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Delivering strength and balance exercise through primary care: The ProAct65+ experience

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The ProAct65+ research team

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I have no conflicts of interest to declare

Benefits of regular physical activity in later life

- Reduced risk of cardiovascular disease
- Improved muscle strength, coordination and balance
- Reduced risk of falls
- Reduced risk of osteoporosis and fractures
- Improved mood & wellbeing

Government target: at least 30 minutes/day of at least moderate intensity physical activity on five or more days per week

Department of Health. At least five a week: Evidence on the impact of physical activity and its relationship to health. A report from the Chief Medical Officer. London: Department of Health, 2004.

Kemmler at al. Effects of exercise on fracture reduction in older adults: a systematic review and meta-analysis. Osteoporos Int. 2013 Jul;24(7):1937-50.

Is promoting exercise in primary care effective?

- "Brief advice from a general practitioner supported by written materials had a moderate short term effect on physical activity"

Hillsdon M, Foster C, Naidoo B, Crombie H. The effectiveness of public health interventions for increasing physical activity among adults: a review of reviews. Evidence briefing, 1st ed, February 2004. NHS: Health Development Agency, 2004.

- "Considerable uncertainty remains as to the effectiveness of exercise referral schemes for increasing physical activity…or whether they are an efficient use of resources for sedentary people"

Pavey et al. Effect of exercise referral schemes in primary care on physical activity and improving health outcomes: systematic review and meta-analysis. BMJ 2011; 343

- "Most interventions to increase physical activity were cost-effective…walking, exercise groups, or brief exercise advice appeared to be more cost-effective"

Garrett S, Elley CR, Rose SB, O'Dea D, Lawton BA, Dowell AC. Are physical activity interventions in primary care and the community cost-effective? A systematic review of the evidence. Br J Gen Pract2011;61

ProAct65+ Trial

- Multicentre cluster-RCT
- 1200 people aged ≥ 65 from practices in London and Nottingham/Derby
- Compares two 24 week exercise programmes with usual care
- Outcomes:
  - 1º - Physical activity
  - 2º – Falls, fear of falling

Inclusion criteria

- Aged 65+
- Mobile at home (i.e. not chair or bed bound)
- Physically able to take part in a group exercise class
- Not receiving long term physiotherapy

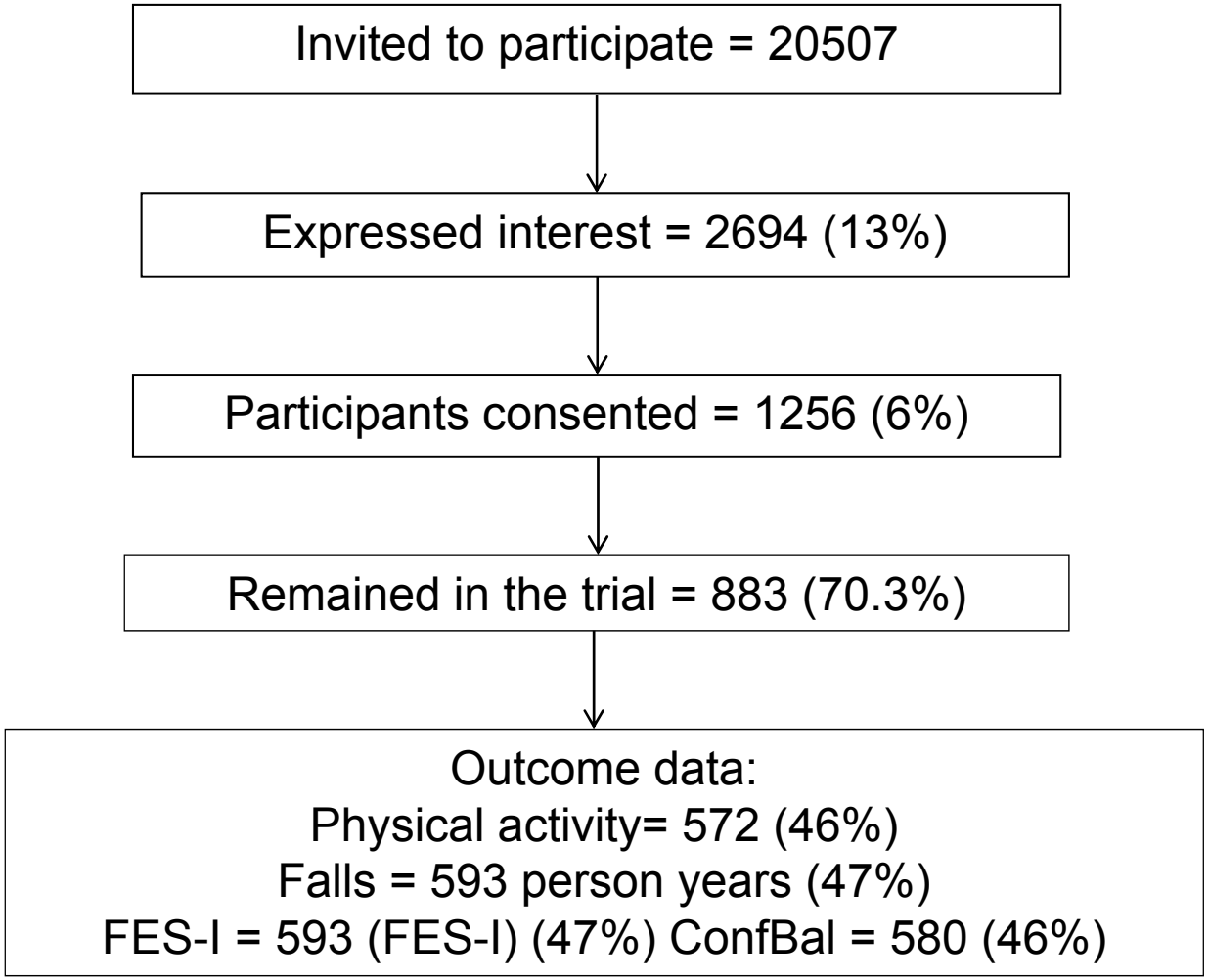
Exclusion criteria

- Frequent fallers
- Severe psychiatric disorders
- Uncontrolled medical problems
- Conditions requiring a specialist exercise programme
- Not living independently
- “Too fit”: already exercising at target level

