



MARIO

Managing Active and healthy aging with use of caRing service rObots



Dementia

- Globally
 - 50 million people living with dementia in 2018; expected to reach 152 million by 2050 (WHO 2017)
- EU
 - 9.6 million in 2015; projected increase to 15 million by 2035 (OECD 2016)
- USA
 - 5.7 million; projected to increase to 14 million by 2050 (Alzheimer's Association 2018)
- No cure so need to focus on supporting people with dementia to live well

- Key challenge for people with dementia is loneliness and isolation
- UK 1/3 of people with dementia reported that they were lonely (Alzheimer UK 2013)
- Australia people with dementia twice as likely to have high rates of loneliness compared to the general public (Alzheimer's Australia September 2016)
- Social relationships and social health are associated with positive health outcomes (Rafnsson et al 2017)

MARIO

- Aims to address the difficult challenges of loneliness, isolation and dementia in older persons through companion/service robots
- 10 partners from 6 European Countries- France, Italy, Greece, Germany, UK, Ireland
- Duration 3 years February 2015-February 2018



What I would like in MARIO

- Remind me of daily and weekly events
- Store my phone numbers and important events like birthdays and anniversaries
- Remind me that I had visitors earlier in the day and who they were
- Store and play on demand my favourite music and movies
- Remind me to take my medications, and to eat and drink
- Contact medical help if I fall or am unwell
- Locate my keys or handbag
- Know my favourite book and read it to me contact my family via skype
- Have interactive games that I would enjoy and would help me retain my abilities for longer
- Recognise faces so he could prompt me as to who people were.
- Know the lay out of my home so he can direct me e.g. to the bathroom
- Speak more like a human





Bespoke Apps designed and tested: My Music, My Memories, My Games, My Chat, My Calendar, My News, My Family and Friends, Comprehensive Geriatric Assessment



3 pilot sites for testing MARIO



United Kingdom:
Stockport -Community



Ireland: Galway- Long
stay residential care



Italy: San Giovanni- Hospital

Assessment Tools

Data collection methods	Time points
Cornell Scale for Depression in Dementia	Pre and Post
Quality of Life in Alzheimer's Disease	Pre and Post
The Multidimensional Scale of Perceived Social Support	Pre and Post
The 14 Items Resilience Scale	Pre and Post
The Observational Measurement of Engagement	During
MARIO Bespoke questionnaires	During
Qualitative Interviews (PWD, Family members, Staff)	Post

Quantative results

In the hospital setting:

A significant improvement was observed in patient's

- depression
- resilience
- quality of life

Qualitative findings : 3 Key positive effects

1. Acceptable

- Enthusiastic and positive about MARIO and the deployment of social robots in dementia care



2. Reduced Loneliness & Isolation

- PWD spent less time alone and more time socially engaged
- Provided a distraction and point of interest
- PWD often referred to MARIO as s/he or as a 'friend' and as time went on, there was some evidence of relationships developing;



3. Enhanced Cognitive engagement

- Increased cognitive engagement; moments of positivity; more focused concentration using apps





Challenges identified

- Managing expectations
- Level of dementia
- Noisy environment
- Need for technical support

Conclusion

- Most stakeholders were positive about the use of robots.
- A few carers do not believe that robots have a role, argued that resources should be geared towards increasing numbers of human carers.
- Most people with dementia able to manipulate MARIO, the interface had been designed and tested with PWD.
- Some evidence of potential for improvements in health outcomes.

THANK YOU!

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