

e-Health for Healthy Aging: Putting the Evidence into Practice

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Abstract: Population aging represents a major challenge as the proportion of people aged over 65 years worldwide is expected to reach 2 billion by 2050. This has profound implications for the planning and delivery of health and social care. The knowledge we want to disseminate come from a systematic review on e-health interventions for healthy aging (HA). This project arises from a research collaboration putting together complementary expertise in information and communication technology and aging. The overarching goal of this project is to ensure rapid translation of scientific evidence on effective e-health interventions promoting HA in order to accelerate their implementation for the benefit of older adults and their caregivers. Various knowledge translation strategies will be developed and implemented with knowledge users.

1 INTRODUCTION

Progresses in healthcare and major improvements in living conditions have led to an important increase of life expectancy in developed countries. Worldwide, the proportion of people over 65 years old is expected to grow from 10% to 22% by 2050 (World Economic Forum, 2016). More people are living longer and want to stay active and healthy in order to fully participate in life (Jin et al., 2015). However, population aging also put pressure on public health systems given the rise in the prevalence of chronic diseases. According to different forecasts, the future costs of population aging could represent an increase between 2.5% and 7.6% of the Gross Domestic Product (GDP) by 2060 (de la Maisonneuve and Martins, 2013, Townsend, 2016). This challenges the sustainability of healthcare and social services delivery (Illario et al., 2015). It is thus important to explore solutions that could optimize the use of resources for older adults on the healthcare system.

Healthy aging (HA) encompasses the physical, social, mental and spiritual dimension of health, and

promotes that older people take an active part in the society without discrimination (Swedish national Institute of Public Health 2006). HA includes an active engagement with life, optimal cognitive and physical functioning and low risk of disease that enables older people to participate within their capacities (Hansen-Kyle, 2005). In many countries, programs and policies are being implemented to promote healthy and active aging, such as extending the working (Hofäcker, 2014, Hofäcker and Naumann, 2015). Innovative solutions, such as Information and Communication Technologies (ICT), are also promoted for supporting HA (Pew Research Center, 2014).

The rapid development of ICT dedicated to health and wellbeing (ehealth) offers an unprecedented potential to assist, maintain and improve older adults living active, healthier and longer. eHealth facilitates access to health information and could thus contribute to empower, engage, and educate older adults (Hall et al., 2012). eHealth interventions can also allow older adults to receive timely health and social care in their homes, which diminishes the burden on them and their

informal caregivers. Therefore, ehealth interventions are gaining more and more attention as promising solutions to support HA.

There were almost 260,000 health and medical smartphone applications (*apps*) available in 2016, and more than 500 million smartphone users worldwide used a healthcare app (Research2Guidance, 2016). Older adults are increasingly using these applications to help themselves to stay fit, monitor their health status or communicate with their healthcare providers. However, little scientific evidence is available on the effectiveness of ehealth interventions for HA. Previous systematic reviews have focused on specific types of interventions, such as exergames (Larsen et al., 2013) or specific health issues such as mental health (Preschl et al., 2011), but no comprehensive reviews of ehealth interventions for HA were available up to now.

We recently completed a systematic review to fill this gap (Gagnon et al. 2016) that provides an overview of the current evidence on ehealth interventions for HA. The results show that ehealth interventions can improve specific dimensions of health and wellbeing among older adults.

This review also provides information on the acceptability of ehealth interventions and other implementation aspects that could inform those responsible for promoting and supporting their use.

2 OBJECTIVES

This knowledge translation project aims to: 1) synthesise the current scientific evidence on ehealth interventions fostering HA in a language and format that are adapted to the needs of older adults and their informal caregivers, health and social care professionals and decision makers; 2) develop and implement educational material specifically targeted to each of these groups in order to answer an unmet need in offering a unique, timely and interdisciplinary approach to understand the role of ehealth for HA.

3 METHODS

This knowledge translation (KT) project is based on a multidisciplinary collaborative approach between researchers and knowledge users (Baumbusch et al., 2008). We will adapt proven KT strategies with knowledge users' input. Three key groups of knowledge users are involved: older adults and their

family/informal caregivers; health and social care providers; and decision-makers.

