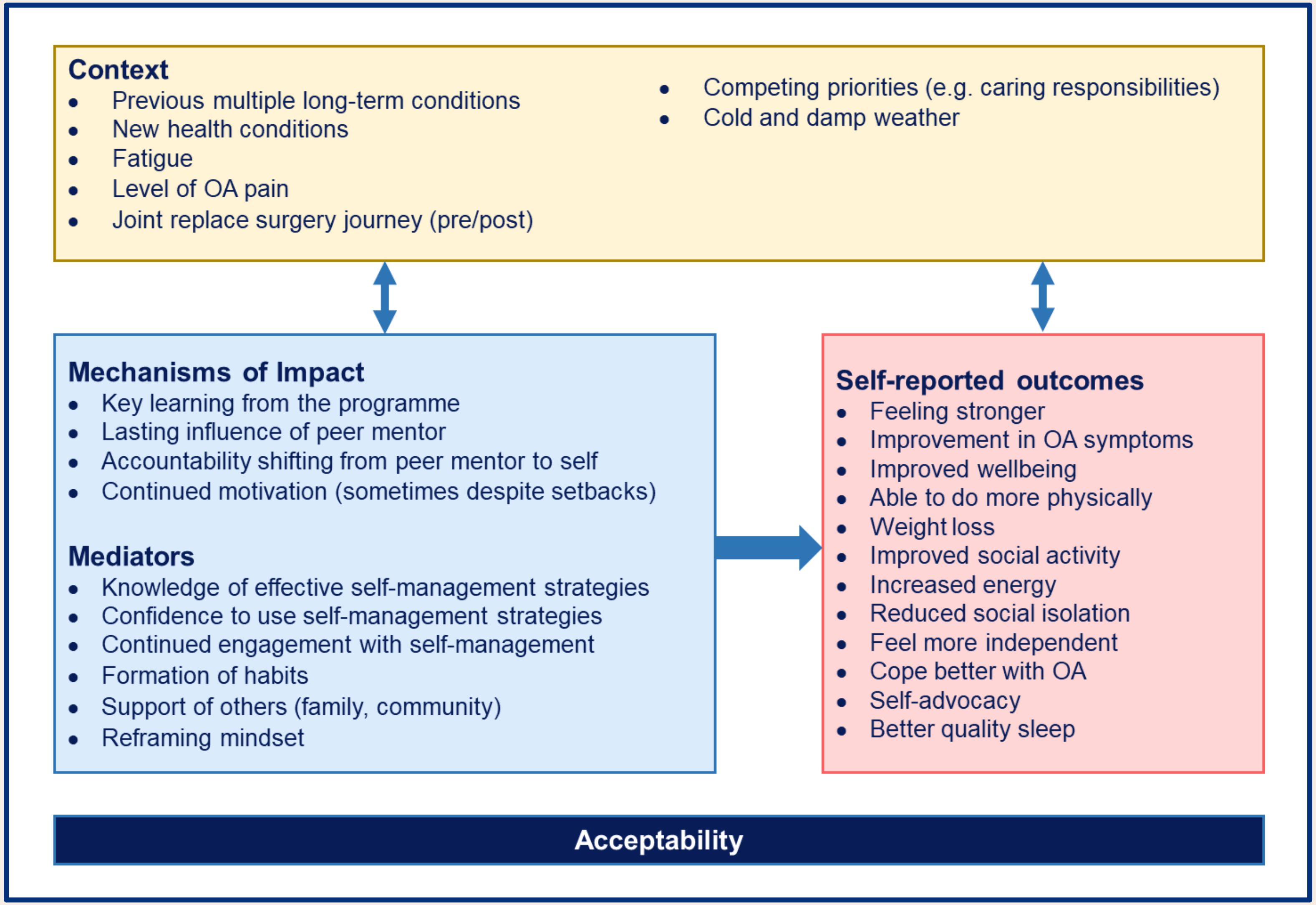
Mediators
- Demonstrating understanding of self-management strategies
- Building confidence to use self-management skills
- Engagement with self-management

Self-reported outcomes
- Feeling stronger
- Improvement in OA symptoms
  - ➢ Improved mobility
  - ➢ Improved wellbeing
  - ➢ Reduction in pain
  - ➢ Reduction in use of pain medication
- Less overwhelmed by OA
- Able to do more physically
- Weight loss
- Improved social activity
- Increased energy

Acceptability

OA, osteoarthritis; SED, socioeconomic disadvantage

Figure 14: Process evaluation findings from mentee six-month interviews



Context
- Previous multiple long-term conditions
- New health conditions
- Fatigue
- Level of OA pain
- Joint replace surgery journey (pre/post)
- Competing priorities (e.g. caring responsibilities)
- Cold and damp weather

Mechanisms of Impact
- Key learning from the programme
- Lasting influence of peer mentor
- Accountability shifting from peer mentor to self
- Continued motivation (sometimes despite setbacks)

Mediators
- Knowledge of effective self-management strategies
- Confidence to use self-management strategies
- Continued engagement with self-management
- Formation of habits
- Support of others (family, community)
- Reframing mindset

Self-reported outcomes
- Feeling stronger
- Improvement in OA symptoms
- Improved wellbeing
- Able to do more physically
- Weight loss
- Improved social activity
- Increased energy
- Reduced social isolation
- Feel more independent
- Cope better with OA
- Self-advocacy
- Better quality sleep

Acceptability

OA, osteoarthritis

Intervention delivery costs

As part of Phase 3, we calculated the approximate costs of delivering the remote OA peer mentorship intervention to 30 mentees. Over half (52%) of the intervention delivery costs were for staff time organising and setting up mentorship sessions and supporting mentees to attend. Just over a third of the costs (33%) were peer mentor ‘thank you’ payments for delivering the mentorship support sessions. The remaining 15% of intervention delivery cost were for programme resources, equipment and additional mentoring support. Table 7 shows the breakdown of costs.

