Suitable e-Health Solutions for Older Adults with Dementia or Mild Cognitive Impairment: Perceptions of Health and Social Care Providers in Quebec City

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Abstract: e-Health solutions offer a potential to improve the quality of life and safety of older adults with dementia or mild cognitive impairment (MCI). In making better decisions for using eHealth technologies, health professionals should be aware and well informed about existing tools. Recent research shows the lack of knowledge on these technologies for older adults with dementia. In Quebec, current market offer for these technologies is supply-based, and not need-based. This study is part of a larger project and aims to understand the perceptions and needs of health and social care providers regarding e-health technologies for older adults with dementia or MCI. One focus group was carried out with six health and social care professionals at the St-Sacrement Hospital in Quebec City, Canada. The focus group enquired about the use of Information and Communication Technology (ICT) with older adults with cognitive impairment. Relevant examples of ICTs were presented to assess their knowledge level. The discussion was tape-recorded and transcripts were coded using the Nvivo software. Results revealed that aside from fall safety technologies, there is a lack of knowledge about other e-Health technologies for this population. Respondents acknowledged the value of ICTs and were willing to recommend some of them. Economic reasons, blind trust on ICTs and lack of confidence in patients' capacity to use the solutions were the major limitations identified.

1 INTRODUCTION

Worldwide, population is ageing rapidly. The proportion of people over 65 years old is expected to grow from 900 million to 2 billion by 2050 (World Health Organization, 2017). The number of older adults suffering from cognitive problems, seen on a continuum from mild cognitive impairment to severe dementia is expected to grow from 36 million in 2010 to 115 million in 2050 (Lindbergh et al., 2016; Alzheimer Society of Canada, 2011). In Canada, the proportion of adults over 65 years old with dementia was 9.2% in 2014, representing 564,000 people. This number is estimated to rise to 937,000 people in 2031 (Chambers et al., 2016). In Quebec, the number of older adults with dementia was approximately 23 000 in 2008, and is estimated to rise to 45 500 in 2030 (Ministère de la Santé et des Services Sociaux, 2016).

This huge rise is putting pressure on public health systems and on informal caregivers. Among the biggest challenges are the sustainability of healthcare and social services delivery (Illario et al., 2015), the burden on informal caregivers, who are responsible for 75% of the care of the elderly (Lou et al., 2015) and the increase of risks for physical and psychological problems (Institute of Medicine, 2008).

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Dementia is an umbrella term used to describe a range of neurodegenerative diseases and is characterized by progressive cognitive decline and dependency of basic activities of daily living (ADLs) (Hattink et al., 2016). Mild cognitive impairment (MCI) rather refers to a cognitive decline resulting in difficulty with concentrating, memory and orientation. However, the person remains functional and independent and his/her cognitive abilities can improve over time (Alzheimer Society of Canada, 2014). Policy makers, health providers and older adults living with MCI or dementia are in favor for staying at home or in community as long as possible, to fully participate in life (Jin et al., 2015), to avoid additional costs (World Health Organization 2017). Since e-health solutions are promising to support older adults with dementia and their caregivers, it is important to offer them relevant information adapted to their needs and preference. Such technologies, if adequately implemented and used, have the potential to reduce costs and improve the quality of life of people with MCI or dementia and their caregivers (Hattink et al., 2016).

The rapid development of ICT dedicated to health and wellbeing (e-Health) offers an unprecedented potential to assist, maintain and improve older adults living active, healthy and independent lives. e-Health solutions can also allow older adults and their caregivers to receive timely health and social care in their homes, which diminishes the burden on them. Therefore, e-Health interventions are increasingly being recognized as promising solutions to answer the challenges of the aging population. However, little scientific evidence is available on the effectiveness of most e-Health interventions available and more research is needed in this field (Abbasgholizadeh Rahimi et al., 2017). Moreover, older adults and their caregivers are not necessarily aware of these solutions and may lack relevant and adapted information to make informed decisions on their use (Teles et al., 2017).

In several countries, large investments are made by governments to develop eHealth solutions targeting older adults and their caregivers. Despite the huge potential of these technologies, they are often underused. Technologies need to be adapted to end users' needs and should provide an additional leverage to empower them.

2 OBJECTIVES

The main objective is to get a deep understanding of the perceptions and needs of health and social care professionals with regard to the use of e-Health solutions intended for older adults with dementia or MCI. We will present the preliminary results based on a focus group session carried out with health and social care professionals in Quebec City, Canada. As part of a larger project, this study aimed to: 1) explore providers' perceived facilitators, motivators, and barriers in the use of e-Health by older adults with dementia or MCI; 2) assess their level of knowledge on e-Health solutions for older adults with dementia or MCI; 3) identify which currently available e-Health solutions could best match end-users' expectations.

