A Holistic Framework for Understanding Acceptance of Remote Patient Management (RPM) Systems by Non-Professional Users

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Contents

- Remote Patient Management Systems (RPM)
- Unified Theory of Acceptance and Usage of Technology (UTAUT)
- Acceptance of eHealth Systems
- Acceptance of RPM and Personalization in RPM
Remote Patient Management (RPM)

Patient’s Site

Feedback Device

Application Hosting Device

Measuring Devices

Rules engine

Monitoring & Management Server

Professional’s Site

Cardiologist, HF nurse, GP

Feedback from the professional and educational material

Patient RPM data to the professional
Unified Theory of Acceptance and Usage of Technology (UTAUT)

Venkatesh et al. (2003)
Acceptance of eHealth Technology vs. Acceptance of ICT in general

- *utilization context*: eHealth devices are not used voluntarily, but for medical reasons;
- *utilization motives*: using an eHealth device is not comparable to e.g. mobile phone usage to communicate with friends;
- *higher heterogeneity in user groups* a *strong impact of individual factors* on acceptance for eHealth technologies.

Arning & Ziefle (2009)
UTAUT in eHealth

- Nuq (2009) adapted UTAUT for understanding medical professionals behavioral intention of eHealth services in developing countries
Studies of eHealth’ Acceptance

- Studies of effect of gender, age, income, race/ethnicity, education (Wilson et al., 2010; Arning & Ziefle, 2009):
  - The elderly are sensitive to benefits offered by eHealth services and sufficiently flexible to go online to gain those benefits;
  - some eHealth services have a lower attraction to women,
  - the digital divide remains an important obstacle to achieving potential benefits of eHealth across the broad population.

- Studies of variables promoting consumer health IT acceptance among patients (Or & Karsh, 2009) :
  - 94 different variables identified (patient, human-technology interaction, organizational, and environment-related factors);
  - existing literature focused largely on patient-related factors;
  - no studies examined the impact of social and task factors on acceptance,
  - few tested the effects of organizational or environmental factors on acceptance.
Framework for Studying User Acceptance of RPM

Acceptance levels:
- Intention to Use
- Enrolment & First Use
- Persistent Use

User factors:
- Expectations
- Experiences
- Social
- Individual
- Additional

Facilitating conditions:
- Information Services
- Hardware
- Organizational

User factors:
- Effort
- Output
- Efficiency
- Safety
- Usability
- Medicalization of home
- Push
- Peers
- Media
- Family
- Friends
- (im)Mobility
- Voluntariness
- Age
- Gender
- Copying style
- ‘Tech’ generation
- Education
- Anxiety
- Health literacy

Facilitating conditions:
- Quality
- Reliability
- Authority
- Accessibility
- Trust
- Control
- Availability
- Privacy & Security
- Collaboration
- Personalization
- Policy
- Exchange with peers
- Patient empowerment
- Exchange with experts
Three Levels of RPM Acceptance

1. Intention to Use
2. Enrolment & First Use
3. Persistent Use
Facilitating Conditions

Information Services
- Quality
- Accessibility
- Availability
- Personalization
- Exchange with peers
- Exchange with experts

Hardware
- Reliability
- Trust
- Privacy & Security

Organizational
- Authority
- Control
- Collaboration
- Policy
- Patient empowerment
Acceptance of Personalization in RPM

- The level of personalization of information services and hardware and software interfaces may affect all three levels of acceptance;
- Personalization may
  - affect effectiveness and usability of the system,
  - suggest the most appropriate way of organizing RPM for a particular patient with respect to
    • the level of authority,
    • the level of control and supervision.
- Even properly designed elements of personalization may have not only positive effects.
Conclusions and Further Work

- The proposed holistic framework for studying user acceptance in RPM could serve as a reference point for investigating user acceptance in RPM and eHealth in general.

- Further work:
  - case studies aimed to quantify the importance of and relations between different factors related to the development of personalized information services within RPM systems.