Very brief interventions to promote physical activity in primary care: A feasibility study

Funder: NIHR Programme Grant
Sponsors: University of Cambridge & Cambridgeshire & Peterborough CCG
Overview

- Aims and Overview of the VBI Programme / Background
- Aims and objectives of the feasibility study
- Phase 1: Feasibility of ‘very brief interventions’
- Phase 2: Feasibility RCT
Aim of the VBI Programme

- To develop and evaluate very brief interventions (VBIs) to increase physical activity that could be delivered by a practice nurse (or healthcare assistant) in an NHS Health Check or other primary care consultation.

- NHS Health Checks aim to lower risk of developing heart disease, stroke, diabetes and kidney disease (early detection / prevention).

- Patients aged 40-74, not currently diagnosed with vascular disease or with certain high risk factors (e.g. high blood pressure or cholesterol) already treated by medication.
Development work

WS1: Evidence synthesis
Estimate cost and effectiveness of promising VBIs from studies/reviews

WS2: Qualitative study
Integration of VBIs in NHS health checks

Expert Consultation

WS5: Health economics
Resource use of promising VBIs
Economic model of cost-effectiveness of VBIs

WS3: Phase 1 (Feasibility) & Phase 2 (Pilot Trial)

WS3 Feasibility Study
Develop and pilot materials
Test feasibility, acceptability, fidelity, potential efficacy and cost
Select best-best VBI

WS4 Main trial
Estimate cost and effectiveness of best-bet VBI

Substantive Trial
Aim and objectives of WS3

- **Aim:**
  To develop and test promising VBI’s in a feasibility study

- **Objectives:**
  1) To develop and pilot intervention protocols, training manual, intervention materials and quality assurance (fidelity) instruments (Phase 1)

  2) To test the fidelity, feasibility, acceptability and potential efficacy of the VBIs (Phase 2)

  3) To decide which single or combined VBI to take forward to evaluation in a substantive trial (WS4)
Phase 1: Feasibility, Fidelity, & Acceptability of the VBI’s
**Sources of Evidence**

- Systematic Literature Reviews (WS1)
- Scoping Review of BCTs (behaviour change techniques)
- Team Discussions
- Expert Consultations (practitioners, academics, end-users)
- WS2 (Qualitative study)

**Implication / Decisions**

**Goal Setting** → All VBIs (PA recommendations)

**Tailored advice** → All VBIs (advice tailored to current activity)

**Motivational Interviewing** → VBI 1 (Motivational); but good communication principles underlie delivery of all VBIs

**Info about Health Consequences** → VBI 1 (Motivational)

**Signposting** → VBI 1 (Motivational)

**Action Planning** → VBI 2 (Action Planning)

**Self-monitoring of behaviour** → VBI 3 (Pedometer) and VBI 4 (Diary)

**Pedometer** → VBI 3 (tool to self-monitor, strong evidence-base)

**Four VBIs**

**ALL:**
- Physical Activity Assessment
- PA recommendations
- Face-to-face discussion
- Written materials

**1. Motivational**
- Benefits of PA
- Ways of increasing PA
- Signposting, etc.

**2. Action Planning**
- Ways of increasing PA
- What, When, Where, and With Whom

**3. Pedometer**
- 10,000 steps
- Verbal instruction to record steps

**4. PA Diary**
- Ways of increasing PA
- Record daily activity
- Compare activity and goals
- Review/set new goals each week
Phase 1

4 VBIs

Measures

ALL:
- Physical Activity Assessment
- PA recommendations
- Face-to-face discussion
- Written materials

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- Benefits of PA
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Fidelity, Feasibility & Acceptability:
- Health Check Recordings
- Participant Interviews
- Practitioner Interviews

Phase 2

?
Phase 1: Study Design

- **Phase 1:** Prototype ‘very brief’ interventions were piloted in two practices (n=69) to assess fidelity, feasibility and acceptability of the interventions:
  - **Control Group:** No control group
  - **Intervention Groups:** Participants received one of four very brief interventions to increase physical activity:
    1. motivational intervention OR
    2. planning intervention OR
    3. pedometer intervention OR
    4. activity diary intervention
Phase 1- Data Collection

- Health checks were audio-recorded to examine **fidelity** to the intervention protocol and **feasibility** (e.g., were the VBI’s delivered as they should be? Did the VBI ‘fit’ into the health check?)

