The REACH Heart Failure Manual: A complex intervention to support rehabilitation and self care for people with heart failure

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The Problem

Heart failure (HF) affects almost a million adults in the UK.
Cardiac rehabilitation is effective (NICE CG108).
But rehabilitation programmes accessed by fewer than 5%.
Aims

To develop an intervention to support rehabilitation and self-care for people with Heart failure

The primary aim is to increase quality of life for patients
Methods

We used Intervention Mapping

Bartholomew et al. Planning health promotion programs. An intervention mapping approach. 2011
Step 1: Needs Assessment

Two focus groups with patients and caregivers

A ‘scaffolding questionnaire' for patients, service providers and caregivers

Systematic reviews - quantitative and qualitative
(Davies et al. *EJHF* 2010; Wingham et al. *Chronic Illness* 2013)

Qualitative study of caregiver needs
(Wingham et al. *In Prep* 2014)

Clinical guidelines (NICE CG108, ESC 2012)
Step 1: Needs Assessment

Further consultation with experts in the field (cardiology, cardiac rehab, self-help manual development, health psychology, primary care)

Regular meetings with a 9-member patient participation group
Step 2: The process model

**Behavioural factors**
- Physical activity
- Take meds
- Help-seeking
- Manage fluid status
- Healthy eating
- Smoking
- Alcohol
- Correct use of devices
- Manage comorbidities
- Vaccination
- Sexual activity
- Communication w HPs
- Manage breathlessness
- Maintain social roles
- Manage fatigue

**Quality of life**
- Symptoms
- Care needs
- Ability for ADL
- Sleep quality
- Sense of control
- Affect
- Perceived burden

**Psychological factors**
- Manage anxiety / stress
- Manage depression
- Sleeping well
- Cognitive function
- End of life issues
- Adapt self-concept
- Understand condition

**Environment**
- Secondary smoke
- Home environment
- Support from others
- Financial burden
- Work environment

**Longer term outcomes**
- Hospital admissions
- Mortality
Step 3: Construct mapping matrices

We constructed tables of more detailed change objectives and ‘modifiable determinants’ for each target.

We then selected intervention techniques to modify the determinants, using a taxonomy of behaviour change techniques and expert opinion.

<table>
<thead>
<tr>
<th>Performance Objective</th>
<th>Modifiable Construct</th>
<th>Self-Management Techniques</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. With regard to safety and perceived exertion, build up intensity/type of exercise as fitness improves to achieve a ‘basic level of fitness’</td>
<td>Self-efficacy (confidence to increase exercise)</td>
<td>Gradual efficacy</td>
<td>Text on ‘making it sustainable’ (M)</td>
</tr>
<tr>
<td></td>
<td>Limitations due to HF symptoms</td>
<td>Building</td>
<td>Text on managing chest pain/possible heart attacks (M)</td>
</tr>
<tr>
<td></td>
<td>Limitations due to co-morbidities</td>
<td>Problem-solving</td>
<td>Prompt building up of walking in terms of distance or pace, or incline (e.g. p.102 HM) (M, F)</td>
</tr>
<tr>
<td></td>
<td>Social influences and social support</td>
<td>Provide instruction</td>
<td>Nurse to discuss and support an interval training component, where a higher intensity (steps per minute) is interspersed with natural cadence in the walking programme, as a way to progress activity intensity – the message is that this is particularly good for building fitness. (F,M)</td>
</tr>
<tr>
<td></td>
<td>Concerns about safety of exercise</td>
<td>Prompt practice</td>
<td></td>
</tr>
</tbody>
</table>
Step 4: Produce intervention materials

Based on our matrices, we generated 3 main resources...