Interventions (lasting 24 weeks)

FaME	OEP
•1 x 60 mins exercise class per week - taught by PSI, ≤15 participants/class	•3 x 30 mins home exercise sessions per week
• 2 x 30 mins home exercise sessions per week	•Trained peer mentor support – 2 home visits & 8 telephone calls
•Total 120 mins exercise per week, plus walking 2 x 30 mins	•Total 90 mins exercise per week, plus walking 2 x 30 mins

Recruitment & retention



Outcome measures

- Proportion reaching exercise target of ≥ 150 mins/week MVPA (CHAMPS self-completion postal questionnaire)
- Falls rate
  - Prospective daily falls diaries during intervention period
  - 3-monthly recall of falls in post-intervention period
- Balance confidence (ConfBal)
- Falls efficacy (short FES-I)

- All measured at:
  - End of intervention and 6,12, 18 and 24 months post intervention

Analysis

- Intention to treat analysis
- Comparisons between treatment arms (FaME vs UC, OEP vs UC)
- Linear, logistic and negative binomial random effects regression models to allow for clustering and multiple imputation for missing data
- Analyses adjusted for minimisation variables (practice size, location, deprivation score) and baseline values of outcome variables

Baseline Characteristics

- Average age 73 (range 65-94), 85% < 80 years
- 62% female; 13% non-white
- Median 105 minutes of MVPA/week
- 6% reported no physical activity
- 7% high risk of falls (FRAT ≥3)
- Median co-morbidities = 2, median medications = 4
- Well balanced between treatment arms

Intervention provision and adherence

- FaME:
  - All FaME classes fully staffed
  - 12 PSIs delivered classes with mean 5 participants/class
- OEP:
  - 38 PMs, providing mean 2 home visits and 6 phone contacts/participant
  - 53% London & 12% Nottingham/Derby participants had a PM
- Adherence: ≥75% of expected total exercise time
  - FaME (2880 mins) = 31%
  - OEP (2160 mins) = 46%

Results 1: physical activity

Time	Reached or exceeded MVPA target (≥ 150 mins/week)		
	FaME	OEP	UC
Baseline	136 (39.8)	150 (41.4)	150 (37.5)
Post intervention (PI)	121 (54.0)	96 (42.9)	109 (41.3)
12 months PI	95 (49.2)	79 (42.7)	84 (37.8)
OR (95% CI)	1.78 (1.11, 2.87)	1.17 (0.72, 1.92)	Ref group

FaME participants added **15 minutes of MVPA** per day (13-14/day with MI)

OEP participants added **4 minutes of MVPA** per day (3-4/day with MI)

Results 2: Falls

	Time	FaME	OEP	UC
Falls/person year	*During intervention*	0.81	0.80	0.87
Rate ratio (95% CI)	*During intervention*	0.91 (0.54, 1.52)	0.93 (0.64, 1.37)	Ref group
Falls/person year	*0-12 months PI*	0.57	0.54	0.71
Rate Ratio (95% CI)	*0-12 months PI*	0.74 (0.55, 0.99)	0.76 (0.53, 1.09)	Ref group
Rate Ratio (95% CI)	*13-18 months PI*	1.08 (0.68,1.75)	0.88 (0.52, 1.49)	Ref group

PI = post intervention

Results 3: Fear of falling (mean (SD))

	Time	FaME	OEP	UC
Short FES-I	*Baseline* *12 months PI*	8.99 (3.56) 9.20 (4.56)	8.89 (3.49) 9.09 (4.19)	9.36 (4.08) 8.94 (3.66)
Difference (95% CI)	*12 months PI*	0.10 (-0.65, 0.86)	0.05 (-0.74, 0.83)	Ref group
ConfBal	Baseline *12 months PI*	12.63 (3.98) 12.13 (3.65)	12.48 (3.76) 12.23 (3.71)	12.55 (3.93) 12.38 (4.05)
Difference (95% CI)	*12 months PI*	-0.53 (-1.00, -0.06)	-0.55 (-1.03, -0.06)	Ref group

Short FES-I scored between 7 and 28, low score indicates less concern about falling
ConfBal scored between 10 and 30, low score indicates higher confidence in maintaining balance

Conclusions

- In a community dwelling older population at low risk of falls and with low levels of fear of falling:
  - FaME increased self-reported MVPA and significantly reduced falls rate up to 12 months PI (not at 18 months PI)
  - Uncertainty around effect of OEP on falls rate and difficulties in recruiting PMs
  - FaME and OEP had small but significant effect on balance confidence but not falls efficacy

Full trial description

Iliffe S, Kendrick D, Morris R, Masud T, Gage H, Skelton D, Dinan S, Bowling A, Griffin M, Haworth D, Swanwick G, Carpenter H, Kumar A, Stevens Z, Gawler S, Barlow C, Cook J, Belcher C

Multi-centre cluster randomised trial comparing a community group exercise programme with home based exercise with usual care for people aged 65 and over in primary care

Health Technology Assessment 2014; 18(49)

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