Developing a Theory-Based Intervention Manual to Enhance Self-Care of Patients with Heart Failure

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Background

- International guidelines recommend self-care as integral part of routine heart failure (HF) management
- HF can be managed effectively with on-going self-care, yet patients are frequently unable to adhere
- Previous interventions that were not theory-based have shown limited success in improving adherence to self-care

Aim of Study

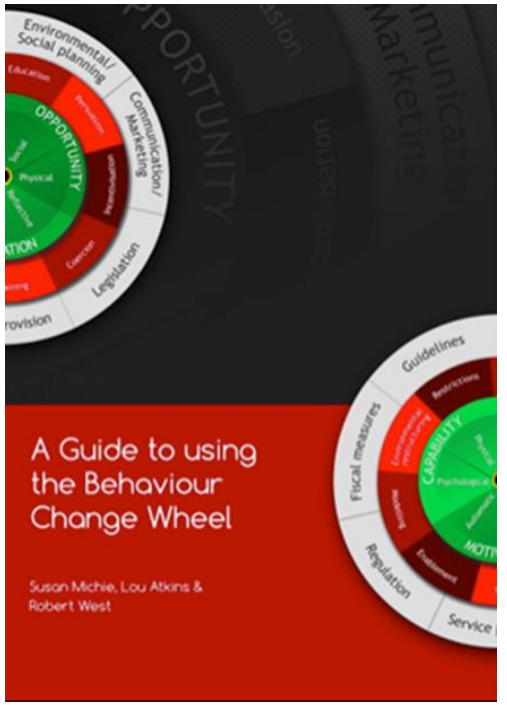
- To develop an intervention manual containing theory-based BCIs that are well-defined using eight descriptors proposed to describe BCIs in a standardised way

Research Question

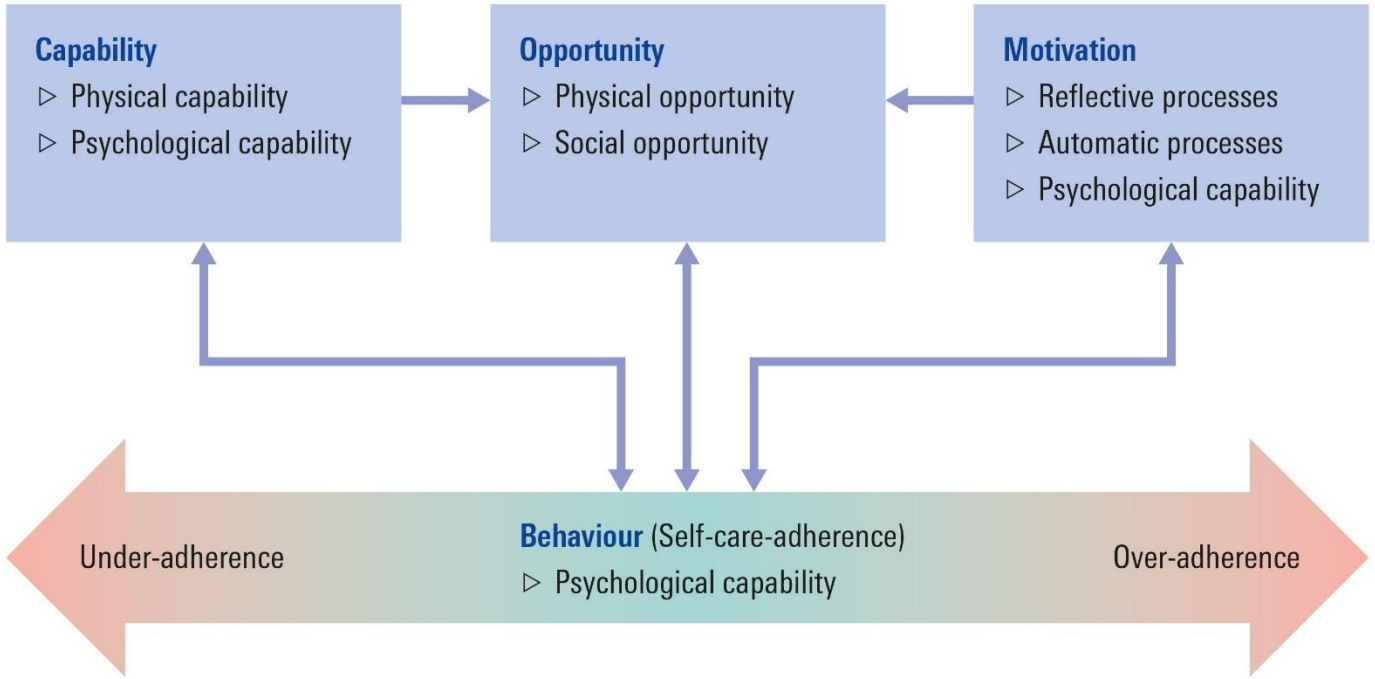
- Can a detailed intervention manual for designing theory-based behaviour change interventions using the COM-B behaviour model improve self-care in HF patients?

