

Abstract

Background: Older adults are at increased risk of falls due to ageing, decreased muscle strength and impaired balance. Clinical trials have demonstrated the efficacy and effectiveness of the Falls Management Exercise (FaME) programme in improving functioning and preventing falls. However, programme completion is often low, impacting the potential benefits of FaME.

Objective: To explore the barriers and facilitators for participation and completion of the FaME programme from an instructor and participant perspective.

Methods: Semi-structured interviews were conducted with 20 FaME users and 7 Postural Stability Instructors from the East Midlands region of England, UK. Interviews were conducted using a topic guide and explored their views of the programme, intended benefits, reasons for participating, instructor's approach and venue facilities. Data were transcribed verbatim and analysed using thematic analysis. Written informed consent was obtained from all participants and instructors.

Results: Common themes identified by participants and instructors for adherence related to perceived health benefits, psychological wellbeing, intervention characteristics, cost, instructors' qualities, opportunity to socialise, venue accessibility and facilities. Further factors such as maintaining independence, discipline, relationship with peers and caring responsibilities influenced participants' engagement with the programme. Instructor factors such as progression were also reported as important predictors.

Conclusions: Instructor and participant factors influence uptake, attendance and adherence of FaME. The findings from this study can inform the development and improvement of additional falls prevention programmes. It can also guide marketing strategies to promote uptake of exercise-based falls prevention programmes among older adults.

Introduction

Falls are a major cause of morbidity and mortality among older adults worldwide [1]. Within the UK, around 30% of adults aged 65 and over and 50% aged 80 and over experience at least one fall annually [2]. These are associated with injury, loss of confidence and independence, and can lead to long-lasting physical and mental disability. The National Institute for Health and Care Excellence and World Health Organization emphasise the importance of implementing evidence-based falls prevention programmes in the form of individually tailored strength and balance interventions [2,3]. Previous research has shown that overall adherence to these programmes in trials can be low [4].

The Falls Management Exercise (FaME) programme is a structured community-based exercise programme involving a combination of supervised and home-based exercises delivered by Postural Stability Instructors (PSIs). The main areas of focus are to improve strength, balance, flexibility, functional floor and gait skills. Recent studies have demonstrated the efficacy [5] and real-world effectiveness of FaME in older adults for preventing falls [6]. However, the proportion of participants completing the programme is quite low [5,6,7] at around 60% [5,6]. 1 in 5 participants do not complete the programme due to poor health and less than 25% make the expected strength training progress [8]. Therefore, understanding factors that encourage older adults to participate in and adhere to FaME could help improve programme effectiveness. Previous studies have shown that older adults' attitudes, expectations and self-efficacy have a strong influence on their decision to participate and engage with exercise classes [9,10]. Whilst there is some evidence that physical improvement, discipline and social interaction are important participant-level predictors of uptake and adherence [11], less is known about what instructors consider important in fostering uptake and adherence and how this triangulates with participants' views. Therefore, this study aimed to explore the barriers and facilitators to participation and completion of FaME from a participant and instructor perspective.

Methods

Study design

This study reports the qualitative analysis from a mixed-methods implementation of FaME across ten local authorities within the East Midlands region of England. Semi-structured face-to-face interviews were conducted with FaME participants towards the end of the 24-week programme. PSIs were interviewed at two points: early in the implementation phase and at the end of the programme. A purposive sampling strategy was used and recruitment continued until the planned sample size was achieved. See full research protocol for further details [12].

Data collection and analysis

Interviews were conducted by NL who is experienced in qualitative methods. Interviews took place in participants' homes or a convenient community location (participants and instructors) between June 2017 and February 2018. A topic guide was used to explore their views of the programme, reasons for participating and plans for physical activity outside of the programme (available in supplementary material). Similarly, instructor interviews explored their experience of delivering FaME and how they would change the programme to improve participant outcomes. Interviews lasted a maximum of 70 minutes, were audio-recorded and transcribed verbatim. Written informed consent was obtained prior to the interview and all data were anonymised prior to analysis.