Table 7: Estimated costs for delivering the remote peer mentorship intervention

Type of cost	Total
Peer mentor-mentee matching (approximate cost of staff time)	£1532.00
Arranging mentorship sessions with peer mentors and mentees (approximate cost of staff time)	£1409.40
Peer mentor-mentee introductory session (approximate cost of staff time)	£348.00
Set-up and start of mentorship sessions on Zoom (approximate cost of staff time)	£617.70
Mentee resources (study handouts pack and additional handouts and booklets) printing and postage	£411.00
Peer mentor payments for mentorship session delivery	£2540.00
PPI payments for additional peer mentoring support	£100.00
Equipment loan (digital tablet, data sim) return delivery costs	£574.40
Total cost	**£7532.50**
Average estimated cost per mentee	**£251.00**

Potential additional costs to be included are Wi-Fi replacement costs, costs for translating and interpreting and other enabling support costs such as care replacement. These costs were not required for delivering the intervention with the peer mentors and mentees in this study.

Stakeholder Discussion Forums

At the end of Phase 3, we held two stakeholder discussion forums with health professionals, community organisation representatives and public contributors. The aims of the forums were:

- To explore challenges and collaboratively generate solutions to delivering a remote OA peer mentorship programme for people experiencing socioeconomic disadvantage
- To explore how these challenges could be overcome to enable the programme to be put into practice in real world settings.

Overall, there were twelve attendees: four health professionals working in MSK services spanning both primary and secondary care; four representatives of community organisations supporting older people and/or people experiencing socioeconomic disadvantage, including two volunteer support workers from Versus Arthritis; and four public contributors with OA and experience of socioeconomic disadvantage.

Eight attendees had previous experience of the study. Four people had no prior involvement with the study but met with a member of the study team prior to the event to learn more about the study design, intervention development and delivery. Attendees were briefed on the peer mentorship programme, purpose of the Stakeholder Discussion Forum, and what it would involve prior to the event. Interactive activities were included to encourage contributions from the attendees and help facilitate the discussions.

Activity 1 – Identifying challenges

Attendees were asked to identify possible real-world challenges to delivering and engaging with a remote peer mentorship programme from their perspective. Figure 15 provides the word cloud of potential challenges that was generated and discussed.

Figure 15: Word cloud of challenges to delivering and engaging with the programme

Main identified challenges were:

- time and motivation to participate in the programme
- ongoing engagement with the programme

- motivation to make self-management changes

People not having time to participate in the programme was thought to be due to a higher prevalence of multiple long-term conditions for people experiencing socioeconomic disadvantage, or higher priority life circumstances such as caring or other family responsibilities. The potential impact of participation on benefit payments and associated fear was a challenge that the study team had not previously considered.

Activity 2 – Exploring challenges

Activity 2 involved exploring challenges related to three key challenge areas that we identified based on the study findings.

1. Challenges to remote programme delivery
2. Challenges to delivering the programme to people experiencing socioeconomic disadvantage
3. Peer mentor-related challenges to delivering the programme

Each challenge area comprised specific challenges which attendees were asked to rank in order of importance. Attendees were asked to discuss their rationale for prioritising particular challenges and suggest potential solutions

Challenges to remote programme delivery

Attendees considered peer mentors and mentees developing good rapport to be the most important challenge to overcome. They reasoned that good rapport would encourage engagement with the programme and could lead to improved attendance at sessions even if time and motivation are restricted by complex life circumstances or difficulties connecting remotely.

Challenges to delivering the intervention to people experiencing socioeconomic disadvantage

Attendees ranked prioritising self-management and complex lifestyles affecting attendance as dominant challenges for people experiencing socioeconomic disadvantage. Attendees felt that these two challenges are closely connected and having caring responsibilities for other family members may result in people not recognising their own health needs as important. Fatigue, anxiety and medications associated with non-OA health conditions may all affect programme engagement and motivation to self-manage.

Having poor understanding of self-management and the potential for it to improve OA symptoms may be a particular issue for people with low literacy or for who English is not a first language. Therefore, ensuring clear communication about participation and benefits of the programme is particularly important.

Peer mentor challenges to delivering the intervention

Overall attendees felt that peer mentor training was the most important challenge to delivering the intervention. Several attendees felt that peer mentor availability and training are equally important. The training provides foundational knowledge and skills for them to deliver peer support for OA self-management and peer mentors need to be consistently available to run the programme. Delivering the programme as intended was considered less important than other challenges. Attendees noted that a flexible or tailored approach to delivering the programme was more important for mentee engagement than rigidly following the programme as intended.

