Supporting self-management in hypertension care through an interactive mobile phone self report system: a Person-Centred approach

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Background: a health care facing new challenges

• Demographic and epidemiological transitions in society:
• Prolonged life
• Life-style attributed health problems
• Chronic disease profile
• Increased demand on health care organization and delivery
• Economic constraints
• Re-thinking health care
Background: a health care in need of support to change

• Managing health an increased individual responsibility:
• Self-management of a condition
• Participation in the own care

• New demands on patients require support from health care

Hypertension

• The primary riskfactor of cardiovascular disease
• Large and growing problem
• Chronic condition
• Treatment in a combination of drugs and lifestyle adjustment are effective and decrease risk of cardiovascular disease
• BP control remains poor

Hypertension

No more than 50% adhere to their treatment.

Focus until now:

Lack of successful interventions in order to improve adherence


New alternative focus:

SELF-MANAGEMENT

Need for self-management support tools facilitating understanding and interpretation of BP, in relation to perceived symptoms and how we live

Need for self-management support tools facilitating the communication between patients and their caregivers, in a way that promotes patient participation in equality with the health care professional
## Theoretical framework

<table>
<thead>
<tr>
<th>Person-centredness: the perspective</th>
<th>Person-centred care, the doing, in relation to self-management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personalism:</strong></td>
<td>Participation</td>
</tr>
<tr>
<td>Capabilities, Capacity, In action,</td>
<td>The individual</td>
</tr>
<tr>
<td>Responsibility for actions, Life-plans,</td>
<td>The person</td>
</tr>
<tr>
<td>Narration, Interpretive, Relational, anti-reductionsim</td>
<td>To self-manage within the frame of the relationship</td>
</tr>
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</table>

Christian Smith (2010)
Charles Taylor (1995)

- Representations
- Interpretations
- Construction of personal knowledge

Martin Buber (1994)
- I-thou
- I-it

## Overall aim

The aim was to, with a person centred perspective, design, develop and evaluate an interactive mobile phone-based system to support self-management of hypertension.
Methodological framework

Theoretical guidance:
• Participatory oriented design (Spinuzzi, 1999)
• Common Sense Model (Leventhal et al 1985, 2012)

Practical guidance:
• FDA’s model for development of Patient Reported Outcomes
• ISPOR task force reports on good research practice for developing Patient Reported Outcomes Measures

Overview of studies

<table>
<thead>
<tr>
<th>Development</th>
<th>Evaluation</th>
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<tr>
<td><strong>Focus of study:</strong></td>
<td>Effect on blood pressure. Effect on structure and interaction in the follow-up consultation.</td>
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<td><strong>Study 1</strong></td>
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<td><strong>Design</strong></td>
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<td><strong>Participants</strong></td>
<td>Patients (n=15), professionals (n=12)</td>
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<tr>
<td><strong>Setting</strong></td>
<td>1 Health Care Centre: 1 internal medicine outpatient clinic</td>
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<tr>
<td><strong>Data collection</strong></td>
<td>Focus groups</td>
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<td><strong>Analyses</strong></td>
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Focus of study: What is deemed important for the users: patients and health care professionals?

Design: Explorative Cross-sectional Validation-study Explorative Longitudinal Interpretive
Design and development phase: focusgroups

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<td>Validation-study</td>
<td>Patients (n=21), professionals (n=4)</td>
<td>2 Health Care Centres</td>
<td>Cognitive interviews</td>
<td>Structured iterative analysis from tracking mats</td>
</tr>
<tr>
<td>III</td>
<td>Effect on blood pressure.</td>
<td>Explorative Longitudinal</td>
<td>Patients (n=45), professionals (n=8)</td>
<td>4 Health Care Centres</td>
<td>Mobile phone self-report questions, blood pressure and pulse measurements</td>
<td>Descriptive statistics, analytical statistics, Paired sample t-test, Latent class growth modeling</td>
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<td>IV</td>
<td>Effect on structure and interaction in the follow-up consultation.</td>
<td>Interpretive</td>
<td>Patients and professionals in audio-visual (n=10) and video (n=10) recorded consultations</td>
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Summary of results focus groups

Patients
- To feel control over the blood pressure
- In need of a deeper understanding

Health care professionals
- Clear and unambiguous information
- Prevention

Consensus of opinion
- Self-monitoring of blood-pressure
- Self-reporting of wellbeing, dizziness, stress, headache, tiredness and physical activity

Divergence in views
- The view and perception of symptoms
- The patients’ capacity

Design and development phase: validation

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**Areas, concepts and items**

- Biological factors
  - Blood pressure
  - Smell
- Symptoms
  - Headache
- Medication side effects
  - Fatigue
- Treatment adherence
  - Sleeptime
- Quality of daily life
  - Snoring
- Lifestyle
  - Physical activity

An overview of the developed self-management support system

Evaluation phase: blood pressure

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Notes:
- Study I: Evaluation phase: blood pressure
- Study II: Focus on the importance of items for users: patients and health care professionals.
- Study III: Effect on blood pressure.
- Study IV: Effect on structure and interaction in the follow-up consultation.

Participants:
- Study I: Patients (n=15), professionals (n=12)
- Study II: Patients (n=21), professionals (n=12)
- Study III: Patients (n=50), professionals (n=12)
- Study IV: Patients and professionals in audio- (n=10) and video- (n=10) recorded consultations.

Setting:
- Study I: 1 Health Care Centre internal medicine out-patient clinic
- Study II: 2 Health Care Centres
- Study III: 4 Health Care Centres
- Study IV: 4 Health Care Centres

Data collection:
- Study I: Focus groups
- Study II: Cognitive interviews
- Study III: Mobile phone self-report questions, blood pressure and pulse measurements
- Study IV: Audio/video recordings

Analyses:
- Study I: Thematic analysis
- Study II: Structural literacy analysis from tracking matrix
- Study III: Descriptive statistics from tracking matrix
- Study IV: Interaction analysis
Results


Systolic blood pressure


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### Evaluation phase: communication and interaction

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Systolic blood pressure
Results

Contextualizations

Professional knowledge, interpretations shared

Questions, perceptions and insights shared

Symmetry

Life-world

Life-style

Equality

Blood pressure

MUTUAL PARTICIPATION IN FOLLOW-UP CONSULTATIONS

Summary of Results

A tool to support self-management was developed from a person-centred perspective in a participatory and structured manner

Blood pressure decreased

Patients became partners
• Co-producing data – the documentation
• Mutual sharing and participation
• Partnership

Togetherness

Illustration: Alexandra Flament