3 METHODS

One focus group was conducted at the St-Sacrement Hospital in Quebec City with six health professionals: two occupational therapists, one physiotherapist, one social worker, one clinical nurse in geriatrics and one special education technician. All participants were female. Participants were recruited from a list given by the direction of the "Support for the autonomy of the eldery" service. The selection criterion was being a professional health or social care provider working in the mental health sector, caring for older adults with cognitive impairments of varying degrees. The research coordinator reached them to confirm their eligibility and availability. The focus group lasted for approximately 60 minutes, facilitated by the research coordinator. The discussion was taped-recorded and transcribed. The transcripts were then analysed by another research coordinator involved in the project by using qualitative data analysis software (Nvivo 12). During the focus group discussion, relevant examples were shown to get an idea of what respondents already knew about e-Health".

4 PRELIMINARY RESULTS

4.1 Poor Knowledge on e-Health Solutions

Results show that health and social care providers have generally low knowledge on technologies for older adults with cognitive impairment. They know the most popular, such as detection or registration falls (electronic bracelet), but admit their unfamiliarity with other e-Health solutions. Most of them have the perception that they lack capacity to properly support patients with suitable tools. Often,

the request of using some e-Health solution comes directly from patients and informal caregivers. They rely on health professionals to find some support, receive information in the use of these technologies, but in many cases, health professionals are not well qualified to assist them. They often don't know where to find reliable resources to adequately inform their patients.

They also lack training for current e-Health solutions suitable for their patients. The scarcity of these trainings initiated or supported by health institutions is seen as a major limitation. Some presentations are made by e-Health solutions companies, but few professionals attend these types of events because they take place during their working hours. Occasionally, professionals directly reach the manufacturers when they have specific questions about the use of a product, but most of the time, the company representatives do not speak French. Information sharing on the existence of e-Health solutions and their way of use is done informally between colleagues, and more often with family members of patients who introduce them to new tools. Finally, health and social care providers feel it is hard to keep up to date with all e-Health solutions available for their patients, and do not feel qualified for now to recommend these technologies to older adults with cognitive impairment.

The only e-Health solutions they used on a daily basis are mainly related to safety and fall prevention for the elderly. Those for taking medication are also known by some health professionals. In hospitals, electronic beds equipped with multiple detectors and sensors are also used. There are some controlled tools to unlock doors remotely for professionals who come to provide home care. These technologies are useful for people who want to limit their movements on stairs or in less safe places. One health professional mentioned the use of a teaching platform to learn how to do physiotherapy exercises. This web platform provides explanations, photos and videos and is available any time by therapists who can access patient data and send also further information.

4.2 Motivators and Barriers to the Use of e-Health Solutions

Despite poor knowledge on suitable e-Health solutions for older adults with cognitive impairment, health professionals have a favourable perception about their use. They consider that e-Health solutions should be part of their "toolbox" to support their patients. They also point out that e-Health solutions can promote a safer and more adapted return to home for older adults with cognitive impairment who have been hospitalized.

The most cited limitation is the high cost of these tools, which represents the major obstacle for the patient. Besides, the ability of patients to use these technologies was seen as a potential limitation. According to those health professionals, the more cognitive health is affected, the more difficult it would be for them to use these tools. They also indicate that the earlier e-Health solutions are introduced into their practice routine, the more acceptability increases. The lack of information support for isolated patients is also mentioned as a limitation. The blind trust in these technologies might be a disadvantage because the use of monitors equipped with a camera could lead to spacing out visits by relatives or friends. Despite these limits, health and social care professionals are in favour of recommending and using e-Health solutions and consider the idea of training as a need.

5 DISCUSSION

e-Health solutions offer access to health information and could contribute to empower, engage, and educate older adults (Hall et al., 2012). They can also allow them to receive timely health and social care in their homes, which diminishes the burden on them and their informal caregivers. However, little is known about the effectiveness of these technologies. A recent systematic review confirms the scarcity of evidence regarding the effectiveness of e-Health solutions for older adults with cognitive impairment (Dequanter et al., 2019). Results from this focus group confirm health and social care providers' lack of knowledge to support older adults with cognitive impairments and the necessity to have a deep understanding of patient needs before recommending the use of e-Health solutions. Thus, a professional evaluation should be conducted before recommending these solutions. For participants in this study, it is essential to analyze the patient's situation in order to find a balance between the use of these technologies and their real needs. To proceed to this evaluation, professionals suggest four criteria to take into account: 1) financial resources; 2) user-friendliness of the e-Health tool, 3) level of support (social network); 4) benefits of a safer return to home. The decision of using such technologies should only be made on a case-by-case basis.

6 CONCLUSION

Health professionals agree on the fact that they lack information to support adequately older adults with cognitive impairment in their use of e-Health solutions. The lack of accessible training and service in their language by e-Health companies are the biggest challenges encountered by health and social care providers. In addition, a greater flexibility in their work schedule could help them to get more familiarised with e-Health technologies. They unquestionably recognise the value of such technologies for elderly patients, and are willing to recommend them, but not without an evaluation of the patient financial and social conditions, needs and suitable solutions for their situation. Future research is needed on how to properly train and support professional care providers in order to facilitate the use of e-Health solutions for elderly patients.

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