Activity 3 – Putting the programme into practice

Attendees considered how the remote peer mentorship programme could be put into practice in a real-world community health setting. Key points discussed were:

- where the programme could be placed,
- how the programme could be promoted
- how people could find out about it
- how to optimise engagement (timing) for mentees and peer mentors

Attendees proposed that a national third sector organisation, such as Versus Arthritis, would be ideally placed to adopt and coordinate the programme. A second suggestions was for city councils to adopt and deliver the programme through Local Care Partnerships. The programme could be widely promoted through community organisations and health services, including Neighbourhood Networks, local councils, GP practices and MSK services. The programme could be hosted locally through community organisations or run alongside local health support services such as diabetes support or heart health programmes.

Health professionals and social prescribers would be central to signposting potential mentees for peer support. Attendees agreed that signposting via a trusted or known service/individual might encourage people who have previously encountered problems accessing services to engage with peer mentorship support. Recruitment and training of volunteers to become peer mentors could be undertaken nationally or locally in affiliated community organisations. Attendees suggested using video case studies of past peer mentors and mentees to advertise for peer mentors and to motivate potential mentees to take part.

Attendees felt that the timing of the programme for mentees was crucial to its success. Setting up the programme so that it can be accessed (or re-accessed) at a timepoint when it is right for the mentee to engage was considered important. This would require offering a rolling programme to meet the differing needs of newly diagnosed people, those who have been living with OA for a while, or when OA symptoms worsen.

Evaluation of the Stakeholder Discussion Forums

All attendees were asked to evaluate the session by completing a short online evaluation questionnaire. Attendees felt that the discussion forums were well organised and facilitated. They found the discussions interesting and engaging, felt able to contribute, and that their comments were valued. They particularly liked the interactive activities which enabled all attendees to actively participate in the forums.

Discussion

Overview

This project developed and assessed the feasibility and perceived usefulness of a remote peer mentorship intervention for people with hip and knee OA who are experiencing socioeconomic disadvantage. To develop the intervention, we rigorously and systematically adapted an in-person OA peer mentorship intervention from our previous work (27). This project's multi-method approach ensured that the development process was rigorous, transparent, and focused on addressing the priorities of people with lived experience of OA and socioeconomic disadvantage. After developing the intervention, we recruited and trained 14 volunteers with hip and knee OA and experiencing socioeconomic disadvantage. Thirteen peer mentors went on to deliver mentorship session to 30 mentees.

Overall, the intervention was well received, with both mentees and peer mentors reporting positive impacts from the peer mentorship programme. Mentees cited increased awareness of self-management strategies, improved confidence to self-manage their OA, and feeling like they had benefitted from the peer mentorship programme. Benefits included being able to do more (e.g. walk further, do more housework), losing weight, having improved mobility, experiencing a decrease in OA pain or their pain feeling more manageable. Feeling less overwhelmed or unable to manage their OA was a significant benefit for many mentees. Some mentees reported benefits that were unrelated to their OA, such as feeling less breathless during exercise or activity, and feeling more confident to go out and socialise with others. Some mentees had been able to return to activities, such as social walking or gym, that they had previously stopped.

The intervention appeared to be most effective when peer mentors shared their lived experiences, expressed empathy and adapted their sessions to suit individual mentees' needs. Tailoring sessions helped with mentee engagement, while good rapport helped with both mentee engagement and trust. Several mentor-mentee dyads expressed sadness about the mentoring relationship come to an end, with mentees wanting to feedback their progress to their mentors, and mentors expressing concern about mentees continuing self-management without support.

Peer mentors described a sense of fulfilment and valued their role in supporting others. These reflections speak to the broader psychosocial benefits of peer mentorship, and a mutual benefit to engaging with peer-mentoring, from the perspective of both the mentee and the peer mentor. Despite these benefits, a number of important challenges were encountered during the study, particularly regarding the recruitment, mentorship programme attendance and engagement, and peer mentor support. Each of these areas is discussed below.

Recruitment

Recruitment of people experiencing socioeconomic disadvantage into research and self-management programmes remains a challenge. The wording of recruitment posters, which had been approved by a Research Ethics Committee and was therefore difficult to change, may have discouraged some people from participating in the study as they did not consider themselves to experience socioeconomic disadvantage despite meeting the criteria. For others, the screening process was not straightforward as they were unable to answer questions to establish whether they had hip and/or knee OA or were experiencing socioeconomic disadvantage. Other recruitment difficulties stemmed from limited understanding of the programme's purpose and its relevance to them. Even interviewed participants who took part in the intervention stated that they were not sure what to expect from the intervention until they started the peer mentorship programme. This highlights the importance of collaborating with PPI and community organisations to agree wording of recruitment materials, to ensure that recruitment materials clearly highlight the benefits and goals of interventions, and the eligibility criteria before seeking ethical approval.

Programme attendance and engagement

Programme attendance was variable. Mentees faced competing demands, such as medical appointments, work commitments, family and caring responsibilities, and hobbies or projects, which made it difficult for mentees to consistently prioritise the peer mentorship programme. Even with frequent session reminders being sent by the study team, some mentees forgot to attend sessions. Several mentees reflected that the timing of the sessions had been less convenient for them than they anticipated. This emphasises the need for greater flexibility in delivery to accommodate the complex needs of this population, such as dynamic scheduling including being allowed to take breaks and return to the programme at a later date.

