Barriers and motivators in engaging with technology-enabled cardiac rehabilitation: A patient and health professional perspective.
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Prevent
Purpose-Patient sample

• Determine the key personal, social and physical factors that inhibit or promote a patient’s capacity to engage with a technology enabled CR programme.
Customer-Stakeholder sample

- Explore **opinions and preferences** for the most appropriate **content** and most viable approach for delivery of the PATHway intervention,
- strategies for **recruitment and retention** of study participants,
- treatment **adherence**,
- strategies to overcome barriers to the **acceptability** of the intervention
Methods

**COM-B: A simple model to understand behaviour...**

- **Capability**: Psychological or physical ability to enact the behaviour
- **Motivation**: Reflective and automatic mechanisms that activate or inhibit behaviour
- **Opportunity**: Physical and social environment that enables the behaviour
- **Behaviour**

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Methods: Patients

• **Recruitment:** 33 CVD patients, from 4 groups:
  1. Phase 2 (hospital-based CR) attendees
  2. Phase 2 non-completers
  3. Phase 3 (community-based CR) attendees
  4. Phase 3 drop-outs

• **Average Interview time:**
  56.22 minutes, 7603 words.
Physical Capability

- “That circuit in the gym, I do have difficulties when I run... My hip starts to ache.” (P11)

- Unsure of physical fitness levels
- Unsure of how well they could do the exercises on their own at home

1. Requires: Careful introduction to **suitable exercises** at an **appropriate level**, and **choice** of activities.

2. Requires: Very careful monitoring of **participant satisfaction** ‘feel like they have a personal trainer devoted to them’ to make them **comfortable**.
Concerned about their co-morbidities...
| Psychological readiness (capability) | “I’ll be anxious maybe initially to make sure that I’d be doing it within the confines that I’m supposed to, not over-exerting…” (P15) |

Apprehension about not having the knowledge of CVD to understand what physiological reactions are acceptable to experience.

4. Requires: **Carefully scripted information** on ‘what to expect while exercising’... help them understand their ‘**new normal**’.

5. Requires: **Supervised training** on ‘devices’ used in PATHway, what readings mean, how to interpret safe and optimal ranges.
Technological readiness (capability)

“Honestly, I’m not going to lie I really don’t know what I feel about it [Technology] until I use it, that’s being honest.” P24

6. Pilot Testing with PATHway system will be NB

7. Teachable Moments: PATHway – family intervention

8. Ongoing human support
### Results: Themes

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>“We all have the best intentions. So I think to have facilities at home...you want to be motivated, unless there was something you had signed up to that’d say—okay I’m going to do it at eight o’clock on a Monday night” (P16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Opportunity</td>
<td></td>
</tr>
</tbody>
</table>

9. Time (Priority; scheduled class times plus flexibility)

10. Equipment (including high speed internet)

11. Space in the home (movable system)
### Results: Themes

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>“You go to a gym, you’re looking at the person next to you, you’re wondering are they looking at you? For somebody who is overweight they don’t want to go to a gym and have anybody look at them. They feel insecure. If you’re at home you don’t have that” (P23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Opportunity</td>
<td></td>
</tr>
</tbody>
</table>

12. PATHway a bridge between hospital and home; this support is necessary to build confidence and commitment generated in hospital-based CR.
Results: Motivation

Motivation

- Goal setting
- Social interaction
- Perceptions
- Structured approach to exercise
- Personalization
- Present and Future health and well-being
Trust in PATHway system if...

• high level rec. from healthcare provider

• Purpose explained

• PATHway is easily understood
Summary: Implications

1. Careful introduction to **suitable exercises** at an **appropriate level**, and **choice** of activities.
2. Careful monitoring of **participant satisfaction**.
3. Concern about **co-morbidities**
4. **Carefully scripted information** on ‘what to expect while exercising’... help them understand their ‘**new normal**’.
5. **Supervised training** on ‘devices’ used in PATHway, what readings mean, how to interpret safe and optimal ranges.
6. **Pilot Testing** with PATHway system will be NB
7. Teachable Moments: PATHway – family intervention
8. Ongoing human support
9. Time
10. Equipment
11. Space
12. PATHway a bridge between hospital and home.
13. High level recommendation from healthcare provider
14. Purpose explained and PATHway easily understood

Physical activity levels are lower in females than males and the proportion of those meeting the guidelines decreases with age in both men and women

Scottish Health Survey 2013

Keep PATHway real

www.pathway2health.eu
Methods: Stakeholders

• **Recruitment**: 21 Stakeholders:
  - Public policy, Health Services, Patient organisations, cardiac nurses, physiotherapists, cardiologists, hypertension specialists, cardiac psychologist, technologists.

• **Average interview time**:
  - 59.35 minutes, 10,272 words.

• **Data Analysis**: Semi-structured interviews transcribed verbatim and subject to a 5-step thematic analysis.

(Braun & Clarke, 2006; *Qualitative research in psychology*, 3, 77-101. doi: 10.1191/1478088706qp063oa)
Theory-driven recruitment

- Public Policy: national, state, local laws and regulations
- Community: relationships between organizations
- Organizational: organizations, social institutions
- Interpersonal: families, friends, social networks
- Individual: knowledge, attitudes, skills

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Stakeholder Implications

- ‘Age’ of Measurement
- Harnessing Hospital-based CR connections
- Finite Resources
- Whole-team ‘buy-in’
Stakeholder Implications

- Patient Centred Approach
  - Social Support
  - Tech augmented care
  - Positive patient reinforcement
  - Personalisation
  - Patient-led participation

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Stakeholder Implications Contd.

• Technology Recommendations
  – Ease of use
  – Clinical and patient interface
  – Alarm and emergency protocols
  – Feedback
Next steps?

- **PATHway alpha version testing**
- Focus group testing the alpha version
- Iterative design process between technology team and CVD patients)
- Co-design of health behaviour change content with CVD patients
- Stakeholder expert panel feedback (April 2016)
Questions?