- A ‘Heart Failure Manual' for use by patients
- A Caregiver Resource
- A training programme for intervention facilitators
Key Features

A choice of exercise programmes
- Chair Based Exercise DVD
- Structured walking programme

Stress-reduction exercises and a Relaxation CD

Manage and take medications
- Manual text, nurse-facilitation

Manage fluid balance and seek emergency help if needed
- Manual text, nurse-facilitation, Progress Tracker
Conclusions

• We have developed a comprehensive self-care support intervention for people with heart failure and their caregivers

• This is grounded in evidence, behaviour change theory, clinical guidance and patient perspectives

• A multi-site RCT will report in late 2017

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Thank you!
Behaviour Change principles

• Individual tailoring to address both patient priorities and clinical priorities
• Build patient understanding of HF /their own situation and what they can do to improve it
• Increase mastery of self-care activities through practice, self-monitoring of progress and facilitated problem-solving (Progress Tracker).
• Strongly supports caregiver involvement (CG Resource).
• Patient-centred counselling techniques to build empathy and engagement
Theory

• The qualitative meta-synthesis suggested a 5-stage process of adaptation for people post diagnosis of heart failure
  – Chaos; Making sense; Initial coping; Developing self-care expertise, Acceptance /assimilation

• The existing Heart Manual uses Leventhal’s self-regulation theory (Leventhal, 1984)

• There is good synergy between these so we used both in guiding our selection of targets for change
Prioritisation using a “triangulation protocol”

<table>
<thead>
<tr>
<th>Programme outcomes</th>
<th>Nurses</th>
<th>Patients / patient groups</th>
<th>Other</th>
<th>Guidance /evidence</th>
<th>QoL domain (MLHFQ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engagement with the programme</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>All</td>
</tr>
<tr>
<td>Physical activity</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>All</td>
</tr>
<tr>
<td>Stress</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>Sleep quality Affect</td>
</tr>
</tbody>
</table>
## Targets for change

<table>
<thead>
<tr>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Activity</td>
</tr>
<tr>
<td>Managing Stress / Anxiety</td>
</tr>
<tr>
<td>Manage breathlessness</td>
</tr>
<tr>
<td>Understanding heart failure (what does it mean?)</td>
</tr>
<tr>
<td>Taking medications</td>
</tr>
<tr>
<td>Manage low mood</td>
</tr>
<tr>
<td>Monitor signs and symptoms: Seek help appropriately</td>
</tr>
<tr>
<td>Manage fluid status (over and under hydration)</td>
</tr>
<tr>
<td>Manage fatigue</td>
</tr>
<tr>
<td>Healthy eating</td>
</tr>
<tr>
<td>Living with uncertainty</td>
</tr>
</tbody>
</table>

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Full coverage (Core topic: Impt for all) - nurse support strongly focused on these areas. Interactive elements in the manual.
<table>
<thead>
<tr>
<th>Sleeping well</th>
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</thead>
<tbody>
<tr>
<td>Maintain social activities /social roles</td>
</tr>
<tr>
<td>Weight management</td>
</tr>
<tr>
<td>Severe Depression</td>
</tr>
<tr>
<td>Smoking</td>
</tr>
<tr>
<td>Alcohol</td>
</tr>
<tr>
<td>Cognitive function /memory problems</td>
</tr>
<tr>
<td>Manage /organise the home and work environments</td>
</tr>
<tr>
<td>Manage financial burden /organising benefits</td>
</tr>
</tbody>
</table>

**Managing co-morbidities (other illnesses) that might affect the ability to manage heart failure**

- **Brief, Needs-Based Intervention:** (Impt for some but not all) – nurse to assess and intervene briefly if needed. Manual to provide information /tips and self-assessment tools.

- **Case Management:** (Impt for some, but needs external input) – Nurse to assess, discuss briefly and signpost /co-ordinate care. Manual to provide information /tips.
| Manage and respond appropriately to devices (e.g. Implantable Cardiac Defibrillator, Cardiac Resynchronization Therapy), including managing anxiety around devices |
| Understanding medications /treatments |
| Vaccination |
| Engage in sexual activity if desired |

Peripheral topics - Provide information and signpost to self-directed learning or intervention options.