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Participants' experiences and acceptability of a home-based walking exercise behaviour-change intervention (MOtivating Structure walking Activity in people with Intermittent Claudication (MOSAIC))

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Abstract

Objectives This study explored the experiences and acceptability of a novel, home-based, walking exercise behaviour-change intervention (MOtivating Structured walking Activity in people with Intermittent Claudication (MOSAIC)) in adults with Peripheral Arterial Disease (PAD).
Design and setting Individual semi-structured audio-recorded interviews were conducted with adults with Peripheral Arterial Disease who had completed the MOSAIC intervention as part of a randomised clinical trial. Data were analysed using inductive reflexive thematic analysis and interpreted using the seven-construct theoretical framework of acceptability of healthcare interventions (TFA).
Participants Twenty participants (mean age (range) 67(54–80) years, 70% male, 55% White British) were interviewed.
Results One central theme was identified: *Acceptability of walking exercise as a treatment*. This theme was explained by four linked themes: *Exploring walking exercise with a knowledgeable professional, Building confidence with each step, Towards self-management-learning strategies to continue walking* and *The impact of walking exercise*. These themes were interpreted using six of the seven TFA constructs: affective attitude, burden, perceived effectiveness, intervention coherence, opportunity costs, and self-efficacy.
Conclusions Participants perceived MOSAIC as an effective, acceptable, and low burden intervention. Physiotherapists were regarded as knowledgeable and supportive professionals who helped participants understand PAD and walking exercise as a treatment. Participants developed confidence to self-manage their condition and their symptoms. As participants confidence and walking capacity improved, they expanded their activities and gained a more positive outlook on their future. MOSAIC is an acceptable intervention that may facilitate adoption of and access to exercise for people with PAD.

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Implications for practice

- The MOtivating Structured walking Activity in people with Intermittent Claudication (MOSAIC) intervention was perceived as an effective, low burden and acceptable intervention by participants.
- Physiotherapists were regarded as knowledgeable and supportive professionals who helped participants understand PAD and walking exercise as a treatment.
- MOSAIC helped participants improve their confidence to self-manage their condition and as their walking capacity improved participants expanded their activities and gained a more positive outlook on their future.
- Implementation of MOSAIC may facilitate adoption of and access to exercise therapy for people with PAD.

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Keywords: Peripheral arterial disease; Walking exercise; Behaviour-change; Qualitative

Introduction

Peripheral arterial disease (PAD) reduces walking capacity and increases cardiovascular morbidity and mortality [1,2]. Supervised exercise therapy is a recommended but underused treatment for people with intermittent claudication, an ischaemic walking leg pain, due to PAD [3–6]. Limited availability of supervised exercise therapy and lack of time, transportation, resources and motivation contribute to low participation rates [5,7–9]. Home-based interventions are a promising alternative to supervised exercise but findings from clinical trials are mixed [10–15].

A new home-based walking exercise behaviour-change intervention, the Motivating Structured walking Activity in people with Intermittent Claudication (MOSAIC), was systematically developed [16] to target the factors that support walking exercise behaviour-change identified from two psychological models (The Theory of Planned Behaviour, The Common-Sense Model of Illness Representations [17–19]). In a trial, including 190 participants with intermittent claudication, there was a statistically significant, clinically meaningful, mean increase in 6-minute walk distance of 16.7 m in the MOSAIC group compared to the usual care group at 3-months [20].

To implement effective healthcare at scale, interventions need to be acceptable to patients and practitioners, delivered with fidelity and feasible [21]. Acceptability reflects the extent to which people receiving an intervention consider it to be appropriate, based on experienced cognitive and emotional responses to the intervention [22]. It influences patient uptake and adherence to treatment [21]. The Theoretical Framework of Acceptability (TFA) [22] comprises seven constructs that considers how an individual feels about MOSAIC (affective attitude); the perceived amount of effort needed to participate in MOSAIC (burden); the extent to which MOSAIC fits with an individual's value system (ethicality); the extent to which an individual understands the purpose of MOSAIC and how it works (intervention coherence); the extent to which benefits or an individual's value have to be compromised to participate in MOSAIC (opportunity costs); the extent to which MOSAIC is perceived to achieve its purpose (perceived effectiveness) and an individual confidence that they can complete MOSAIC (self-efficacy). This study aimed to explore participants' experiences and the acceptability of MOSAIC**.**

Methods

Design

This semi-structured individual interview study was nested within a randomised clinical trial [19,20]. The trial included consenting adults aged ≥ 50 years, with established PAD and intermittent claudication who were walking < 90 minutes/week. People who had completed any medically supervised exercise in the previous 6-months or planned participation in medically supervised exercise within 6-months were excluded from the trial [19,20].