- Participants were interviewed after each health check to get feedback on **acceptability** of the interventions.

- Nurses/healthcare assistants provided feedback throughout the data collection period with regards to **feasibility** of delivery (within the health check) and also **acceptability** of delivering each VBI.

- Nurse/healthcare assistants also provided feedback about VBI training.
Phase 1 – The ‘Challenges’

- Poor initial recruitment of GP practices
- Low number of health checks per week
- Logistical issues of participant recruitment
- Communication challenges
- Health check – control condition?
- Unable to administer *PA Questionnaire* in waiting room.
Phase 1 Main Findings: HC Recordings

- Majority of VBI’s were completed in 5 minutes or less.

- Fidelity was quite high, but was dependent on the practitioner delivering the intervention.

- Nurses / HCAs often went into ‘telling mode’ rather than asking questions (e.g. ‘you could do ‘X’ to increase PA, rather than ‘how do you think you could increase your PA?’)

- NO patient wrote an Action Plan or Set a Goal (Activity Diary) during the intervention.
Phase 1 Main Findings: Patient Interviews

General Comments on all Very Brief Interventions:
- The HC was a good time to discuss PA.
- Completing the Physical Activity Assessment helped make them aware of how little PA they were doing / where they could make improvements.
- Simply having a discussion about PA was very useful.
- Being asked how they could improve their PA was appreciated.
- The majority were unaware of the PA recommendations.
- Most said they would use the materials given and intended to increase their PA.

Suggestions for Improvement:
- Provide a Follow-up consultation.
- Provide more ‘creative’ tips for how to increase PA.
Phase 1 Main Findings: Practitioner Interviews

General Comments on the VBIs:

- All VBIs fit comfortably into 5 minutes at the end of the Health Check.
- Despite initial misgivings, all VBIs were relatively easy to deliver and seemed to be acceptable to patients.
- Asking patients about / making patients aware of the PA recommendations was a good idea.
Phase 2: Feasibility RCT
Phase 1

**Measures**

**ALL:**
- Physical Activity Assessment
- PA recommendations
- Face-to-face discussion
- Written materials

**1. Motivational**
- Benefits of PA
- Ways of increasing PA
- Signposting, etc.

**2. Action Planning**
- Ways of increasing PA
- What When Where With-Whom

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- Ways of increasing PA
- Record daily activity
- Compare activity and goals
- Review/set new goals each week

**Fidelity, Feasibility & Acceptability:**
- Health Check Recordings
- Participant Interviews
- Practitioner Interviews

Phase 2

**3 VBIs (plus Control ‘Usual Care’)**

**ALL:**
- PA recommendations
- Face-to-face discussion
- Written materials

**1. Motivational**
- Benefits of PA
- Ways of Increasing PA
- Signposting, etc.
- Action Planning
- Activity Diary

**2. Pedometer**
- Step Chart & Pedometer

**3. Motivational & Pedometer**
- Benefits of PA
- Ways of Increasing PA
- Signposting, etc.
- Action Planning
- Activity Diary
- Step Chart & Pedometer
Phase 2 – Study Design

Phase 2: Three VBIs are currently being tested in eight practices (n=320) to examine potential efficacy, fidelity, feasibility and acceptability of the interventions:

- Design: Adapted cluster randomised design
- Control Group: Usual Care (health check)
- Intervention Groups: Participants received one of three VBIs to increase physical activity:
  1. Motivational OR
  2. Pedometer OR
  3. Motivational & Pedometer
Phase 2 – Measures

- Data will be collected 4 weeks post Health Check:
  - Primary outcome: objective physical activity (ActiGraph GT3X+)
  - Secondary outcomes:
    - Self-reported physical activity (RPAQ)
    - Process measures: recall, use of VBI materials, use of behaviour change techniques, feasibility, acceptability, and beliefs about being more physically active.

