Cardiovascular Disease Self-management Apps: Barriers to Adoption

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Agenda

- Problem: Cardiovascular Disease
- Solution: Self-Management Apps
- Why this Study?
- Method
- Results
- Ways Forward
Problem: Cardiovascular Disease

CVD morbidity and mortality

CVD is the number one cause of death globally, with an estimated **17.7 million** people having died from CVD conditions in 2015, representing 31% of all global deaths.

It is also a leading cause of disability and death in the UK, affecting around **7 million** people and being responsible for one in four premature deaths in the UK.

In 2015 CVD was responsible for **26%** of all deaths (129,147) in England.
Problem: Cardiovascular Disease

The diagnosis and treatment gap

CVD prevention is being limited by the diagnosis and treatment gap for conditions including hypertension.

Hypertension in 2016 to 2017:

8,028,077 adults

Approximately 40% are not treated to the 140/90 target

There are also

5,520,000 adults with undiagnosed hypertension
Solution: Self-Management

Self-Care

= \quad \text{Naturalistic decision-making process}

\begin{align*}
\text{Maintenance} & \quad \text{Maintains physiologic stability - routine symptoms monitoring and treatment adherence} \\
\text{Management} & \quad \text{Response to symptoms when they occur}
\end{align*}

(IDF, 2009)
Why Apps?

- **86%** Q1 2016
- **88%** Q1 2017
- **24.7m** end 2015
- **25.3m** end 2016
- **9.2m** end 2015
- **10.8m** end 2016
- **81%** Q1 2016
- **83%** Q1 2017
- **38%** Q4 2015
- **44%** Q4 2016
- **28.9 Mbit/s** Nov 2015
- **36.2 Mbit/s** Nov 2016
- **59%** Q1 2016
- **58%** Q1 2017
- **66%** Q1 2016
- **66%** Q1 2017

- Total household internet take-up
- Number of fixed broadband connections
- Number of superfast broadband connections
- Proportion of adults with broadband (fixed and mobile)
- Superfast broadband take-up (% of all connections)
- Average actual fixed broadband speed
- Proportion of homes with a tablet computer
- Proportion of people who use their mobile phone to access the internet
Solution: Self-Management Apps
Solution: Self-Management Apps

- Improves symptoms management through self-management interventions (Whitehead & Seaton, 2016).
- Improve health outcomes among those living with LTC through enhanced symptom control (Whitehead & Seaton, 2016).
- Digital Health Interventions have a positive impact on risk factors of CVDs (Widmer et al., 2015).
- Effective tool to assist in managing some conditions (Wang et al., 2014).
- Effective in promote physical activity and healthy diet (Muller et al., 2016).
Why this Study?

- Why the low uptake of self-management apps?
- What are the barriers preventing the use of self-management apps?
Method

Records identified through database searching (n = 459)

Additional records identified through other sources (n = 29)

Records after duplicates removed (n = 270)

Records screened (n = 270) → Records excluded (n = 182)

Full-text articles assessed for eligibility (n = 88) → Full-text articles excluded (n = 65)

Studies included in qualitative synthesis (n = 23)
Results

- **Patient Barriers**
- **Technology Barriers**
- **Institution Barriers**

 pointing to

- **Patients adoption of Self-Management Apps**
Results

Patient Barriers

- Health and technology illiteracy
- Lack of motivation and awareness
- Busy lifestyle
- Satisfaction with traditional ways
- Lack of internet access and cost
- Lack of support
- Confidentiality issues

Patient Adoption of Self-Management Apps
Results

- Poor quality information or interaction
- Poorly design interfaces
- Complex functions

Technology Barriers

- Lack of functionalities valued by patients
- Lack of customization to patients preference
- Data security and confidentiality

Patient Adoption of Self-Management Apps
Results

- Slow decision-making process and logistic procedure
- Low staff capacity
- Lack availability of resources
- Absence of institutional support
- Low integration into workflow
- Work-related stress
- Insufficient training/skills/knowledge
- Lack of clinical endorsement

Patient Adoption of Self-Management Apps

Institution Barriers
Way Forward

- How to overcome these barriers?
  - Patient
  - Technology
  - Institution
Q&A Session
References