There was high variability in mentees' confidence to engage with the intervention. Some mentees were highly motivated to adopt self-management strategies, while others had to build confidence to engage with self-management strategies or faced external barriers to participation. Peer mentors differed in their comfort with technology and in their confidence around delivering structured sessions that were helpful to their mentees. These findings suggest a need for tailored onboarding and flexible delivery models that can accommodate a range of readiness and capabilities.

Peer mentor support

While many mentees felt the mentorship sessions went well, the peer mentors' preparedness varied. Peer mentors felt the training was beneficial at the time but subsequently highlighted a need for ongoing support. Peer mentors felt that they would have benefitted from refresher sessions, peer learning opportunities, greater opportunity to ask questions, and accessible guidance for managing remote delivery. Furthermore, restructuring training so that it could be delivered as shorter sessions across more days may be more accommodating to people living with hip and/or knee OA. Addressing these concerns could strengthen consistency, improve peer mentor confidence and thereby improve programme quality, and make the training more inclusive.

Intervention costs

In this study, the cost of training one peer mentor to deliver the remote OA peer mentorship intervention was estimated as £274. In comparison, the training cost per peer mentor in the previous study of the in-person OA peer mentorship intervention was estimated as £239 (27). The higher cost in this study was largely due to higher staff costs, as five trainers were involved at higher payment rates than in the previous study. Additional costs in this study included postage costs for the resource packs and recognition payments for the two PPI members involved in the training. The remote format led to savings in costs for refreshments, stationary, name badges, and peer mentor travel expenses, but the savings were relatively small compared to the increased staff costs.

The relevance of these specific cost estimates to the real world is limited given that university staff would not deliver the intervention in practice. However, these findings are valuable in terms of highlighting that the largest cost associated with training peer mentors is likely to be the staff costs. Involving fewer trainers in delivering the training would help to keep the costs as low as possible, but having at least two trainers present at any single time is ideal to ensure that one trainer can focus on facilitating whilst another manages any technical issues. One way to address this in the real world would to be train volunteers to co-deliver the peer mentor training, as that could reduce the number of trained staff required. The peer mentors in this study particularly appreciated the sessions that were co-delivered by PPI members who were peer mentors in the previous study, so having trained volunteers who are current/previous peer mentors is also likely to have other benefits.

The costs of delivering the remote peer mentorship intervention in this study was estimated as £251 per mentee. The equivalent cost estimate in the study of the in-person OA peer mentorship intervention was £274 (27). In both cases, over half the total cost was attributable to staff costs and approximately a third of the cost was for peer mentor payments. The remote intervention delivery led to savings in costs for peer mentor travel expenses, but extra costs were incurred for printing and posting resources to mentees, PPI payments for additional mentoring supporting, and equipment loan, delivery and return. If the peer mentorship intervention was to be delivered in the real world, a key consideration would be whether to pay peer mentors for their time and, if so, how much. This is particularly important when peer mentors are themselves experiencing socioeconomic disadvantage, and the potential impact of payments for peer mentors receiving benefits would need to be considered.

Implications for policy and practice

Based on our project findings and discussions with diverse stakeholders, we have identified three key challenges to putting a remote OA peer mentorship programme for people experiencing socioeconomic disadvantage into practice in the real world, and proposed strategies that could help address the challenges.

Key challenge 1: Developing peer mentor-mentee rapport

Rapport between the peer mentor and mentee appears to be important for mentees to engage with, and benefit from, peer mentorship. Possible strategies that could help support the development of peer mentor-mentee rapport include:

1. Using pre-meeting calls or introductory video clips of mentors and mentees to enable them to become familiar with each other prior to commencing the formal mentorship sessions.
2. Considering matching based on personal characteristics, rather than simply OA.
3. Consider re-matching of the mentee if rapport is not easily achieved.

Strategies 2 and 3 would require a larger pool of trained peer mentors than were involved in this study, as well as good co-ordination and communication between the mentorship programme organisers and the peer mentors and mentees.

Key challenge 2: Mentees prioritising self-management

People experiencing socioeconomic disadvantage may have complex lifestyles, and many competing priorities, including other health conditions, making it challenging for them to prioritise self-management and limiting attendance and engagement with peer mentorship. Possible strategies that could support people to prioritise self-management include:

1. Offering a buddy system which might be more appealing than mentoring, as it allows for a more equal power dynamic with buddies providing mutual support rather than one where the peer mentor provides structured guidance.
2. Offering a mentorship programme with a flexible structure and timing to suit the mentee, with the opportunity to return to the programme
3. Delivering the mentorship support alongside other health services to improve attendance.

Strategy 3 would require collaboration between different health services but could be particularly valuable given the increased prevalence of multiple long-term conditions among people experiencing socioeconomic disadvantage. A challenge related to this is that care for different conditions is often fragmented, particularly in secondary care. Linking with GP practices and social prescribing services may be an option. However, improving care co-ordination for people with multiple long-term conditions requires services to be tailored to local population needs (46), so the optimal health services to link the peer mentorship programme with are likely to vary in different areas.

