Title

Peer-led walking programme to increase physical activity in inactive older adults: 'Walk with Me' pilot RCT

Keywords

Physical activity; Walking, Pedometer, Peer Mentor, Older Adults, Feasibility Study, Pilot RCT

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Scientific Summary

Background

Physical activity is associated with a reduced risk of developing a range of chronic non-communicable diseases and with improved mental health in older adults. In addition, lower levels of physical activity are associated with poorer social health, such as increased social isolation and loneliness. Physical activity levels also decline with age. The percentage of the population that is 65 years or older is growing, which is associated with rising healthcare costs attributed to the associated increased prevalence of morbidity, disability and mortality, especially among older adults from socio-economically disadvantaged backgrounds. This suggests there is a need to develop effective interventions that promote active ageing.

Previous physical activity interventions for older adults have been effective, but many do not include the types of individuals who would benefit the most, such as low active groups and those living in socio-economically disadvantaged communities. Peer-led interventions are becoming increasingly common as they are relatively cheap and have been shown to be an effective way of encouraging behaviour change, including physical activity. Peer mentors are trained, nonprofessional individuals, who are similar to the target population (e.g., age and cultural background) and possess experiential knowledge of the target behaviour. However, there is a lack of research of the effectiveness of peer-led physical activity interventions for older adults living in socio-economically disadvantaged communities.

The aim of the study was to bridge the evidence gap by developing and testing the feasibility of delivering and evaluating a complex peer-led, multi-component physical activity intervention, derived from a socio-ecological model of health, in socio-economically disadvantaged community dwelling older adults.

Objectives

The objectives of the study were to:

1. determine the most efficient methods of recruitment to a peer-led physical activity intervention in older adults.
2. assess the resources needed for the development of a future definitive trial.
3. assess the feasibility of a RCT of a peer-led walking intervention in older adults in terms of rates of recruitment, retention and data completeness, the administration of outcomes and the acceptability of the intervention.
4. generate data to inform what sample size would be required in a definitive trial of a multilevel peer-led physical activity intervention, based on the variability in objective measurements of physical activity and recruitment and attrition rates.
5. measure the resource use associated with the intervention and estimate costs.
6. pilot the use of a health and social care service use instrument and summarise the resource use and costs per group.

Methods

Design: using behaviour change techniques identified from a rapid review of previous interventions and semi-structured interviews, a peer-led physical activity intervention was developed. A two-arm pilot RCT was conducted.

Physically inactive individuals, according to the General Practice Physical Activity Questionnaire aged 60-70 years, living in socio-economically disadvantaged communities in the South-Eastern and Northern Health and Social Care Trusts in Northern Ireland, were recruited through general practices and community organisations. Individuals who self-reported a recent history (within the last six months) of myocardial infarction or stroke, or physical limitations that would limit ability to participate in a walking programme were excluded.

'Walk with Me' Intervention: Following the collection of baseline outcomes, individuals were randomised to either an intervention or control group using computer generated random

numbers. The 12-week intervention was based on social cognitive theory and was comprised of three stages. Stage one (weeks 1-4) involved getting to know the peer mentor and setting initial pedometer step goals. Stage two comprised of setting short- and long-term physical activity goals and problem solving (weeks 5-8). Finally, stage three emphasised behaviour rehearsal and practice by walking regularly in a locally accessible physical activity environment and signposting participants to other activity programmes in their community to encourage them to maintain their activity (weeks 9-12). The intervention was delivered by trained volunteer peer mentors. Participants in the control group received an information booklet on active ageing. They did not receive any additional support to change their activity over the course of the research study.

Main outcome measures: Outcomes were assessed at baseline, post-intervention (12 weeks) and six months after baseline. The primary outcome was minutes of moderate and vigorous physical activity measured using an Actigraph GT3X+ accelerometer, worn for 7 days. In addition, physical and mental health and mental wellbeing were assessed using the Short-Form 12 Health Questionnaire and the Warwick-Edinburgh Mental Well-being Scale. Health-related quality of life was assessed using the EuroQol-5D-5L questionnaire. Social engagement was measured with the UCLA Loneliness Scale and the Lubben Social Network Scale. Physical activity and social activity self-efficacy, and physical activity and social activity outcome expectancies were also measured. Participants recorded their use of health care using a health and social care services resource use log, in order to pilot the use of the tool for a future definitive trial. The resource use associated with the planning, preparation and delivery of the intervention was collected prospectively.

Assessment of Feasibility: The feasibility of conducting a definitive trial was assessed as the ability to recruit participants and retain them in the study. The recruitment rate was assessed by calculating the total number recruited as a proportion of the pre-defined target of 60 participants, within the timeframe of the study. Attrition was measured as the proportion of participants that did not complete outcome measures at 6 months after baseline. Pre-determined thresholds of 60% and 30% were set for recruitment and retention rates to assess the feasibility of conducting a definitive trial. In addition, the completeness of return of the

primary outcome, unexplained adverse events and the views of participants and peer mentors were taken into account.