This study was conducted within the constructivist paradigm of patients' experiences and acceptability of MOSAIC. This approach asserts that knowledge and understanding is constructed by individuals as they reflect and make sense of their experiences [23]. The study is reported in accordance with the consolidated criteria for reporting qualitative research [24].

Participant recruitment

A purposive subsample of trial participants who received MOSAIC were invited to be interviewed after their final research assessment. Purposive sampling was applied to ensure that participants with a range of sex, age, ethnicities, and baseline walking capacity were included [25]. Consent was re-confirmed verbally at the start of the interview.

The Motivating Structured walking Activity in people with Intermittent Claudication intervention

The MOSAIC intervention was a 12-week, home-based, walking exercise, behaviour-change intervention that aimed to target the factors that influence walking behaviour in

people with PAD [26–28]. It comprised two 60-minute in-person consultations and two 20-minute telephone consultations with a trained physiotherapist. MOSAIC incorporated theory-informed, behaviour-change techniques delivered using motivational interviewing to increase participants' motivation and commitment to walking exercise. All participants received a pedometer and a manual that included an exercise diary [19] and completed a home-based walking exercise plan that was progressed until they achieved treatment recommendations (walking at least three times/week for 30–50 minutes at a pace that induces moderate leg pain within 3–5 minutes) [3].

Data generation

Individual audio-recorded telephone interviews were conducted by one experienced female qualitative researcher with an MSc in Health Psychology (BV). She was a Research Assistant on the trial but was not involved in delivering MOSAIC. The interviews followed a topic guide that was informed by previous studies [26,29,30] and piloted with one patient advisor (Supplementary file 1). Interviews were transcribed verbatim by one professional transcription provider, checked for accuracy against the original recordings and anonymised by the researcher. It was anticipated that up to 20 interviews would be conducted to obtain sufficient information power [31].

Data analysis

Data were analysed using inductive reflexive thematic analysis [32,33]. Transcripts were read by the primary researcher (BV) to identify codes that were managed using NVIVO v10 (QSR International Pty Ltd). A second researcher (SQM) independently coded two transcripts and discussed initial codes with BV to sense check and consider alternative data interpretation. The primary researcher generated provisional themes by collating initial codes. Provisional themes were discussed with the research team (LB, JB, MGH, JW, MS, GF) until patterns were identified and refined to identify the final themes. The final themes were labelled, then interpreted and discussed through the theoretical perspective offered by the TFA [22].

Results

Participant characteristics

Twenty-three potential interviewees were invited to take part. Three people declined (time commitments (n = 2), no reason given (n = 1)). Twenty participants were included (mean age (range) 67(54–80) years, 70% male, 25% Black, African and Caribbean heritage, mean baseline 6-minute walk distance (range) 385(274–502) metres). Most interviewees attended all MOSAIC consultations (90%) and 70% interviewees had large clinically meaningful improvements in walking capacity after completing MOSAIC (Table 1).

Interviews lasted between 25 and 60 minutes. One central theme was identified: *Acceptability of walking exercise as a treatment*. This was explained by four linked themes: *Exploring walking exercise with a knowledgeable professional, Building confidence with each step, Towards self-management-learning strategies to continue walking* and *The impact of walking exercise* (Fig. 1). These themes were discussed using six TFA constructs (Table 2).

Acceptability of walking exercise as a treatment

A central theme captured the aspects of MOSAIC that enabled the interviewees to learn about, experience and accept self-directed walking exercise treatment for PAD. This was achieved within the infrequent, brief consultations that interviewees regarded as convenient and not burdensome. The supportive guidance from a knowledgeable physiotherapist was crucial and during the intervention, some interviewees perceptions of walking exercise changed from a painful limiting activity to a healthy, easy treatment. Most interviewees reported that they walked further, complete additional enjoyable activities and had a more positive outlook.