Data were analysed using thematic analysis based on the steps described by Braun et al, at a latent level [13]. This involved initial familiarisation followed by the generation of initial codes using an open-coding framework in Microsoft Excel. Emerging codes were compared within and across interviews and then sorted into sub-themes. Summary matrices were created to demonstrate the sub-themes and overarching themes with illustrative quotes. A series of meetings were conducted to discuss all the themes and sub-themes as well as any similarities, differences and connections between them. It was not possible to discuss final themes with participants as recommended in recent guidance [14]. Methodological rigour was reinforced through regular supervision of the lead researcher during all stages of the research process.

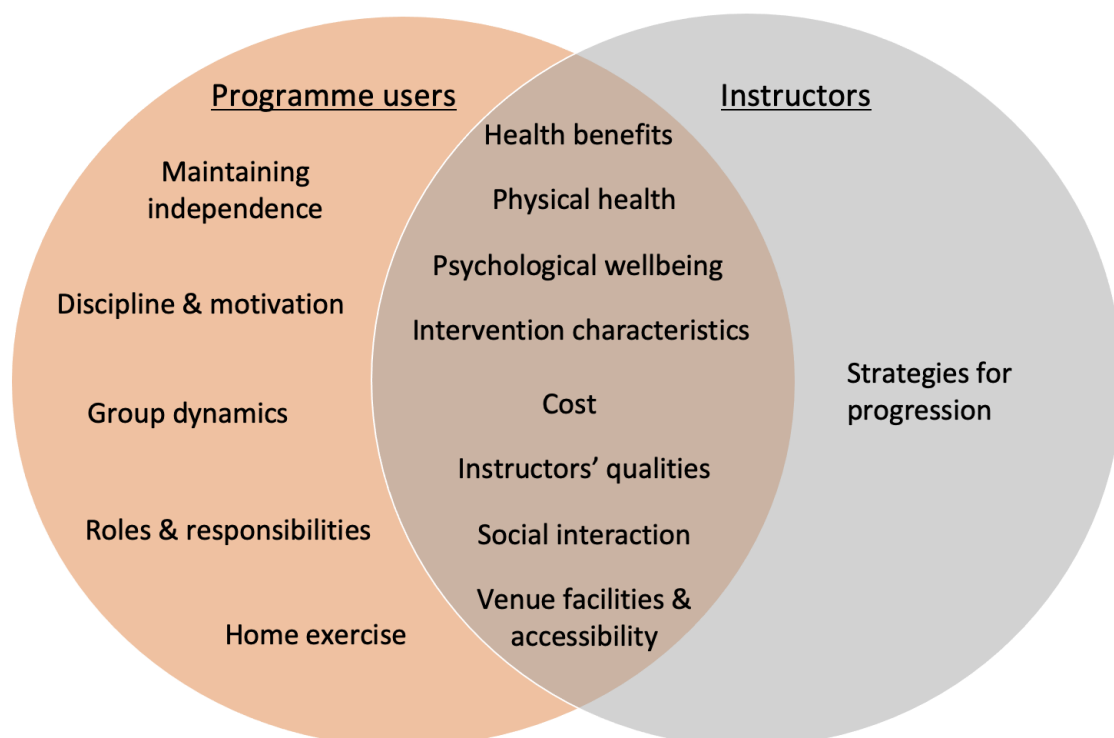
Ethical approval

This study received ethics approval from the London – Chelsea Research Ethics Committee (reference 16/LO/0396).

Results

A total of 20 FaME participants (4 males and 16 females) and 7 PSIs were interviewed across a range of delivery sites. PSIs had varying levels of experience and backgrounds. Programmes were delivered in community halls, sheltered/supported accommodation and leisure centres and most districts required participants to pay a small fee to attend. We identified several factors that influenced users' adherence and instructors' delivery of FaME (Figure 1). Further illustrative quotes are presented in the supplementary material.

