Healthcare professional behaviour change using technological supports: A realist literature review

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Overview

• Why healthcare professional behaviour change?
• Realist review
  – Effective interventions, practical issues
• Recommendations for future research
Background

• Cochrane reviews of technological interventions
  – Email and clinical communication\(^1\) On-screen reminders\(^2\)
  – Lack of cross-disciplinary comparison, understanding of the specific **context** of interventions\(^3\)
  – Difficulties implementing interventions – organisational constraints

• Interventions often lack theoretical foundations
  – Example of audit and feedback – work best when based on theory\(^4\)
  – Necessary for explaining and identifying target beliefs involved in clinical practice\(^5\)

Aim

• To synthesise cross-disciplinary research using technological supports to change the behaviour of healthcare professionals
Methods

• Realist review
  – Interactions between context, mechanisms, and outcomes
  – How interventions work for whom and in what circumstances
  – Systematic searches: Medline, Embase, Cumulative Index to Nursing and Allied Health Literature (CINAHL), PsycINFO, ISI Web of Science, and Cochrane Library

• Type of intervention, setting, target behaviour, and theoretical content

• Thematic analysis of studies examining the practicalities of implementing interventions

1Pawson et al. (2005)
Results

Records identified through initial search (includes hand search)  
* n = 2,128

Records after duplicates removed  
* n = 1,810

Records screened (title/abstract)  
* n = 1,810

Ineligible studies  
* n = 1,588

Full-text articles assessed for eligibility  
* n = 222

Unable to obtain full-text  
* n = 5

Ineligible studies  
* n = 145

Studies included in final analysis  
* n = 72

Papers reporting an intervention  
* n = 50

Papers reporting practical aspects of implementing interventions  
* n = 22
Results: *Type of technological intervention*

- **Decision support**
- **Reminders/alerts**
- **Computer-based...**
- **Hyperlinks**
- **Diagnostic/risk...**
- **Computer-generated...**
- **Email**
- **Reminder within EHR**
- **Personal digital...**
- **Electronic feedback...**
- **Faxed alerts**
- **Text message**

- Number of interventions
- Successful interventions

21 of 50 (42%)
Results: *Target behaviour* of intervention

<table>
<thead>
<tr>
<th>Behaviour category</th>
<th>Number of interventions</th>
<th>Successful interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adherence to patient mg guidelines</td>
<td>20</td>
<td>10 of 18 (56%)</td>
</tr>
<tr>
<td>Prescribing behaviours</td>
<td>14</td>
<td>8 of 15 (53%)</td>
</tr>
<tr>
<td>Increasing screening/testing rates</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Clinical intervention/management</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Increasing knowledge, or self-efficacy</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Increasing appropriate referrals</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Number of interventions

Successful interventions
Results: *Target professional* of technological intervention

- **17 of 24** (71%)
- **10 of 18** (56%)

![Bar chart showing number of interventions and successful interventions by healthcare professional category](image)
Results: *Setting* of technological intervention

- **Primary Care**: 15 of 24 (63%)
- **Hospitals**: 12 of 14 (86%)
Results: Theory content

n= 50

n= 27 (53%) Using BCTs

n= 17 (63%) Resulted in hcp behaviour change

Reminders/alerts n= 6
Decision support n=4

<table>
<thead>
<tr>
<th>BCT</th>
<th>Number of studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide instruction on how to perform the behaviour (21)</td>
<td>14</td>
</tr>
<tr>
<td>Model/demonstrate the behaviour (22)</td>
<td>2</td>
</tr>
<tr>
<td>Stress management/emotional control training (36)</td>
<td>1</td>
</tr>
<tr>
<td>General communication skills training (39)</td>
<td>2</td>
</tr>
<tr>
<td>Provide feedback on performance (19)</td>
<td>2</td>
</tr>
<tr>
<td>Facilitate social comparison (28)</td>
<td>1</td>
</tr>
</tbody>
</table>

¹Michie et al. (2011)
Results: Thematic analysis

Practice and workload issues

Design and implementation of technology-based interventions

Design, content and technical issues

Usability and benefit for patient care

Role of the clinician

Design and implementation of technology-based interventions
Conclusions

• Technological supports show promise, but vary in **content** and **delivery method**
  – Computer-generated reminders, decision support
  – Largest group in primary care, but more success in hospital settings

• Conclusions difficult due to a lack of consistent evidence
  – Evidence of (implicit?) BCTs, further research needed to test

• Embracing technology offers a novel, feasibile intervention delivery option to support behaviour change
  – **Content** of the message as important as **delivery method**
Thank you

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