"it's [walking exercise is] now the way, my lifestyle I should say, you know, yeah. I am keeping that up because I see what it's done for me and I'm not going back there, if it's just a simple thing as walking" (Interviewee 2, Female, 75 years)

Some interviewees did not find MOSAIC or walking exercise acceptable. Sometimes this was because they struggled to establish a rapport with their physiotherapist or identified insurmountable barriers to walking (e.g., lack of supportive walking companion, challenging walking terrain). Some interviewees reported that MOSAIC was not what they anticipated. In these cases, MOSAIC did not align with interviewee expectations of physiotherapy treatment (e.g., exercise, physical measures).

"…you expect to see a physio, you know, sort of check you, get you on a treadmill or in a swimming pool and see what you can do, you know, it's… that sort of physio don't connect" (Interviewee 3, Male, 61years)

Theme 1. Exploring walking exercise with a knowledgeable professional.

This theme described how MOSAIC enabled the interviewees to share and build on their knowledge and understanding of their condition, symptoms, and walking exercise treatment with their physiotherapist. Prior to completing MOSAIC, many interviewees had received minimal walking advice and practical support to increase their walking independently. They regarded walking as painful and burdensome. The intervention format, duration

Table 1
Interviewee characteristics.

ID	Sex	Age (years)	Self-reported Ethnicity*	Walking capacity (metres)#	Change in walking capacity after MOSAIC
01	Male	65	White British	501	No improvement
02	Female	75	Mixed - Caribbean	347	large clinically meaningful improvement
03	Male	61	White British	474	No improvement
04	Female	68	White British	307	large clinically meaningful improvement
05	Male	65	Caribbean	396	large clinically meaningful improvement
06	Female	67	Indian	491	No improvement
07	Male	54	White & Black Caribbean	423	large clinically meaningful improvement
08	Female	68	White British	324	large clinically meaningful improvement
09	Male	80	Caribbean	366	large clinically meaningful improvement
10	Male	57	Irish	462	minimal improvement
11	Male	75	White British	398	large clinically meaningful improvement
12	Male	67	White British	244	large clinically meaningful improvement
13	Male	68	Irish	419	No improvement
14	Male	74	White British	386	large clinically meaningful improvement
15	Male	60	White British	469	large clinically meaningful improvement
16	Male	74	White British	384	large clinically meaningful improvement
17	Female	71	Irish	335	large clinically meaningful improvement
18	Male	59	White British	343	large clinically meaningful improvement
19	Female	57	Caribbean	274	Small clinically meaningful improvement
20	Male	69	White British	356	large clinically meaningful improvement

maximum walking distance in 6 min, measured during 6-minute walk test at trial baseline assessment
*self-reported ethnic group.
No improvement = ≤ 0 m
Minimal improvement = 0.1–7.9 m
Small clinically meaningful change in walking capacity = 8 – 20 m
Large clinically meaning change in walking capacity ≥ 20 m

and mode of delivery gave interviewees time to learn, reflect on, or refresh their knowledge, about the causes, and consequences of their condition and the role of walking exercise as a treatment. Consequently, many interviewees were willing to try this new approach.

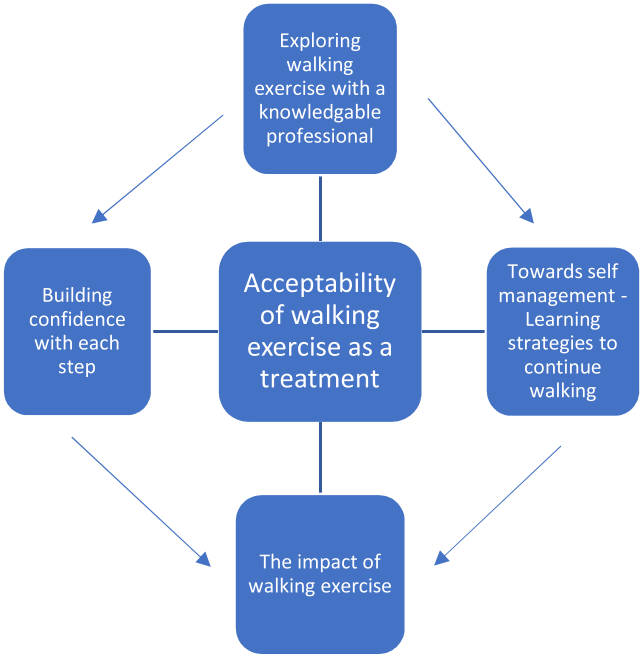

Fig. 1. Participants' experiences and acceptability of a home-based walking exercise behaviour-change intervention (MOtivating Structure walking Activity in people with Intermittent Claudication (MOSAIC).