Key challenge 3: Suitability of peer mentor support

Providing the right support for peer mentors at the right times appears to be key to ensuring peer mentors feel prepared for their role and well supported. Possible strategies for supporting peer mentors include:

1. Offering rolling training for peer mentors to refresh their knowledge and develop their skills.
2. Engaging a large pool of peer mentors to enable re-matching of mentees and trained mentors to take breaks from programme delivery.
3. Providing regular feedback to peer mentors on the impact of their mentoring support to improve confidence and help develop their skills.

All the above strategies are likely to require more support for peer mentors than was feasible in this project, so having a dedicated volunteer co-ordinator would be essential for the intervention to be successfully implemented in the real world.

Next Steps

At the outset of this project, four key success criteria for progressing to a randomised controlled trial were proposed. Table 8 provides all the success criteria alongside reflections on the extent to which they were met.

Table 8: Study success criteria for progression to a randomised controlled trial

Success criteria	Reflections
Demonstration that OA peer mentorship can be delivered remotely	The findings demonstrate it was possible for peer mentors to successfully deliver the programme remotely and for mentees to engage with the programme remotely. Some concerns related to the remote format were identified, such as that it appeared to take longer than expected to build rapport between mentees and peer mentors. To address barriers to engagement, it was important to offer the option of holding the mentorship sessions via telephone or videoconferencing, offer assistance with setting up mentorship sessions, and offer flexibility with the choice of videoconferencing platform.
Demonstration that study participants find the intervention acceptable	The qualitative interviews with mentees and peer mentors indicated that many aspects of the intervention are acceptable. However, some mentees and peer mentors raised concerns about specific aspects of the intervention. In addition, mentees' attendance at the mentorship sessions was variable (as summarised in this table's final row) and around a quarter of the mentees did not take part in an interview. It is possible these mentees may have found the programme less acceptable than those who did take part in an interview.
Identification of feasible solutions for addressing potential barriers to implementation of the intervention in practice	Working with diverse stakeholders, key real-world implementation challenges were identified and discussed, and possible strategies for addressing the challenges were proposed. Future work would be required to trial the strategies as part of implementing the intervention in the real world.
At least 80% of peer mentor/mentee matches complete six mentorship sessions	Mentee attendance at sessions was variable due to timing, lifestyle factors and competing demands affecting engagement. 43% of mentees completed six mentorship sessions, 17% attended three or four sessions, and 40% completed three sessions or fewer.

OA, osteoarthritis

Overall, the findings suggest that it is possible to deliver the intervention remotely, the intervention is generally acceptable to mentees and peer mentors, and various strategies could be used to help address real-world barriers to implementation. A relatively low percentage of participants completed all six mentorship sessions, indicating that offering flexibility with the number of sessions is likely to work better than pre-specifying a set number of sessions for all mentees. This would enable the number of sessions to be tailored to the mentees' individual goals and other commitments.

Key suggested strategies for addressing the challenges to real-world implementation include having a larger pool of peer mentors and offering rolling training for peer mentors. Strategies such as these would require the peer mentorship intervention to be delivered at scale on an ongoing basis. Achieving this within the constraints of a randomised controlled trial is likely to be challenging and may not provide a close reflection of how the intervention would actually be delivered in the real world. Furthermore, undertaking a randomised controlled trial would be a costly and time-consuming process.

Given that tackling MSK health inequalities is currently a national priority (8), and this study has shown the peer mentorship intervention has the potential to benefit people experiencing socioeconomic disadvantage, a potentially valuable next step would be to prioritise working in partnership with a third sector organisation to implement the intervention in the real world. Further research of the intervention could be undertaken alongside real-world implementation using an approach such as a realist evaluation. Realist evaluations focus on exploring what works, for whom, in what circumstances and why (47), so could be particularly helpful for this peer mentorship intervention given this study’s findings highlight that the intervention is highly context dependent and likely to work (or not work) differently for different people.

Conclusion

In summary, this project demonstrates that remote peer mentorship for people with OA experiencing socioeconomic disadvantage is feasible and acceptable, with the potential for meaningful individual impact. To optimise future delivery, investment is needed in mentee recruitment and scheduling strategies, peer mentor training and support, support with digital capabilities and flexible approaches that account for the complexity of people's lives. These insights are directly relevant to funders and policymakers interested in equitable models of remote community-based self-management support that help address the difficulties that people with OA experiencing socioeconomic disadvantage face.

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Appendices

Appendix 1: Image descriptions of all figures

Figure 1: Summary of the project background

This infographic summarises the background to the RaMIgO project. It includes the following text and simple line drawings to illustrate the text, such as a person sat down holding their knee.

In the UK, hip osteoarthritis (OA) affects about 5.4 million people and knee OA affects about 3.2 million people. There is no cure; treatments include pain relief and physiotherapy. People with socioeconomic disadvantage often have more severe OA symptoms and are less likely to get treatment.

Peer Mentoring helps with self-management of OA. The RaMIgO study was set up with volunteers who have OA. This study involved developing a remote peer mentorship programme for people with hip and knee OA.

Figure 2: Summary of the project questions and methods

This infographic summarises the RaMIgO project questions and methods. It includes the following text and simple line drawings to illustrate the text, such as people sharing ideas about the peer mentorship programme.

