Very brief interventions to increase physical activity
A systematic review of reviews

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and on behalf of VBI Programme Team
Background

• Low levels of physical activity are associated with significant disease burden.(1)

• Primary care providers have access to large proportion of public BUT have time constraints.

• PA interventions may be easier to integrate into primary care (e.g. NHS Health Checks) if they were very brief.

Comparatively cheap \[\rightarrow\] Large scale implementation \[\rightarrow\] Increased reach

• Evidence for very brief interventions (VBIs) to increase physical activity has not been reviewed.

Background: focusing the review

1. What is a very brief intervention? (Undefined in PA literature)

“delivered face-to-face, preferably in a single session lasting no more than 10 minutes, but possibly also multiple brief sessions and/or distance contacts such as leaflets or telephone calls”

2. How can we find very brief interventions?
   • No formal definition – potentially difficult to search for primary studies.
   • Multiple reviews of PA interventions – review of reviews.
Objective of the systematic review

To summarise what is known about very brief interventions to increase physical activity that could be delivered face-to-face in a primary care or community setting.
Methods

Inclusion criteria

Review Level:
- Review of physical activity interventions only (single risk factor)
- Systematic review/Meta-analysis
- Adults
- Not PA rehabilitation

Data extraction
- Standardized proforma.
- Double checked by second researcher.

At the VBI study level (data taken from review):
1) Study details.
2) Intervention characteristics.
3) Effect on physical activity.
4) Resource use.

High heterogeneity
Narrative Synthesis
Methods: Search strategy

Search strategy

Key terms:
“physical activity”, “exercise”, “increase”, “brief intervention”, “counselling”, “systematic review”, “meta analysis”.

Period covered: 1854 - October 2011.

Databases

• CINAHL
• Cochrane Database of Systematic Reviews
• Database of Abstracts of Reviews of Effects (DARE) on Cochrane Library and Centre for Reviews and Dissemination (CRD)
• Health Technology Assessment database on Cochrane Library and Centre for Reviews and Dissemination (CRD)
• Embase
• MEDLINE
• PsycINFO
• SCI-Expanded
• SSCI SIGN
• Hand search of first authors’(LL) personal collections of articles
Results: Study selection

Records identified from electronic databases: N=11993

Records identified from ineligible comments: N=3

Records identified from authors collection: N=4

Records after duplicates removed N=5803

For Title screening N=5803

For Abstract screening* N=242

For Full text screening* N=154

For VBI screening* N=56

For Synthesis N=16 reporting 15 separate reviews.

No. of VBIs: 18 papers, reporting 13 separate studies evaluating 18 individual VBIs.

* Double screened
## Results: Preliminary synthesis
### Design and methods

<table>
<thead>
<tr>
<th>Characteristics of VBIs (13 studies)</th>
<th>Summary of results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country</td>
<td>8 USA</td>
</tr>
<tr>
<td></td>
<td>1 UK</td>
</tr>
<tr>
<td></td>
<td>1 NZ</td>
</tr>
<tr>
<td></td>
<td>1 Australia</td>
</tr>
<tr>
<td></td>
<td>1 Netherlands</td>
</tr>
<tr>
<td></td>
<td>1 Unreported</td>
</tr>
<tr>
<td>Design</td>
<td>8/13 Randomised</td>
</tr>
<tr>
<td>Setting</td>
<td>12 / 13 Primary care settings</td>
</tr>
<tr>
<td>Providers</td>
<td>11 / 13 - GPs/Physicians/Family physicians/Primary care providers</td>
</tr>
<tr>
<td>Population age</td>
<td>4/13 &gt;/= ‘middle aged’</td>
</tr>
<tr>
<td>Sample size</td>
<td>Range = 63 – 874</td>
</tr>
<tr>
<td></td>
<td>Median ~ 325</td>
</tr>
<tr>
<td>Comparison</td>
<td>5 Usual care</td>
</tr>
<tr>
<td></td>
<td>5 Intervention</td>
</tr>
<tr>
<td></td>
<td>2 Not reported</td>
</tr>
<tr>
<td></td>
<td>1 Usual care + Intervention</td>
</tr>
<tr>
<td>Follow up</td>
<td>Median = 5 months.</td>
</tr>
<tr>
<td></td>
<td>8/13 reported ST follow up only (&lt;/=6 months).</td>
</tr>
<tr>
<td>PA measures</td>
<td>3/13 Objective measures</td>
</tr>
<tr>
<td></td>
<td>12/13 Self report measures</td>
</tr>
</tbody>
</table>
## Preliminary synthesis
### Intervention characteristics