Figure 1. Participant and Postural Stability Instructors' perspectives on FaME participation and adherence



Findings: common factors

Eight subthemes were identified by participants and PSIs as important contributors to their experience of FaME namely: health benefits, physical health, psychological wellbeing, intervention characteristics, cost, instructors' qualities, social interaction, venue facilities & accessibility.

Health benefits

Participants described a range of health benefits from participation including improvements in their mobility and general fitness. They also reported increased awareness of different muscle groups and valued the opportunity to exercise different areas of their body. Additionally, they noted improvements in their overall strength and balance which would aid in the prevention of future falls. All participants felt that regardless of their current ability, the classes served to either maintain or improve their health. These improvements were also noted by many of the PSIs.

"I think it is an absolutely amazing course, what I have seen people do, is stunning you know particularly the really frail people that I didn't think we were ever going to get out of the chair ... there was a guy this morning he didn't get out of the chair for 18 weeks ... he spent the whole course on his feet today and then he went down to both knees, I mean it was just incredible." (Instructor (SP001 female) Leicestershire)

Some older adults described higher energy levels and being able to see their progress as key motivators for continued participation in the programme.

"My benefits are feeling well, I run fast now, I walk fast and I am not feeling lazy." (Programme user (PU016) female Derby)

Physical health

Deterioration in physical health was commonly reported as a barrier to adherence by both PSIs and participants. Older adults, particularly those with pre-existing joint problems and pain syndromes, described tiredness, pain and lower levels of energy following the classes.

“When you feel worse like the day after you have done these exercises I think you are better off not doing them because probably you know you can aggravate things rather than them being good for you.” (Programme user (PU006) female Leicestershire)

“I did have somebody fall and break their hip half way through sadly ... then I had somebody with breast cancer ... and then just a couple of people said it you know they felt worse, a bit achy afterwards another man with a neurological condition said he just felt dizzy and it wasn’t really helping him ... so yes so a variety of reasons why people dropped out.” (Instructor (SP004) female Leicestershire)

Psychological wellbeing

Most participants described the classes as enjoyable and pleasurable which encouraged them to attend regularly. They viewed the programme as an opportunity to leave the house and reduce isolation.

“I think as a community it is ... especially for older people, a lot of older people can’t get out at all, and to be able to go there with other ... and see other people not quite being as active as yourself and improving and I find that beneficial and it is nice and we just chat.” (Programme user (PU002) female Leicestershire)

Many participants reported a large boost in their self-confidence as a result of FaME. They felt that the programme gave them a sense of purpose and enabled them to learn techniques so they could independently get up in the event of a fall.

“I would say if anything else it builds up my confidence because I did have a couple of falls. And as I say when you’re on your own, if you have a fall ... it sort of brings you down then. You know what is going to happen if I can’t get up? I was able to get up yes, but this gives you a better idea of how to get up.” (Programme user (PU017) male Leicestershire)

These views were shared by the instructors. Some PSIs specifically reported that participants were exploring alternative ways to maintain their physical activity levels after completion as a result of the increase in their confidence from participating in the programme.

“I know that with some people their confidence is being increased and then they are kind of looking around at what else in the leisure centre and they are thinking well I could probably give that a stab.”
(Instructor (SP001) female Leicestershire)

Intervention characteristics

Participants and PSIs felt that the exercises were adaptable and tailorable to individual needs; and alternative exercises were available if the core exercises were too difficult.

“Well it is an enjoyable class, and she started off quite slowly with simple exercises and she gradually introduces one or two more exercises, but we can try or not, she leaves it entirely to what we’re comfortable with so I find it very, very enjoyable.” (Programme user (PU008) female Leicestershire)

However, some PSIs also reported the complexities of delivering FaME to individuals of varying ability. They felt that in larger classes where there was a substantial variation in fitness levels, it was difficult to monitor all participants at the same time. They suggested that having an additional instructor present in these circumstances would be helpful.