"I was quite interested when they said it's a walking thing and it's sort of new … and I thought well, they might know a bit more, that thing might teach me a bit more, which it seems to have" (Interviewee 5, Male, 65 years)

The physiotherapists were considered knowledgeable and encouraging and this was crucial to the interviewees' experience of MOSAIC and walking exercise.

"I don't know, it was like [the physiotherapist] pushed a switch in my brain or something, it was just that one-to-one interaction, I found it, I don't know, I found it so helpful" (Interviewee 8, Female, 68 years)

Interviewees appreciated the individual, person-centred consultations and how the physiotherapists elicited their reflections about their goals and incorporating walking exercise into their lives. This encouraged interviewees to try walking exercise treatment.

"…it was about, …, what would be your ultimate goal, and it was to get up to my local park, because I used to love doing that, going around the flower gardens, doing bird-watching and seeing the occasional fox…, so to be able to do that again was my ultimate dream really" (Interviewee 8, Female, 68 years)

After the first consultation, most interviewees understood the intervention aims and content and recognised why

Table 2
Participants' experiences of a home-based walking exercise behaviour change intervention interpreted using the Theoretical Framework of Acceptability.

Construct	Definition	Theme	Summary of findings
Affective attitude	How an individual feels about the intervention and walking exercise after participating in the intervention	Exploring walking exercise with a knowledgeable professional The impact of walking exercise	Most interviewees valued the format, content and delivery of MOSAIC and engaged in walking exercise as a treatment. Interviewees experienced the impact of walking exercise on their walking capacity and their lives
Burden	The amount of effort that was required to attend the intervention consultations and complete planned walking exercise	Exploring walking exercise with a knowledgeable professional Building confidence with each step The impact of walking exercise	Intervention consultations and walking exercise were mostly regarded as low burden because the intervention had short, infrequent consultations that required only two appointments at the healthcare facility. Telephone follow-ups were regarded as practical and timesaving. Walking exercise was easily integrated into everyday life.
Intervention coherence	The extent to which an individual understands the aims and contents of the intervention and how it works	Exploring walking exercise with a knowledgeable professional Building confidence with each step	With the guidance from a physiotherapist MOSAIC and walking exercise made sense to most interviewees. They developed skills to monitor and manage their walking exercise independently.
Opportunity Costs	The extent which an individual must forgo or give up other opportunities/resources to complete the intervention and walking exercise	Towards self-management - Learning strategies to continue walking exercise	MOSAIC had short, infrequent consultations that required only two appointments at the healthcare facility. Walking exercise was easily integrated into everyday life and interviewees had to give little up to participate.
Perceived effectiveness	Anticipated and experienced extent to which the intervention and walking exercise is likely to/has achieved its aims	Towards self-management - Learning strategies to continue walking exercise The impact of walking exercise	Most interviewees perceived the intervention as effective. They developed skills to self-manage their condition, progress their walking exercise independently and embed walking exercise into their lives.
Self-efficacy	The individual's confidence of their ability to participate in the intervention and perform walking exercise	Building confidence with each step	Interviewees developed confidence in their ability to manage their condition and to develop and complete their walking exercise plans.

they needed to start walking exercise independently. They found this new approach 'refreshing'.

"I found it refreshing that somebody's [the physiotherapist] taking interest, I'm not just on me own …., I found it very helpful. And encouraging to get on with doing it," (Interviewee 20, Male, 69 years)

However, some interviewees perceived that their physiotherapist did not tailor MOSAIC to their needs and that the intervention was not valuable. Some of these interviewees did not attend all MOSAIC consultations.

"Basically, she was running to a script and she couldn't deviate from it… I was wasting my time" (Interviewee 12, Male, 67 years)

Theme 2. Building confidence with each step.