- A sub-sample of participants (n=6 per practice) are having their Health Check plus VBI audio-recorded and are being interviewed afterwards in order to examine **fidelity, feasibility and acceptability**

- All nurses/healthcare assistants are asked to audio-record at least 1 ‘control’ health check.
Phase 2

- Trained 18 practitioners (9 Nurses and 9 healthcare assistants) from 8 diverse practices in Cambridgeshire.
- 251 participants so far....
- Follow up data collected for 106 participants so far....
- PhD student study to commence in October: Examines non-responders
Phase 2 – The ‘Challenges’

- Randomisation
- Participant recruitment concerns: Participant Invitation Sheet (PIS) wording/invite procedures?
- Data collection: Objective PA measures
## Phase 2

### 3 VBIs (plus Control)

**ALL:**
- PA recommendations
- Face-to-face discussion
- Written materials

1. **Motivational**
   - Benefits of PA
   - Ways of Increasing PA
   - Signposting, etc.
   - Action Planning
   - Activity Diary

2. **Pedometer**
   - Step Chart & Pedometer

3. **Motivational & Pedometer**
   - Benefits of PA
   - Ways of Increasing PA
   - Signposting, etc.
   - Action Planning
   - Activity Diary
   - Step Chart & Pedometer

### Measures

**Efficacy:**
- Accelerometer Data
- Self-reported PA

**Fidelity, Feasibility & Acceptability:**
- Practitioner Interviews
  - Participant Questionnaire

**Subsample:**
- Health Check Recordings
- Participant Interviews
Phase 2 Preliminary Findings: Follow-Up Questionnaire (N=80)

"Was there a discussion of physical activity in your Health Check?"

<table>
<thead>
<tr>
<th>VBI</th>
<th>N</th>
<th>Yes</th>
<th>No</th>
<th>Can’t Remember</th>
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<tbody>
<tr>
<td>1 Motivational</td>
<td>16</td>
<td>16</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2 Pedometer</td>
<td>9</td>
<td>5</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>3 Motivational + Pedometer</td>
<td>24</td>
<td>19</td>
<td>2</td>
<td>2</td>
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<tr>
<td>ALL VBIs (1,2 &amp; 3)</td>
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<td>40</td>
<td>2</td>
<td>6</td>
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<tr>
<td>Control</td>
<td>31</td>
<td>16</td>
<td>10</td>
<td>5</td>
</tr>
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</table>
Phase 2 Preliminary Findings: Follow-Up Questionnaire (N=80)

“Would you have liked an additional contact or appointment relating to your physical activity at a later date?”

<table>
<thead>
<tr>
<th>VBI</th>
<th>N</th>
<th>Yes</th>
<th>No</th>
<th>Left Blank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Motivational</td>
<td>16</td>
<td>6</td>
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<tr>
<td>2 Pedometer</td>
<td>9</td>
<td>2</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>3 Motivational + Pedometer</td>
<td>24</td>
<td>8</td>
<td>16</td>
<td>0</td>
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<tr>
<td>ALL VBIs (1, 2 &amp; 3)</td>
<td>49</td>
<td>16</td>
<td>32</td>
<td>1</td>
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<tr>
<td>Control</td>
<td>31</td>
<td>9</td>
<td>18</td>
<td>4</td>
</tr>
</tbody>
</table>
Phase 2 (Very) Preliminary Findings

Summary

- **82%** of Participants receiving a VBI remembered having discussed Physical Activity in the Health Check, compared to **52%** of participants in the Control group.

- Approximately **30%** of participants said that they would have liked a follow-up contact of some kind.
Limitations of the Feasibility Study

- No baseline measures to determine changes in PA
- Not all uncertainties addressed:
  - Difficult to determine how well baseline measures can be incorporated into the main trial
  - Individual randomisation in the main trial?
What have we learned so far?

Key conclusions
- VBIs are acceptable and feasible within a HC

Lessons learned:
- Training needs
- Recruitment methods and data collection strategies
- Importance of piloting!