Questions

- Can the programme be delivered remotely?
- Can it be delivered by volunteer peer mentors?
- Will it be useful for people with OA who are experiencing socioeconomic disadvantage?

Methods

People with hip and knee OA helped design the programme. This helped with making it easier to participate remotely.

The peer mentorship programme includes core and optional topics. The core topics are learning about osteoarthritis, goal setting, getting active, eating well, activity pacing and managing pain. The optional topics are getting motivated, relaxing and sleeping, communicating well, having a joint replaced, getting support for work, and getting connected.

Thirteen volunteers were trained to be peer mentors and deliver the programme. The peer mentors were matched with mentees. Thirty people with hip and knee OA became mentees.

Figure 3: Key findings - self-management

This infographic summarises key findings related to self-management. It includes the following text and a line drawing of a lady exercising by holding onto a chair and moving her leg backwards.

Mentees were confident to do activities even if in pain. Mentees learned about OA and why being active is important. It was useful learning about pacing activity and communicating well. Many liked that their peer mentor tailored exercises for them. Some mentees were able to discuss topics not in the programme.

The lower part of the infographic includes a line drawing of a mentee with the pseudonym Cheryl saying: “On the days when I’m not as stiff, I’ll do the ones stood up, you see, and sat on a chair, and the ones when my legs feel they’re a bit stiff and I need to rest them I’ll do the ones laid in bed.”

Figure 4: Key findings - relationship with peer mentor

This infographic summarises key findings related to the relationship between peer mentors and mentees. It includes the following text and a line drawing of a man talking to another man via a video call on a laptop.

A good relationship was key to the programme’s success. Mentees learned new information about OA and gained confidence and digital skills. Having someone to talk to made people more able to cope.

The lower part of the infographic includes two speech bubbles. One is from a peer mentor with the pseudonym Nora and states: “I loved doing it! I think if you enjoy doing it, it comes across when you’re talking to them.” The other is from a mentee with the pseudonym Gemma and states: The biggest thing that was good is because she’d experienced it before as well.”

Figure 5: Key findings - programme format, delivery and training

This infographic summarises key findings related to the peer mentorship programme format, delivery and training. It includes the following text and simple line drawings to illustrate the text, such as a resource booklet.

Some mentees preferred 1:1, some preferred small groups. Many enjoyed making connections. Mentees had mixed feelings about the remote sessions. Some were positive, some negative. Timing of the sessions was key. Some would have preferred mor flexibility others liked their regularity.

The lower part of the infographic includes a line drawing of a peer mentor with the pseudonym Behshad saying: “I learned as much from those people than I kind of shared with them. So it was kind of a two way experience.”

Figure 6: Project flow chart

This image description is adapted from Supplementary File 1 in Anderson et al. (32) under the terms of the Creative Commons Attribution License.

Project flow chart showing the cross-cutting principle and steps quoted from the ADAPT guidance (33), the project's phases, and an arrow at the bottoms showing ongoing input from the Project Advisory Group and Patient and Public Involvement group.

ADAPT guidance

Cross-cutting principle: Form an adaptation team of diverse stakeholders.

Step 1: Assess the rationale for intervention and consider intervention-context fit.

Step 2: Plan and undertake adaptations.

Step 3: Plan and undertake piloting and evaluation.

Step 4: Implement and maintain the adapted intervention at scale.

OA peer mentorship intervention adaptation

Phase 1: Intervention development (mapped to ADAPT steps 1 and 2)

- Phase 1a: Exploring barriers and enablers
- Phase 1b: Developing and finalising the adapted intervention

Phase 2: Intervention set-up (mapped to ADAPT step 2)

- Recruiting and training peer mentors

Phase 3: Process evaluation (mapped to ADAPT step 3)

- Delivering and evaluating the adapted intervention
- Stakeholder discussion forum

Potential future work (mapped to ADAPT steps 2 and 4)

- Randomised controlled trial, implementation, and maintenance of the adapted intervention.

Figure 7: Phase 1 participant recruitment

Flow chart of the Phase 1a participant recruitment showing the reasons for exclusion at each stage.

Eighty-nine individuals expressed interest, of whom 53 were not screened due to the following reasons:

- Not contactable = 6
- Suspected imposters = 43
- Did not meet purposive selection criteria = 2
- Enquired too late = 1
- Did not answer all screening questions = 1

Thirty-six individuals were screened, of whom five were not eligible due to the following reasons:

- No experiencing socioeconomic disadvantage (SED) = 3
- No formal OA diagnosis = 2

Thirty-one individuals were eligible, of whom seven did not consent due to the following reasons:

- Decided to become a peer mentor = 1
- Did not complete consent form = 6

Twenty-four individuals consented, of who four did not participate due to the following reasons:

- Withdrew after consent = 3
- Lost contact after consent = 1

Twenty individuals participated.

Figure 8: Recruitment, training and matching of peer mentors

Flow chart of the recruitment, training and matching of peer mentors, including reasons for exclusion at each stage.