“There is [are] people that still struggle with getting down, confidence wise, which is normal, because obviously people are at different ability levels and what they can do and what they can’t do, I think that is where the second person who is working alongside me helps a massive part because it is difficult to deal with two different exercises going on at once.” (Instructor (SP011) male Derby)

Cost

All participants and PSIs commented on the low-cost and affordability of the classes. Participants also expressed that even if the price increased, it would not be a barrier to attendance.

“Well I thought it was cheap and easily manageable and [instructor] has indicated that if the course goes on that the charge will probably go up, she wasn’t quite sure how much but she mentioned something like either £2.50 or £3, which I think is still reasonable and it wouldn’t put me off.”
(Programme user (PU002) female Leicestershire)

“I wanted it free to start with because I thought ... if we struggle to get people it would make it more attractive but in the end we decided let’s go for £1.50 to cover some of the room hire ... I mean it was a bargain really getting a class and tea and coffee and a biscuit for £1.50 ... we have had people comment you know we would be happy to pay more.” (Instructor (SP004) Leicestershire)

Instructors’ qualities

Positive instructor qualities were described as a motivator for continued attendance by all FaME users. Participants reported that PSIs were friendly, enthusiastic and encouraging individuals who would make exercise fun. Participants expressed that the PSIs enjoyed interacting with older adults and created a positive atmosphere.

“I think she is fantastic, we have had other teachers before and she fills you with enthusiasm and she does it herself and she makes it fun to do and nobody is frightened of having a go and she doesn’t let anybody fail ... she is a brilliant teacher.” (Programme user (PU019) female Leicestershire)

“One thing is that the instructor is very friendly and develops a friendly spirit within the group. I think that is a big factor.” (Programme user (PU007) male Leicestershire)

Participants praised the support they received from the PSIs right from the start of the programme and also commented on their knowledge especially when they found the exercises challenging. Users expressed that in such cases they would always be offered an alternative which in turn served to promote their self-confidence. These views were corroborated by the PSIs.

“Some of the ladies’ dexterity is not very good and they have problems or their coordination is not good, she is very aware of that and instead of just going oh I will do this, she comes over and everybody else carry on but then she helps that individual.” (Programme user (PU002) female Leicestershire)

“Every week I say can you try and go a little bit further ... but I don’t force anything ... there was one lady ... she could see everyone around her getting down to the floor, she said I know I need to do this, I really want to do it so I have said well you know why don’t you have a try at home and then come and do it in the class and we will try and do it by the end of the 24 weeks.” (Instructor (SP001) female Leicestershire).

PSIs also discussed the strategies they employed to ensure all participants felt included and comfortable during the sessions.

“What I did was closer to the time we started doing the floor work, is whilst they were having tea and coffee just checked individually if anyone was too apprehensive about doing the floor work altogether or all at the same time so I sort of staggered it ... made sure people didn’t get down individually so it wasn’t embarrassing for them ... I mean I felt like I was inclusive and ... I will always say that if people are a bit tired or they’re not feeling great that they are welcome to sit down.” (Instructor (SP004) female Leicestershire)

Social interaction

All participants and PSIs expressed the importance of social interaction and felt that FaME provided them an opportunity to connect with individuals in their neighbourhood whom they had not met before.

“I just really have enjoyed meeting people I wouldn’t have known, and especially having moved down here from one of the villages, it has been very good.” (Programme user (PU013) female Leicestershire)

“I was only given an hour to actually run the class but I have managed to sneak in half an hour of social activity afterwards ... after the hour we all go through to the café and we sit there and we have a cup of tea and a slice of cake and a chat and that is a really important element of it ... I think the meeting at the end works really well because we have noticed over the course of the programme that people have come out of their shells a bit more and you know a bit more willing to sit and have a chat which they wouldn’t do necessarily at the beginning.” (Instructor (SP001) female Leicestershire)

Participants explained that they experienced a sense of collective togetherness and were able to share experiences with one another which encouraged them to continue attending. Additionally, users from localities where there was not an opportunity to socialise after the class commented on the potential for socialising to promote attendance.