Results

Recruitment and retention: In total, 50 individuals were deemed eligible and entered the study. Therefore, 82% of the target sample size was recruited. At the end of the 12-week intervention period, seven participants had dropped out of the study. No further participants dropped out at six months, resulting in a retention rate at 12 weeks of 86% (43/50).

Participant Characteristics: Of the 50 participants, 24 were allocated to the intervention group and 26 were allocated to the control group. At baseline, the groups were similar in terms of activity levels and health status. The overall mean age of participants was 64.5 years. Participants were predominantly female (overall 66%).

Data completeness: At baseline, 48/50 (96%) of participants returned valid accelerometer data. The return of valid accelerometer data was similar at six months (40/43; 93%). Other outcomes were returned with a similar degree of completeness.

Change in outcomes: The study was not powered to assess effectiveness, therefore only descriptive statistics have been reported. There did appear to be an increase in moderate-to-vigorous physical activity at 12 weeks and 6 months in the intervention group (7.42±10.79 mins/day & 6.31±16.60 mins/day respectively), but a decrease in the control group (-8.02±24.41 mins/day) at 12 weeks and slight increase at 6 months (1.51±29.54 mins/day). One control group participant returned to work as a postman during the study. If his data are excluded from the analysis, the change in the control group at six months was -4.33±16.55 minutes of MVPA per day, resulting in a difference of differences between the groups of 10.64 mins of MVPA per day.

Mixed findings were found for other outcomes, with a high degree of variability. No adverse events related to the study were reported by participants.

Intervention Fidelity: Intervention fidelity was assessed through the use of weekly step diaries and checklists whereby both participants and mentors recorded the delivery of intervention components. All peer mentors (n=13) and 12 intervention participants returned data. Weekly step diaries were fully completed by both mentors and participants, for all 12 weeks. The fidelity checklists were not completed to the same extent. For the first three weeks, mentors and participants reported a high rate of delivery for intervention components (range 49% to 83%). From week six onwards, the rate of return of forms diminished.

Acceptability: Participants in the intervention reported very high rates of satisfaction with the intervention and the helpfulness of their peer mentor. They noted that the intervention was useful in establishing a physically active routine and that they were still active with their peer mentor even after the end of the programme. Some participants suggested that it may be helpful to add a walking group to the intervention and that they disliked having to complete so much paperwork.

Assessment of intervention costs: The total cost to deliver the intervention was £5055 and the mean cost per participant was £211. The main driver of costs was the trainer time input to peer mentor training and supervision.

Assessment of health service use and associated costs: Health service use was low for both groups, but total costs were lower (£68) in the intervention group. Feedback was generally positive for the health service use log, however some changes are required.

Changes for a definitive study

1. Participants were somewhat active and healthy, and more likely to be female. Recruitment methods need tailoring to recruit very inactive, less healthy individuals and males to a definitive trial.
2. Using GP practices to recruit participants is becoming increasingly complex, and we have identified a variety of approaches that can be used, including synchronising recruitment efforts with other activities in the practice, such as clinics and media outputs.

3. Participants in the control group expressed a desire for more than just a waitlist condition. Future peer-led interventions could consider using an attention matched control group, offering nutrition advice as well as physical activity.
4. The 'Walk with Me' intervention only included individuals aged 60-70 years. Feedback was received that inclusion criteria should be based on ability, without an upper age limit. We would therefore remove the upper age limit of both participants and peer mentors in a future definitive study.
5. The volume of self-reported outcomes needs to be reduced in order to reduce participant burden. This includes limiting the outcome measures to a single general health measure and removing the physical activity questionnaire. In addition, greater efforts will be required to encourage the return of data from those who discontinue the intervention but do not withdraw from the study, including the offer of telephone interviews to collect outcome data.
6. As participants expected to receive a heath check as part of the intervention we propose adding measures of blood pressure and body mass index.
7. To address the reported decline in fidelity of intervention delivery during the later stages of the intervention, during the ongoing support offered to mentors, emphasis should be placed on the importance of following the approach to goal setting as described in the programme manual and of recording the delivery of intervention components.
8. The exclusion criteria need to be widened to exclude those not in work at the start of the intervention but planning a return to work before the end of follow-up, to avoid the possibility of introducing bias in measured outcomes due to increased work-related physical activity.
9. The peer mentor training needs expanded to include a top-up training session half way through the intervention to reinforce the importance of taking a flexible approach with participants in terms of the timing and venue of meetings.

Conclusions

There is a lack of evidence of the effects of peer led walking programmes in older adults. The 'Walk with Me' intervention was acceptable to participants. A need to reduce the burden of self-reported outcomes and to address intervention fidelity in the later stages of the

intervention was identified. Quantitative and qualitative information suggested that it would be feasible and worthwhile to conduct a definitive trial.

Trial Registration

Current Controlled Trials ISRCTN23051918

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