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Potential efficacy, feasibility, acceptability and cost of very brief interventions for promoting physical activity in NHS Health Checks

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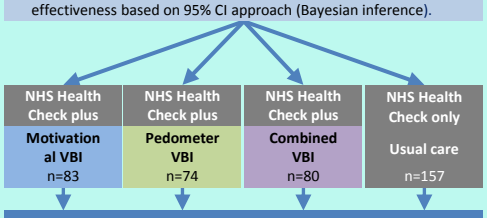
Background and Aim:

- Only 6% of men and 4% of women meet current physical activity recommendations (according to objective accelerometer data).[1]
- Very brief (less than 5 minutes) physical activity interventions in primary care could be relatively easy and inexpensive to implement on a large scale, and a small effect could translate into a significant public health benefit.
- There is uncertainty about the potential effectiveness, feasibility, acceptability and cost of very brief interventions (VBIs).
- We assessed the potential effectiveness, feasibility, acceptability and cost of three promising VBIs (identified as promising from development work and feasibility testing[2]) as part of NHS health checks and selected the most promising VBI for evaluation in a full-scale RCT.

Methods

394 participants in 8 primary care practices in England
N=394; age (mean, SD) = 53 (9.1) years; 59% female

- Allocation ratio 1:1:1:2
- Sample-size calculation: powered to give an estimate of potential effectiveness based on 95% CI approach (Bayesian inference).



One-month Follow-up

Measures

- **Potential effectiveness:** objective PA [ActiGraph GT3X+] and self-report PA [RPAQ v8].
- **Feasibility:** VBI fidelity & duration [consultation audio-recordings]
- **Acceptability:** Patient and practitioner interviews.
- **Cost:** Per-participant cost of materials and practitioner time.

Content of the three Very Brief Interventions

- Feedback on current physical activity (PA)
- Physical activity recommendations

Motivational VBI

Face-to-Face Discussion
- Benefits of increasing PA
- Importance and confidence
- Making a plan and keeping a diary

Motivational Booklet
- PA recommendations
- Benefits of increasing PA
- Importance and confidence
- Making a plan & keeping a diary
- Tips for increasing PA
- Tips for staying motivated
- Signposting

Pedometer VBI

Face-to-Face Discussion
- 10,000 steps recommendation
- How to use the pedometer
- Daily step goal and self-monitoring

Pedometer Booklet

Step Chart
- PA recommendations
- 10,000 steps recommendation
- How to use the pedometer
- Daily step goal and self-monitoring
- Tips for increasing steps

Combined VBI

Face-to-Face Discussion
- Combination of Motivational and Pedometer VBIs

Motivational Booklet

Step Chart
- Combination of Motivation and Pedometer VBIs

Results

Potential Effectiveness:

	Usual care n=111	Motivational VBI n=54		Pedometer VBI n=37		Combined VBI N=52	
	Mean (95% CI)	Mean (95% CI)	Comparison of means (95% CI)*	Mean 95% (CI)	Comparison of means (95% CI)*	Mean 95% CI	Comparison of means (95% CI)*
Objective PA Counts per minute	636 (597, 674)	656 (600, 712)	+20.3 (-45.0, +85.7)	659 (581, 738)	+23.5 (-51.3, +98.3)	632 (590, 675)	-3.1 (-69.3, +63.1)
Self-report PA Total PAEE (kJ/kg/day)	32.2 (28.2, 36.9)	39.2 (31.5, 48.9)	+21.7% (-2.9%, +52.5%)	32.2 (26.7, 38.8)	-0.2% (-22.4%, +28.4%)	33.0 (28.3, 38.5)	+2.4% (-18.3%, +28.3%)

PA = physical activity; PAEE = physical activity energy expenditure. *Relative to usual care

- Posterior probability of positive effect was estimated to be **73%** for both the Motivational and Pedometer VBIs, and 46% for the Combined VBI.

Feasibility:

- All VBIs delivered with moderate to good fidelity.
- Only Pedometer VBI was deliverable within 5 minutes.

Acceptability:

- All VBIs were acceptable to practitioners and participants.
- Practitioners preferred Pedometer VBI: brevity, ease of delivery and perceived participant response.
- Participants mentioned that VBIs for PA fitted well within health checks and reminded them of PA's importance.

Cost:

- Average cost of the VBIs ranged from £6.83 (Motivational) to £20.98 (Combined) per patient.
- Cost was higher for both the Pedometer and Combined VBIs (added cost of the pedometer).

Conclusions

- Very brief interventions for physical activity in primary care are inexpensive and acceptable, and can potentially increase physical activity.
- The Pedometer VBI was most promising in terms of potential effectiveness and feasibility.
- **VBI selected for further evaluation:** We selected the Pedometer VBI for further evaluation. A large-scale RCT[3] is assessing the effects on objectively measured physical activity, cost-effectiveness and estimated public health impact of the 'Step it Up' Pedometer intervention.

[1] Chaudhury M, Esliger D. Accelerometry in adults. In: Craig R, Mindell J, Hirani V (Eds), Health Survey for England 2008: Physical activity and fitness, 1. National Centre for Social Research, London, pp.61-88.
[2] Pears S, Morton K, Bijker M, Sutton S, Hardeman W. Development and feasibility study of very brief interventions for physical activity in primary care. BMC Public Health.2015; 15:333.
[3] Current Controlled Trials ISRCTN 72691150. The full trial protocol can be accessed at: http://www.phpc.cam.ac.uk/pcu/files/2011/04/The-VBI-Trial-Protocol-v-4.pdf

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UEA University of East Anglia · King's College London · MRC Epidemiology Unit · NHS Cambridgeshire and Peterborough Clinical Commissioning Group · VBI Very Brief Interventions

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