“There were certainly people that started and haven’t carried on which I think if we had the time to maybe chat about it we might have you know found out why or what. I think there was the intention

to have it for an hour and a half because it would be an hour for the class and then there would be that opportunity to have the social element so people could talk so I am not sure why that didn't happen.”
(Programme user (PU001) female Leicestershire)

Venue facilities & accessibility

The location of the venue, availability of transport and parking were reported to be important influencers of adherence by both older adults and PSIs. Individuals who had their own car expressed that access to a car park would increase the likelihood of attendance. Some users particularly those that were dependent on public transport or car-sharing expressed that they struggled to maintain attendance.

“I have lost my car. And having to walk all of the way down there and I have to keep asking people for lifts and things like that, that is the problem with me. if they can get a voluntary bus like that and collect us up.” (Programme user (PU003) female Leicestershire)

Most participants were pleased with the facilities provided at the venue and felt it was fit for purpose. Some PSIs and older adults at certain localities reported issues with noise levels and temperature control which hindered attendance.

“The one thing about the leisure centre actually I have had to work quite hard to protect them because I really want it to be in a certain room ... that doesn't have really loud music or really loud groups going on next door, and I really want them to have certain chairs so it is going to be easy for them to get out ... I do have to sort of stand my ground quite a bit to protect that because so often with a leisure centre you have lots of things happening.” (Instructor (SP001) female Leicestershire)

“No matter when we go to the community ... there is no heat on. And that is not fair but you have to pay for the heat you see.” (Programme user (PU003) female Leicestershire)

Findings: participant factors

Participants reported five additional factors as key determinants of adherence: maintaining independence, discipline and motivation, group dynamics, roles & responsibilities, and home exercise.

Maintaining independence

Many older adults conveyed a strong desire to continue taking care of themselves and maintain independence for as long as possible. They repeatedly expressed that this was a significant motivating factor in the decision to participate in the FaME programme, especially for those who lived alone.

“I lived on my own for three years when my husband died, and I want to keep on my own as long as I can, I don’t want to go in a home or anything ... I want to look after myself as long as I can.”
(Programme user (PU003) female Leicestershire)

They believed that the more physically active they were, the longer they would be able to remain independent. Some also feared losing independence and becoming a burden on their family and social support network. They were afraid that this may result in them being relocated to a care home.

“I want to be healthy and happy; I don’t want to be dependent on people you know? So that is what it is all about being independent and doing things by yourself because my Mum was very active, towards the end she became totally disabled she was in a nursing home and I wasn’t happy about that you know so how I have seen her suffer.” (Programme user (PU009) female Leicestershire)

Discipline and motivation

Participants described the challenges of maintaining self-discipline particularly when exercising at home. They reported that attending a class at a set place and time where they could exercise alongside others was more encouraging and motivating.

“It is the discipline of making yourself do it, that is the problem, if you go somewhere and do it then particularly if it is something fresh or you see it as a bit of a challenge then you are more likely to carry on doing it.” (Programme user (PU001) female Leicestershire)

Group dynamics

Older adults expressed that exercising in a group was more enjoyable than exercising alone. They also reported that they were able to form a good relationship with other participants as they were from a similar age which further enhanced their experience of the programme.

“It is very, very friendly the group is good, the way they handle it, you know the way they...they get everybody to bond together to gel together, it is very, very good, really because we’re all much of the same age I suppose but everybody is from completely different backgrounds, you just feel as though you’re one, it really is good.” (Programme user (PU004) male Rutland)

Roles & responsibilities

Carer roles and responsibilities had a considerable impact on older adults’ exercise levels. Some reported that since retirement their primary aim has been to spend quality time with their partner and attending group-exercise classes would take away that time. Furthermore, some older adults had an additional role of being a carer and in such circumstances they felt nervous about leaving their partners alone in order to attend classes.

