A systematic review of effective behaviour change techniques in community walking and cycling interventions: The iConnect study

Dr. Jane Powell
UWE

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Walking and cycling interventions may have the potential to change behaviour - however, evidence is inconclusive (Ogilvie et al, 2007; Yang et al., 2010)

Potentially attributed to:

- Differences in design characteristics (i.e. Audience, outcome measures, evaluation criteria, etc.)
- Differences in intervention content (i.e. Behaviour change techniques (BCTs))
Background

- This has restricted our understanding of how intervention content is related to intervention efficacy

So...

- BCT taxonomy (Abraham and Michie, 2008)
  - Standardised list of 26 BCTs commonly utilised by behavioural interventions
  - Used to describe content of behavioural interventions
  - Not yet applied to walking and cycling interventions
Present study...

A systematic review of the behaviour change techniques (BCTs) incorporated into walking and cycling interventions
## Methods

- **Systematic database search**

<table>
<thead>
<tr>
<th>Inclusion criteria</th>
<th>Exclusion criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control/standard care condition</td>
<td>Child population</td>
</tr>
<tr>
<td>Pre-/post-intervention outcomes</td>
<td>Unpublished studies</td>
</tr>
<tr>
<td>Adult-only population</td>
<td>Duplicate references</td>
</tr>
<tr>
<td>English language</td>
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</tbody>
</table>
Methods

- Data extraction:
  - Design characteristics (e.g. Audience, outcome measures, delivery, sample size, etc.)
  - BCTs (using Taxonomy coding manual)

- Quality appraisal
  - 8-item checklist adapted from previous reviews (Ogilvie et al., 2007; Yang et al., 2010)
Results

- 40 studies met the inclusion criteria:
  - 17 = statistically significant change
  - 10 = no statistically significant change
  - 13 = of uncertain statistical significance

- Variation in:
  - Design characteristics /outcomes (i.e. Population, delivery, sample size, effect size, etc.)
  - Vocabulary used
Results

- Behaviour change techniques (BCTs):
  - Variation in number of BCTs coded per study (0-14)
  - Majority coded multiple BCTs ($M = 4.55$, $SD = 3.06$)
  - “Self-monitoring” = most frequently coded (65%)*
  - More BCTs = more effective? ($F(1, 25) = 10.27$, $p = 0.004$)

*Studies reporting statistically significant change
Discussion

- Variation in vocabulary
- No clear combination of BCTs
- Heterogeneity in number of BCTs coded
  - “Self-monitoring” - support for inclusion?
  - More BCTs = more effective?
    - Potential for more simple intervention content
Discussion

- Impact of design characteristics?
  - Audience, delivery mode, theoretical framework, duration...

- Impact of environmental factors?

- Exhaustive list of BCTs?

- Coding reliant on study reporting style
  - Were BCTs missed?
  - Discrepancies across coders?
Recommendations

1) Further exploration of the BCTs used in walking and cycling interventions

2) Detailed, standardised reporting of walking and cycling intervention content

3) Standardised intervention manuals
Questions?

Contact us...

emma.bird@uwe.ac.uk

Collaborators:
Miss Emma Bird
UWE
Dr. Graham Baker
University of Strathclyde
Dr. Jane Powell
UWE
Prof. Nanette Mutrie
University of Strathclyde
Dr. David Ogilvie
MRC Epidemiology Unit, Cambridge
Dr. Shannon Sahlqvist
MRC Epidemiology Unit, Cambridge