Role of wearable activity-tracking technologies in the well-being and quality of life people aged 55 and over

Shailey Minocha
Research Team: Duncan Banks, Caroline Holland, Catherine McNulty and Jane Palmer
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Technology and Education

Multi-user 3D environment:
Avatar-based virtual Geology fieldtrip
Skiddaw mountains
Funding: Wolfson Trust

Virtual Reality: phone-driven
Google Expeditions
Geography and Science education in schools
Funding: Google
Technology and Ageing

Themes:
- social isolation and loneliness
- online social interactions
- digital skills for employability and lifelong learning

Case study of an online community:
- photography journal: blipfoto.com
- inter-generational communication
- support for carers
- digital curation

Participation

Methods:
- meetings
- workshops
- email and face-to-face conversations; diary studies
- surveys

Collaborators:
- Age UK Milton Keynes, Carers MK, MK U3A
- Mind, Dementia Friends
- MK Council, West Bletchley Council
Digital health wearables

**Fitness trackers:**
walking, sleep patterns, calories expended, …
dashboard on phone or Tablet
Funding: Sir Halley Stewart Trust

**Significance:**
Active and Healthy Ageing
physical activity to preserve mobility and motor skills
Digital NHS
self-monitoring of health and medical conditions

Research

**Participants:**
people aged 55 and over who are already using such devices
people aged 55 and over who haven’t used such devices

**Other stakeholders:**
carers and family members
family doctors and healthcare professionals
Data collection

Surveys:
age 55 and over who use these devices
carers; and a workshop
doctors and healthcare professionals

Trying out the devices:
behaviour change study
activity-trackers to 21 participants in age-range 55-82
email interviews and diaries
4 workshops over 6 months

Results

Concerns:
design of the devices
usability and accessibility of devices
technical support
online help and tutorials

Data handling:
recording of the data
making sense of the data
accuracy of the data
ethics of sharing the data
Behaviour change

Other changes:
diagnosis and solutions for non-optimal sleep
pacing themselves with adequate rest-times
awareness of ethical sharing and use of data

Lifestyle changes:
diet, walking, conscious use of the car, joining the gym, walking groups, monitoring sleep

Carers

For themselves:
monitoring their own health and activity
sleep patterns
level of activity

For people they care for:
‘to monitor health in a low-key way that is not intrusive and give them independence to cope when they are doing well’
this data may ‘create confusion and unnecessary worry’
Key findings

- challenges for adoption of these technologies
- design for age-related impairments (e.g. vision, hearing, memory, dexterity)
- positive behavioural changes
- the role of digital health wearables in
  - caring, self-management of health
  - post-operative monitoring of mobility
  - for monitoring movement: dementia and Alzheimer’s disease
  - use of the data for diagnosis and medical interventions

Next steps

- dissemination of the results
- two-way knowledge-exchange with key stakeholders including manufacturers
- develop a shared understanding of design requirements
- to build on and enhance the evidence-base on the role of wearable devices in digital health
- guidelines on ethical considerations of sharing and using data from wearable devices
Resources

• Technology and Ageing themes: http://www.shaileyminocha.info/people-aged-over-55-years/

• Reports and presentations available from: http://oro.open.ac.uk/view/person/sm577.html

• Email: shailey.minocha@open.ac.uk

• Twitter: @ShaileyMinocha

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