“With my husband being retired and we’re very busy people it is nice to have that time that I can spend with him like going out walking the dog or whatever, instead of doing the class so I may have carried on a bit longer but I probably would have given up eventually.” (Programme user (PU011) female Derby)

Home exercise

Home exercises were deemed to be beneficial and older adults reported that some of the exercises such as those for neck and hand could be easily incorporated into their daily routines.

“I say it is very logical sequence ... some of them you can even do when you’re sitting watching television or something like that so it has made me more aware of trying to do things and fit things in.” (Programme user (PU001) female Leicestershire)

Findings: instructor factors

Strategies for progression

All PSIs commented on the overall improvement and progression they witnessed in participants over the 24 weeks. They felt that observing participants' progress was rewarding.

"I am really amazed at the progress that these very frail people have made ... at the beginning I thought I just don't know how much they are going to advance ... but I mean to look at what you know the difference that it has made to some people, I certainly didn't expect that, it has blown me away."
(Instructor (SP001) female Leicestershire)

Some PSIs discussed the techniques they used to further challenge participants such as increasing the intensity of exercises through more repetitions and higher weights.

"As we have gone on I have added different exercises in that would challenge balance more, challenge strength more ... initially we had some Thera bands for their legs we had some arm weights, we had a little static cycle machine, a step and some balance cushions so the step has gone higher, we have got higher weights, different bands." (Instructor (SP007) female Leicestershire)

Discussion

Current evidence indicates that instructors play a key role in influencing older adults' uptake and adherence to exercise [10,15], and that older adults recognise the physical, mental and social benefits to exercise [7,11], but there has not been much triangulation of the instructor and participant perspectives for the same exercise programme. The emerging themes from older adults and the instructors were very similar and suggest that instructors' qualities, low cost, adaptations to exercises for inclusion, home exercises that can be incorporated into daily life, social interaction, improvements in health, mobility and psychological wellbeing are important factors promoting adherence to FaME. Lack of discipline and motivation, poor physical health, caring responsibilities all acted as barriers to maintenance. The location and venue facilities were identified as both a barrier and facilitator by participants and instructors.

Our findings resonate with previous literature on the barriers and facilitators to the implementation of falls-prevention exercise programmes among older adults but also reveal some new perspectives. Both older adults and the instructors emphasised the importance of the social element of the programme in providing an opportunity to connect with new people and share experiences. Recent research has also shown that dedicated time to socialise increases the likelihood of older adults registering for a falls-prevention programme [16]. Additionally, attending group exercise has shown to help older adults create a sense of belonging [17,18,19] and reduce feelings of loneliness [20].

The health and psychological benefits of physical activity were prominent themes. Previous research has also demonstrated that improving mobility and ability to complete everyday tasks [11], preventing deterioration and disability are strong motivating factors for older adults to engage in exercise [21,22,23]. Moreover, older adults become more aware of age-related declines in fitness levels which can translate into reduced levels of confidence, fear of injury, pain and overexertion and thus further hinder participation [21,24,25]. In our study, older adults and instructors strongly expressed the impact of FaME on their psychological wellbeing including enjoyment, boost in self-confidence and sense of accomplishment, which are consistent with other studies [21,25]. A key perspective offered by instructors in our study is the positive impact of witnessing participant progression on them (described as fulfilling and motivational). Instructors also discussed the strategies they employed to further challenge participants, maximise positive outcomes and attendance. Previous studies have identified that retention rates can be further amplified by reviewing participants' progress and giving them feedback on a regular basis [26] and that feeling the benefits of a programme are very important to older people [10,15].

Both participants and the instructors discussed the tailorability of FaME in meeting their individual needs. Previous studies have demonstrated greater reluctance to participation, higher drop-out rates and feelings of frustration when falls prevention programmes are not adapted to their needs [18,27,28]. However, a new finding is that instructors found it more difficult to offer alternatives and tailor exercises in larger groups of mixed abilities. They also valued a second instructor being involved, at least for key sessions such as introduction of floor-based exercises. This has previously been shown to improve safety and promote participant confidence [29]. Although conducting exercises in large mixed ability classes have been shown to potentially affect the fidelity of FaME [8], these challenges did not appear to have been noticed by programme users who felt the instructors were very good at offering alternatives to different people in their classes so all could remain involved.