This theme described how MOSAIC helped interviewees develop confidence to plan and complete their walking exercise. Most interviewees valued the opportunity to agree specific walking plans that accommodated their lifestyles. As their confidence increased, they were able to attempt new walking routes, manage more challenging terrains and complete new activities. This was beyond some interviewees' expectations and gave them a sense of personal accomplishment.

"I can now attempt walks that I would never have even considered before just because the blocks of both mental and physical have now been lifted … yes, I have to stop, I have to have a rest but 2 years ago I wouldn't have even thought about doing that" (Interviewee 7, Male, 54 years)

Interviewees integrated walking exercise into other activities (e.g., visiting places familiar, such as local parks), and this increased their enjoyment, sense of fulfilment and commitment to walking exercise. Some interviewees completed their walking exercise with family, or other supportive social contacts. This provided interviewees with companionship, motivation or acted as a distraction from their leg pain during walking. As their walking capacity and confidence improved, they no longer regarded it as chore.

"I find if I'm walking with someone, I usually go out with my partner, and it distracts me you know, it doesn't become, it's not a chore anymore!" (*Interviewee 14, Male, 74 years*)

Walking with other people provided some interviewees with the opportunity to talk about their walking difficulties, which they had previously masked either due to embarrassment or

lack of confidence or opportunity to talk about their condition and symptoms.

"…I didn't even tell me children, … they kept saying, oh come on Dad, you're slowing up, you know, when I was walking out with them, they didn't understand why I kept stopping and that. But after that I had the confidence to tell them, I said look, I've got a problem with walking, so I sort of opened up to 'em" (*Interviewee 20, Male, 69 years*)

A few interviewees had limited social support and, at times, found their motivation to complete their walking exercise waned. Despite this, most continued with their walking exercise but observed that long-term commitment to walking exercise was challenging.

"After a bit, when you talk to her [the physiotherapist] and you tell her everything you think you're doing it's then when you are at home on your own it's lacking, a bit of get up and go" (Interviewee 15, Male, 60 years)

Theme 3. Towards self-management – Learning strategies to continue walking exercise.

This theme described how MOSAIC helped interviewees develop their own strategies to monitor their progress, adapt their walking exercise plans and sustain their walking exercise. Supported by the physiotherapist, interviewees learned to use the pedometer and shifted towards self-management. This helped interviewees recognise their walking achievements, chart their progress, and motivated them to complete or exceed their walking plans. Many interviewees set themselves ambitious walking targets using the pedometer as they learned how to safely extend their walking exercise despite experiencing leg pain.

"…[the physiotherapist] gave me a pedometer, which I still wear all the time, and I thought I want to do more steps than I've done today tomorrow, and then I wanted to do more steps the next day, and I wanted, it's like I was beating myself every time" (Interviewee 8, Female, 68 years)

A few interviewees did not to use the pedometers provided and relied on environmental markers in the local area such as benches or trees to measure their walking distance instead. Other people used mobile phone applications to help monitor their walking:

"I'm still taking a note of what I do during the day, I always wear the pedometer. And I have a Fitbit as well which goes into a bit more detail about how much activity you've done in the past one hour and that kind of thing" (Interviewee 14, Male, 74 years)

Towards the end of MOSAIC, the consultations were less frequent. Interviewees considered the telephone consultations useful, practical and timesaving. One interviewee commented that the telephone calls were:

"…pretty similar to when I went up to see her [the physiotherapist], it just meant I didn't have to travel which was quite good. …, we just went through similar things over the phone as we did with face-to-face" (Interviewee 16, Male, 74 years)

Each consultation built on previous learning and consultations, and interviewees were encouraged and reassured because they could share walking experiences with their physiotherapist, such as overcoming social or environmental obstacles (e.g., caring responsibilities, adverse weather conditions or steep slopes).

"*I have a hill that I have to go up to get home so after a day it can sometimes be quite challenging, sometimes quite disheartening.*" (*Interviewee 7, Male, 54 years*)

MOSAIC helped interviewees consider alternative approaches to immutable walking challenges such as bad weather and poor walking environments. Some interviewees compensated for walking exercise that they missed by walking at another time or location. This demonstrated their understanding of the need and their commitment to maintain their walking.

"When I don't get the chance to walk outside, I go in shopping centres … I go any shopping centre where I can walk. And so yeah, I would make it up if I, you know, if I don't get a chance to walk outside" (Interviewee 6, Female, 67, no improvement)

The flexibility offered by MOSAIC enabled the interviewees to tailor it to their own preferences. For example, most interviewees did not use the exercise diary provided but identified other methods to document their walking instead (e.g., using phone apps, personal diaries).