Study Design

- **Study design:** Use of COM-B model (Stage 1-3); Normalisation Process Theory (NPT) & Delphi technique (Stage 4) + Patient & Public Involvement
- **Duration:** 26 months (1FTE)
- **Value:** €220,114
- **Funding:** German Research Foundation (DFG)
- **Fund code:** DFG HE 7352/1-2
- **Ethical approval:** Ethics committee of HHU (Ref #: 2018-30)



COM-B Model: Universal Behavioural Theory



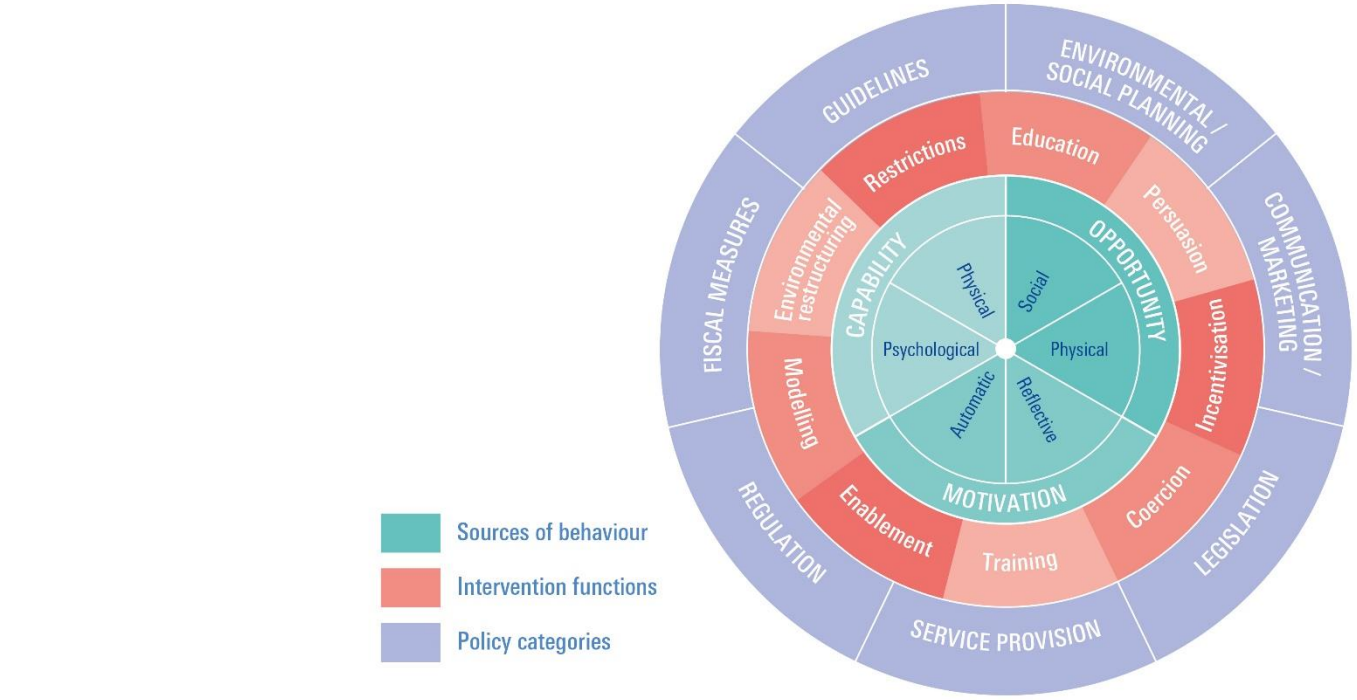
Stage 1: Extracting Behaviours

- Identification & extraction of *all* “target behaviours” associated with self-care (non-)adherence from two meta-studies (QUAN + QUAL)
- QUAL meta-summary (Herber *et al.* 2017) → based on 31 reports
- QUAN meta-analysis (Kessing *et al.* 2016) → based on 65 reports
- Identification of behaviours by two researchers independently
- Final list of *common* behaviours from both reviews

Stage 2: Mapping Behaviours onto COM-B

- Each of the factors identified in Stage 1 were mapped onto the COM-B model components (**C**apability, **O**pportunity, **M**otivation)
- If there were difficulties in classifying the factors onto the COM-B model, a second opinion was obtained
- The COM-B model assists in understanding of why patients with HF (non-)adhere to self-care

Behaviour Change Wheel



Stage 3: Identifying Behaviour Change Techniques

- Appropriate behaviour change techniques (BCTs) were identified for changing undesirable behaviours
- Use of Taxonomy (v1) that contains 93 BCTs

Narrowing Determinant List: Less is More

- Merged target behaviours from QUAN + QUAL meta-studies
- Eliminated behaviours with effect sizes <25% (QUAL)
- Eliminated behaviours with unknown quality (QUAN)
- Combined overlapping determinants
- Focus on barriers only for larger intervention impact
- Enquired HF patients' preferences if several BCTs were available

Role of Patient & Public Engagement

- 35 HF patients were asked to rate different BCTs in relation to its likeliness of use (0= „Not likely at all“ ; 3= „Extremely likely“)
- Friedman and Wilcoxon tests were performed to analyse which BCTs patients preferred
- Finally, the number of interventions to be further developed was reduced to **15**

Example