The attitudes and personality of the instructor was cited as a key source of support and motivation by participants. The instructors also discussed ways in which they enhanced support to participants and fostered and maintained cohesion in the group. Other characteristics such as enthusiasm, approachability, friendliness, focus on creating a supportive environment and making participants feel welcome have been previously described as important in promoting uptake of physical activity amongst older adults [10,15,18,21]. In addition, instructors who are knowledgeable, recognise physical limitations in individuals and adapt exercises accordingly as demonstrated in our study can strengthen participants' self-efficacy [10,18,26,27,30].

Home-based exercise provides a practical choice for older adults and is the preferred choice in those who have recently fallen [9]. Many older adults in this study commented on the ease of incorporating the home-based exercise component of FaME into their daily routines. This ties in with participants reporting that home exercises were beneficial to their overall adherence to the programme. However, some participants were not offered home exercises to support the group sessions, or reminded of the importance of doing home exercises which was a key fidelity point for effectiveness that was regularly missed by PSIs [8]. However, some older people admit they lacked discipline and thus provision of more formalised exercises in a group-setting may be more suitable [30]. Lack of adherence to home-based falls prevention

exercises has been shown to reduce effectiveness of evidence-based exercise programmes [10,31] so this remains a challenge.

The location and appropriateness of venues and facilities was found to be both a barrier and an enabler. On the whole programme users were happy with the facilities but some had difficulties getting to the venues due to lack of public transportation or needing to find someone to give them a lift. This has been seen before in other studies with exercise adherence in older adults [18]. Although cost has previously been shown to be a barrier to engagement [18], in this study cost was less of an issue, perhaps as the participants valued and felt the benefits outweighed the costs.

Strengths and limitations

Our study reports the experiences of participants and instructors from a large implementation study to assess the real-world effectiveness of FaME. We adopted a rigorous approach to the analysis of data including coding by two independent researchers and all interviews being conducted by the same researcher to ensure consistency. We also had a large sample size which improves the generalisability of the findings. However, the study did have several limitations. Firstly, selection bias may have influenced the results as participants who were enthusiastic or had negative experiences may have more readily agreed to take part in the interviews. Furthermore, only four participants were men, possibly due in part to the greater tendency for women to participate in group exercise classes [32]. Delivery locations were not equally represented and the small number of men prevents exploration of differences in facilitators and barriers between genders and locations.

Conclusions and Recommendations

Overcoming barriers to falls prevention programmes is challenging. Our findings suggest that factors that encourage older adults to participate are: social interaction, improvements in physical and mental health, gains in confidence, supportive and friendly instructors and provision of low-cost classes that are tailored to their needs. The results also suggested that caring responsibilities, lack of discipline and motivation to exercise at home, ongoing or

worsening health issues and difficulties accessing the venue can hinder attendance. Instructors also found that delivering and adapting exercises in mixed ability classes is challenging but this was not reported by older adults.

It is clear that instructors play a crucial role in maintaining adherence and therefore it is vital to ensure that exercises are adaptable, enjoyable, and are delivered in a supportive and motivational environment for older adults. Furthermore, instructors should be aware of the barriers to attendance and take steps to minimise them where possible. Additionally, group exercise programmes can be more appealing to socially-orientated older adults. Therefore, a greater focus should be placed on marketing strategies. Highlighting positive attributes such as improved strength and functioning, preventing disability, social interaction and adaptability can improve awareness and uptake [18,22]. There should also be more emphasis on improving male participation. This can be done via word of mouth, strategic promotional placement in community centres, places of worship and other organisations [33], via healthcare professionals and by designing programmes that enable older adults to attend with their partners.

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