"*I have only got a tiny little diary, so I'm going to get a bigger one next year. …. I always put the steps in, every day*" (*Interviewee 8, Female, 68 years*)

Theme 4. The impact of walking exercise.

This theme captured the impact of MOSAIC and walking exercise. After MOSAIC, many interviewees could walk further and with less pain. They were able to expand their lifestyle. Interviewees observed that their mood and outlook improved, and they had a sense of pride about their progress.

"It's just being so more active, my total outlook has changed, I've become an 'I can, not an I can't', and 'I will, as opposed I won't'. It's just, it's massive, I feel happier in myself, I'm more motivated around the house, get out in the garden" (Interviewee 8, Female, 68 years)

Interviewees reported greater acceptance of and a sense of control over their symptoms. They attributed this to their increased knowledge of PAD and intermittent claudication and clear walking guidance that helped allay their fears about their walking leg pain and the uncertainty about the outcome of walking exercise. They transitioned from being fearful about the consequences of their condition and

walking exercise to acknowledging, understanding, and interpreting their leg pain differently so they were confident to extend their walking exercise.

"*I'm aware now what's caused it and why, so mentally, I can control that fear factor if you know what I mean? So, and walking has improved my life. From not being able to walk anywhere, from being frightened, to being able to be positive about it…*" (*Interviewee 4, Female, 68 years*)

Some interviewees acknowledged that walking exercise made them feel physically better and this altered their hopes for their future because they had a greater sense of well-being, fitness and quality of life.

"*…when you do walk you'll feel better in your body, and if your body is getting the exercise it requires, then it helps you, to move on*" (*Interviewee 9, Male, 80 years*)

These interviewees were grateful that walking exercise offered a simple, and convenient self-management opportunity. This shifted some interviewees attention from seeking pharmacological or surgical solutions that were either unavailable, unsuccessful or had short lived effects. One interviewee commented that "*it's given me my life back*" (Interviewee 8 Female, 68, large improvement).

However, some interviewees reported only marginal walking capacity and/or leg pain improvement. Whilst these interviewees regarded MOSAIC as acceptable and valuable because it helped them understand PAD and intermittent claudication, they considered MOSAIC was a short-term treatment but not a cure for their condition.

"*I haven't had a solution … because it probably will never be 100%, …, but the fact that it's got way more manageable, I know it will never be fixed, the only way even to be fixed might be in an operation or whatever, that wouldn't happen anyway, …, so yeah, I'm expecting to carry on with it*" (*Interviewee 10, Male, 57 years*)

Discussion

This study demonstrated that MOSAIC was perceived as an acceptable and positive experience by participants. The intervention format and content, underpinned by the patient-centred communication style used by the physiotherapists, helped most interviewees change their perceptions of walking exercise from a painful unhelpful activity to a positive treatment option. They developed confidence and skills to self-manage their symptoms and this led to improved walking capacity, and outlook. Interviewees' experiences and acceptability of MOSAIC were explained by four themes and one central overarching theme that aligned with six TFA constructs (Table 2).

MOSAIC allowed sufficient time for physiotherapists to foster a positive therapeutic alliance with participants and this was crucial to the acceptability of MOSAIC and walking exercise as a treatment (TFA: affective attitude). People tend to create their own beliefs about PAD based on their illness perception [26,27,34] and these affect their management of PAD and adherence to treatment [34,35]. MOSAIC helped interviewees to re-consider negative illness perceptions and beliefs about walking exercise treatment, acknowledge their values and priorities and align these with their walking exercise plans and behaviour (TFA: intervention coherence).

The MOSAIC trial findings lend support for the use of motivational interviewing alongside theory-based behaviour change techniques within exercise interventions for people with PAD [20]. The efficacy of motivational interviewing-based exercise behaviour-change interventions is mixed in people with PAD. One study found no significant difference in walking capacity in African American patients with PAD completing either a 6-month telephone delivered motivational interviewing intervention, a Patient-Centred Assessment and Counselling for Exercise programme or a control group [15]. In contrast, a 6-month telephone motivational interviewing intervention with embedded behaviour change techniques improved 6-minute walk compared to a mobile application in overweight adults with PAD [15,36]. Whilst neither of these previous interventions were explicitly based on psychological theory, the latter intervention [36] included evidence based techniques known to target exercise health behaviour change [37]. and may explain the differences in intervention effect between studies [20].