#	Undesirable behaviours ("barriers to self-care")	COM-B component	Behaviour Change Technique (BCT) according to BCT Taxonomy (v1)
1a 1b	Patients had *difficulties interpreting* their symptoms, *attributed them to existing comorbidities, medication side effects* or *emotional responses* (Herber *et al.* 2017)	Psychological capability	**5.1 Information about health consequences** (e.g. simple explanations such as being told to expect swelling in the legs, tiredness, shortness of breath, etc. **8.1 Behavioural practice/rehearsal** (e.g. short test of ability to attribute symptoms to existing comorbidities)

Next Steps

Starting in November 2019

Stage 4: Considering Contextual Factors

- Consultation of key stakeholders to identify wider factors needed for successful implementation of BCIs into routine work
- Qualitative semi-structured interviews with 15–17 key stakeholders (e.g. patients, nurses, doctors, researchers,…)
- Use of Normalisation Process Theory (NPT) provides guiding questions to overcome difficulties of implementing theoretically derived interventions into everyday practice

Stage 4: Determination of Descriptors

- Interviews with key stakeholders will help determining the eight descriptors needed to describe BCIs in a standardised way

(1) Content of intervention elements	**(5) Mode of delivery (group-based)**
(2) Characteristics of self-care tutors	**(6) Format (e.g. lectures)**
(3) Target population characteristics	**(7) Intensity (contact time)**
(4) Delivery location (e.g. home)	**(8) Duration (e.g. # of sessions)**

Stage 4: Delphi Technique

- Use of Delphi technique (formal consensus method) involving *all* key stakeholders to elicit consensus on final interventions
- The Delphi questionnaire will deal specifically with any mixed responses (ambiguities) regarding the descriptors
- Threshold for consensus set at 75% of participating stakeholders; otherwise rank order will be used

Final Product

- At end of stage 4, we will have a final version of the intervention manual containing well-defined theory-based BCIs
- Feasibility study to pilot test interventions described in the manual (follow-up study in 2021)
- Full-scale randomised controlled trial to test the interventions including health economic evaluation (follow-up study in 2021)

Take Home Message for Practice

- The intervention manual contains theory-based interventions that are most applicable for overcoming certain self-care barriers in order to enhance adherence in HF patients

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