Thirty-five individuals expressed interest in being a peer mentor, of whom nine were not screened due to the following reasons:

- Applicant not selected = 6
- Not contactable = 2
- Did not attend screening = 1

Twenty-six individuals were screened, of whom three were not eligible due to the following reasons:

- Not experiencing socioeconomic disadvantage = 2
- No hip or knee OA = 2

Twenty-three individuals were eligible, of whom one joined the mentee pathway and five withdrew due to the following reasons.

- Did not attend interview = 3
- Time commitment = 1
- Not contactable = 1

Seventeen individuals were potential peer mentors, of whom three could not attend training due to the following reasons:

- Health issues = 2

- Not available for training dates = 1

Fourteen individuals were trained as peer mentors, of whom one withdrew due to health issues.

The remaining 13 peer mentors received DBS clearance and were available for matching.

Twenty-two individual peer mentor and mentee matches were made.

Five group peer mentor and mentee matches were made (10 mentees).

Figure 9: Core and optional topics

Overview of the core and optional topics included in the peer mentorship programme. The core topics inside an oval labelled ‘Self-management tools’ and the optional topics are outside the oval.

The core topics include:

- Learning about osteoarthritis
- Goal setting
- Getting active
- Eating well
- Activity pacing
- Managing pain

The optional topics include:

- Getting motivated
- Relaxing and sleeping
- Communicating well
- Getting connected
- Having a joint replaced
- Getting support for work

Figure 10: Phase 3 participant recruitment routes

Pie chart showing the recruitment routes of the Phase 3 participants as follows:

- GP Surgeries: 56%
- Leeds Community Healthcare: 16%
- Egality/Community Organisations: 16%
- Social media: 9%
- Other: 3%

Figure 11: Phase 3 participant recruitment

Flow chart of the Phase 3 participant recruitment showing the reasons for exclusion at each stage.

One hundred individuals expressed interest, of whom 22 were not screened due to the following reasons:

- Withdrew before screening = 5
- Not contactable = 13
- Unable to answer screening questions = 2
- Participated in previous phase = 2

Seventy-eight individuals commenced screening, of whom two withdrew during screening and 34 were not eligible due to the following reasons:

- Not experiencing socioeconomic disadvantage = 23
- No formal OA diagnosis = 11

Forty-two individuals were eligible, of whom eight did not consent due to the following reasons:

- Withdrew before consenting = 1
- Not contactable = 2
- Did not complete consent form = 2
- Transferred to peer mentor pathway = 3

Thirty-four individuals consented, of whom one withdrew before completing the baseline questionnaire and one withdrew after matching.

Thirty-two participants were matched with a peer mentor, of whom two withdrew after matching and 30 started the peer mentoring programme.

Figure 12: Process for intervention delivery

Flow chart of the process for the intervention delivery, showing the delivery steps and accompanying information. An arrow demonstrates that ongoing peer mentor support from the study team was provided throughout the process.

The steps involved in the intervention delivery include:

- Mentee matched with peer mentor.
- Programme resources sent to mentees.
- Arrange and schedule remote introductory meeting between peer mentor and mentee (one to one) or arrange and schedule remote introductory meeting between peer mentor and mentees (group).
- Session one, including facilitated introduction taking place on week one, followed by sessions two to six, with session six taking place on week six to eight.

The accompanying information includes:

- Peer mentor is a trained volunteer with hip and/or knee OA experiencing socioeconomic disadvantage.

- Peer mentor completes session summaries after each session to document notes and topics covered with mentee(s).
- Study team assists with scheduling of peer mentoring sessions, sets up and starts video call (if used) and sends reminders of session to mentee(s) and peer mentor.
- Sessions cover core and optional topics.
- Core topics: Learning about OA; Getting Active; Activity pacing; Goal setting; Eating well; Managing pain.
- Optional topics: Getting motivated; Relaxing and sleeping; Communicating well; Having a joint replaced; Getting support for work; Getting connected.

Figure 13: Process evaluation findings from mentee six-week interviews

Overview of the process evaluation findings from the mentee six-week interviews, with separate boxes for each of the following elements.

Context

- Lived experience of peer mentors (authenticity)
- Multiple long-term conditions
- Fatigue
- Level of OA pain
- Joint replacement surgery journey (pre/post)
- Competing priorities (e.g. caring responsibilities)
- Digital capability

Intervention

- Remote peer mentorship programme
- Programme resources
- 13 trained volunteers with hip and/or knee OA and socioeconomic disadvantage delivered the programme

Implementation

- Matching peer mentors and mentees
- Delivery of remote peer mentorship programme
- Programme resources
- Six sessions delivered over eight weeks
- Tailored programme with mix of core and optional topics
- Support of programme delivery from study team

Mechanisms of impact

- Rapport and relationship with peer mentor
- Support mentor provided
- Accountability to peer mentor
- Motivation and attitude
- Perceived usefulness of programme
- Perceived gains from the programme

Mediators (part of the mechanisms of impact box)

- Demonstrating understanding of self-management strategies
- Building confidence to use self-management skills
- Engagement with self-management

Self-reported outcomes

- Feeling stronger
- Improvement in OA symptoms
- Improved mobility
- Improved wellbeing
- Reduction in pain
- Reduction in use of pain medication
- Less overwhelmed by OA
- Able to do more physically
- Weight loss
- Improved social activity
- Increased energy

The context box is linked to the intervention box by a single headed arrow and to all the other boxes by a double headed arrow.