The role of social support was also crucial to the success of MOSAIC. Initially this was gained from the physiotherapist who provided new knowledge and guidance (informational support) but as the consultations became less frequent, interviewees developed confidence (TFA: self-efficacy) to complete their walking exercise independently. Perceived emotional and instrumental (practical) support was obtained from family or friends who helped reduce the perceived burden of regular walking exercise (TFA: burden), whilst supporting participants as they developed confidence to increase their walking. Strong emphasis on self-reliance, personal achievement, and attentive responses from family are associated with better patient outcomes [38] and were fostered by MOSAIC. Interviewees with limited social support considered this a barrier to starting new, potentially ambitious, home-based walking and alternative ways to support these participants are needed. Prior to implementation, adaptations to MOSAIC such as additional, optional physiotherapist consultations, longer follow-up or frequent support and feedback involving remote monitoring, like other successful home-based exercise interventions, may be needed to mitigate waning motivation and support adherence [10,11,15,43].

Despite the consultations containing patient-centred conversations, some interviewees' treatment expectations were not met (e.g., lack of supervised treadmill walking or feedback about physical improvements). Treatment

expectations are linked with acceptability of and satisfaction with physiotherapy and influences the outcome of treatment [39,40]. Providing more information about the intervention format and content prior to starting MOSAIC and further exploration of participant treatment expectations within the initial MOSAIC consultations may enhance acceptability, treatment outcomes and adoption.

The findings of this qualitative study support the results of our trial and provide insights into the elements that may support successful adoption. MOSAIC successfully targeted the modifiable factors of walking exercise behaviour [9] and was perceived as effective, and feasible to complete [20] (TFA: perceived effectiveness). MOSAIC was perceived as an acceptable, safe, low-burden intervention that made sense to most interviewees (TFA: intervention coherence). It addressed the practical barriers to participation in supervised exercise therapy such as time constraints (e.g., short, infrequent consultations that required only two in-person appointments (TFA: Burden)) and walking exercise plans were adapted so they were easily integrated in people's lives (TFA: opportunity costs). The simple nature of MOSAIC and the opportunity for patients to gain a broader perspective on PAD management and try a new sustainable, self-management approach was acceptable and appealing and this may drive treatment uptake. With appropriate therapist training to ensure fidelity of delivery, MOSAIC could easily be implemented into routine practice to address a gap in service provision and ease capacity issues and pressures on the use of conventional treatment approaches, such as supervised exercise therapy. This will increase the accessibility of an evidence-based treatment for people with PAD. Future practice could draw on the core elements of MOSAIC as a framework to support exercise behaviour change in other painful long term conditions.

Limitations of this study include the duration between the final research appointment and interview as some interviewees conflated the intervention with the research processes or found it hard to recall intervention details. While participants with a range of baseline walking capacities and change in walking were interviewed, most interviewees completed all MOSAIC consultations and only 25% were from Black, African and Caribbean heritage communities despite a higher prevalence of PAD in people from Black, African and Caribbean heritage communities than other ethnicities [41]. All interviewees were trial participants enrolled from London and Southeast England and the trial excluded people with some equity factors such as severe disease and some comorbidities [42]. Eligibility criteria are defined to optimise trial design and participant safety so, similar to other exercise trials, our sample does not represent the overall population with PAD [42]. The views of a greater diversity of people with PAD need to be explored more fully prior to widespread implementation of MOSAIC.

Conclusions

MOSAIC was perceived as an acceptable, effective, and low burden intervention. Physiotherapists were regarded as knowledgeable and supportive professionals who helped participants develop their understanding and confidence to self-manage PAD and intermittent claudication. As confidence and walking capacity improved participants expanded their activities and outlook. MOSAIC is an acceptable intervention that may facilitate adoption of and access to exercise for people with PAD [42].

Ethical approval: The National Research Ethics Committee London–Bloomsbury, United Kingdom (17/LO/0568).

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Declaration of Competing interest

All authors declare no conflicts of interest.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.physio.2023.09.002.

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