<table>
<thead>
<tr>
<th>Characteristics of VBIs (18 VBIs)</th>
<th>Summary of results</th>
</tr>
</thead>
</table>
| **Mode(s) of delivery**          | 18 / 18 - Individual face to face verbal  
13 / 18 - Written materials  
8 / 18 - Phone calls  
4 / 18 - Computer |
| **Content**                      | 18 Advice/counselling on increasing PA, sometimes stage based or tailored; at least 2 based on pre-assessment.  
13 Exercise prescriptions/educational materials/tip sheets or posters/stage based or tailored materials.  
8 ‘Booster’ calls/exercise counselling calls/follow ups |
<p>| <strong>Duration</strong>                     | Range = 2-10 minutes. Mode = 5 minutes. |</p>
<table>
<thead>
<tr>
<th>Effect</th>
<th>VBI content</th>
<th>Sample</th>
<th>Control</th>
<th>Follow up</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reports at least 1 positive effect of a VBI</td>
<td>Advice. Phone advice.</td>
<td>100</td>
<td>Int</td>
<td>3/6 mos</td>
<td>SR+Obj</td>
</tr>
<tr>
<td></td>
<td>Assessment. Counselling, stage of change tailored goal setting, stage of change tailored written advice/tips. Booster phone call. (3 studies)</td>
<td>255, 271.*</td>
<td>Usual care**</td>
<td>4-6 wks*</td>
<td>SR+Obj*</td>
</tr>
<tr>
<td></td>
<td>Advice, educational hand-out. Review phone call.</td>
<td>383</td>
<td>Usual care</td>
<td>1 mo/6 wks</td>
<td>SR</td>
</tr>
<tr>
<td></td>
<td>Assessment. Advice, written goal oriented prescription. Phone call.</td>
<td>491</td>
<td>Int</td>
<td>6 wks</td>
<td>SR</td>
</tr>
<tr>
<td></td>
<td>Counselling. Mailed standard/ tailored pamphlet.</td>
<td>763</td>
<td>Usual care</td>
<td>1/6 mos</td>
<td>SR</td>
</tr>
<tr>
<td>No effect of a VBI</td>
<td>Computer delivered PACE+ counselling. +/- Booster mailings, phone calls.</td>
<td>173</td>
<td>Int</td>
<td>1 wk, 4 mos</td>
<td>SR</td>
</tr>
<tr>
<td></td>
<td>Stage based/non stage based advice and materials, leisure pass.</td>
<td>294</td>
<td>Int+Usual care</td>
<td>3, 12 mos</td>
<td>SR</td>
</tr>
<tr>
<td></td>
<td>Assessment. Stage specific advice, benefits, self-efficacy barriers, referral to community resources, prescription, manual. Follow up visit. (2 studies)</td>
<td>355, 63.</td>
<td>Usual care</td>
<td>6 wks, 8 mos</td>
<td>SR</td>
</tr>
<tr>
<td></td>
<td>Advice and encouragement. +/- Booster phone call.</td>
<td>358</td>
<td>Int</td>
<td>8 wks, 6, 12 mos</td>
<td>SR</td>
</tr>
<tr>
<td></td>
<td>Assessment. Advice on national guidelines, referral to health educator for clarification and materials.</td>
<td>874</td>
<td>Int</td>
<td>6, 12, 24 mos</td>
<td>SR+Obj</td>
</tr>
</tbody>
</table>

* = per study that did not report detail.
Preliminary conclusions

• Very few VBIs.
• Content and delivery poorly specified.
• Impact of quality on effectiveness?
• Conflicting findings - no observable pattern between intervention design and effectiveness.

Recommendations:
• Comprehensive reporting of intervention characteristics.
• More robust evaluations of VBIs.
Limitations & Next steps

• Review of reviews – could have missed some VBIs.

• Data extraction at the level of the review, not primary studies – more detail? ‘real’ VBIs?

Next...

• Finish data extraction & double check

• Synthesise data & double check
Thanks & Questions?

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VBI webpage: http://bitly.com/vbi-programme

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References