The intervention box is linked to the implementation box by a single headed arrow.

The implementation box is linked to the mechanisms of impact and mediators box and the intervention box by single headed arrows.

The mechanisms of impact and mediators box is linked to the intervention, implementation and self-reported outcomes boxes by single headed arrows.

The self-reported outcomes box is linked to the intervention box by a single headed arrow.

An additional box called acceptability is shown at the bottom of the figure and spans all the other boxes.

Figure 14: Process evaluation findings from mentee six-month interviews

Overview of the process evaluation findings from the mentee six-month interviews, with separate boxes for each of the following elements.

Context

- Previous multiple long-term conditions
- New health conditions
- Fatigue
- Level of OA pain
- Joint replace surgery journey (pre/post)
- Competing priorities (e.g. caring responsibilities)
- Cold and damp weather

Mechanisms of Impact

- Key learning from the programme
- Lasting influence of peer mentor
- Accountability shifting from peer mentor to self
- Continued motivation (sometimes despite setbacks)

Mediators (part of the mechanisms of impact box)

- Knowledge of effective self-management strategies
- Confidence to use self-management strategies
- Continued engagement with self-management
- Formation of habits
- Support of others (family, community)
- Reframing mindset

Self-reported outcomes

- Feeling stronger
- Improvement in OA symptoms
- Improved wellbeing
- Able to do more physically
- Weight loss
- Improved social activity
- Increased energy
- Reduced social isolation
- Feel more independent
- Cope better with OA

- Self-advocacy
- Better quality sleep

The context box is linked to the other two other boxes by double headed arrows.

The mechanisms of impact and mediators box is linked to the self-reported outcomes box by a single headed arrow.

The self-reported outcomes box is linked to the intervention box by a single headed arrow.

An additional box called acceptability is shown at the bottom of the figure and spans all the other boxes.

Figure 15: Word cloud of challenges to delivering and engaging with the programme

Word cloud of challenges to delivering and engaging with the remote peer mentorship programme suggested during the Stakeholder Discussion Forums. Time is shown in large pink letters in the centre, surrounded by engagement, benefits, motivation and accessibility in slightly smaller blue letters. The following words are included in smaller green writing: life or family changes, digital barriers, resources, unclear aims, denial, evaluation, fear, accepting, communication, acceptability, other commitments, interest, safety, awareness, ongoing mentor support, funding, service provision, appointments, cultural differences, attendance, managing expectations, attendance, cynicism, pain, support, local service knowledge, technology.

Appendix 2: Phase 1 topic guide prompt questions

A: Self-management

1. In what ways do you manage/self-manage your osteoarthritis? How does that help you?
2. What prevents you from managing your osteoarthritis/ what makes it more difficult?
3. What might help you manage your osteoarthritis better?

B: Information

1. How would you find out about managing your osteoarthritis?
2. How useful are the sources of information you have used to find out about osteoarthritis?
3. What, if any, difficulties have you had accessing the support you need?
4. What would you like to know more about?
5. Thinking about your osteoarthritis what type of support would be most helpful to you?
6. What type of support would be least helpful to you?

C: Peer mentorship

1. What does the term peer mentor mean to you?
2. How do you think a peer mentor could support someone with osteoarthritis?
3. In what ways could a peer mentor help you manage your osteoarthritis better?
4. How would you feel about being supported by a peer mentor?
5. What would an ideal programme of peer mentorship for people with osteoarthritis look like?

D: Experience of using the Internet/videoconferencing

1. Have you ever had a remote consultation or health support with a GP or other health professional? Was this consultation by telephone or videoconferencing?
2. Can you tell us about this? What was good / less good about it? What would have made it better?
3. Overall how confident would you feel about having remote health support?
4. Thinking about our discussion of peer mentorship support, how would you feel about receiving remote support (online or by telephone) to help you manage your osteoarthritis?

E: General

1. Is there anything else that anyone would like to share or discuss further?

Appendix 3: Phase 1 participant characteristics

Characteristic	Number (%)
Gender	
Male	8 (40)
Female	12 (60)
Age (years)	
30 – 39	1 (5)
40 – 49	1 (5)
50 – 59	5 (25)
60 – 69	7 (35)
70 – 79	5 (25)
80 – 89	1 (5)
Ethnicity	
Black British	3 (15)
British East European	1 (5)

Characteristic	Number (%)
British Indian	4 (20)
British Pakistani	4 (20)
East African Asian	2 (10)
English American	1 (5)
White British	5 (25)
Site of OA	
Knee	13 (65)
Hip	2 (10)
Both	5 (25)
Time living with OA (years)	
2 < 5	4 (20)
5 < 10	8 (40)
10 < 20	3 (15)
≥ 20	5 (25)
Consider themselves to have a disability	
Yes – because of OA	15 (75)
Yes – because of OA plus other conditions	2 (10)
Yes – because of a condition(s) other than OA	1 (5)
No	2 (10)
Have access to the Internet	
Yes	18 (90)
No	2 (10)
Experience of using videoconferencing	
Not at all experienced	6 (30)
Fairly experienced	1 (5)
Quite experienced	4 (20)
Experienced	4 (20)
Very experienced	5 (25)

OA, osteoarthritis.

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