3.1 Knowledge that will be Disseminated

In order to translate evidence from the systematic review into coherent information and education material, we have identified the most promising interventions in terms of benefits on important outcomes for older adults. We expect to prioritize two types of e-health interventions, based on the strength of the scientific evidence found in the systematic review, preferences of knowledge users and feasibility of interventions. According to the results of the systematic review, priority areas for e-health interventions supporting HA are: 1) Use of computers/social networks for improving mental health and wellbeing in older adults; and 2) Interactive online programs for promoting healthy lifestyle in older adults.

3.2 KT Strategies

The first KT strategy consists of an evidence brief summarizing findings from the systematic review on ehealth interventions for HA that will be disseminated to health and social care policy makers and managers. The second KT strategy will provide an interdisciplinary elearning program for health and social care professionals on ehealth interventions for HA, including practical information material based on scientific evidence and developed with the input of older adults. The third KT strategy is the development of adapted web content and videos targeting informal caregivers, family members and older adults in order to increase their knowledge and comfort with the use of ehealth technologies based on their preferences and specific needs.

All three strategies are based on evidence on effective KT methods, and we will use different layouts in order to maximize their potential impact. The first strategy is the production of an evidence brief written in a clear and non-technical language that will provide information about e-health interventions with added value in terms of benefits on important outcomes for older adults. Evidence briefs are efficient channels to translate evidence into relevant knowledge for these groups (Moat et al., 2014).

The second KT strategy consists in developing online educational material, designed with the collaboration of health and social care providers and the input of older adults, that will present contextualized evidence from the systematic review

adapted to various contexts and situations of interdisciplinary work. Given the scarcity of such training material, and the involvement of end users in the development, we believe that many groups could be interested in the use of this educational material. For instance, health and social care professional associations could include this material into their continuing education program.

The third KT strategy will have two distinct components: a) an interactive website providing a knowledge exchange platform and, b) the production of short videos (about two minutes) targeting older adults and their informal caregivers. The website will allow to reach a larger audience, while facilitating knowledge sharing with various stakeholder groups, including elderly people. To make information accessible to the population, we will make sure to use clear and non-technical language. In addition, the web platform will allow visitors to share comments on the material presented and suggest ideas about innovative technologies that could be further explored for scientific evidence on their effectiveness. This dynamic KT strategy will provide an open innovation platform that could also inform future research and technological developments based on users' input. For their part, the videos will be created with input from older adults and informal carers recruited with the help of our partners. They will summarize scientific evidence on the main benefits associated with featured technology, which specific groups could particularly benefit from it, and any adverse effects documented. The videos will be accessible from the interactive website mentioned above.

3.3 Implementation Issues

The participation of target groups in the KT strategies will help to adapt knowledge to the Canadian context and the needs of each stakeholder groups concerned by HA. This will be possible due to interactive exchanges with the knowledge user groups. First, the specific ehealth interventions targeted in the KT strategies will be validated at the beginning of the project with representatives of older adults and informal caregivers. Their input will be sought in identifying the important outcomes to be documented in the KT strategies. These interventions will also be the focus of educational material, provided in the form of interdisciplinary online training modules, developed with the input of health and social care providers.

Second, the elearning modules will be developed with the input of health and social care professionals, older adults and informal caregivers. The support of community partners involved in this

project will allow us to develop effective KT strategies in addition to giving us access to a wide network of stakeholders involved or concerned by the issues addressed by our research project. Feedback collected through the evaluation of the KT strategies could directly inform the next phases of this research that will consist in disseminating the information and training material to a larger scale. The participation of different stakeholders in the project will also favour sharing of experience and ideas, notably through the interactive web platform, that could inform the development of novel e-health interventions to support HA.

3.4 Evaluation of KT Strategies

We will assess KT strategies targeting older adults, informal caregivers and family members through focus groups with them. We plan to hold four groups of about six to eight people each to discuss their experience with the use of the interactive website and videos, according to their preferences and specific context (e.g. Was the material easy to understand and relevant? Were the format and the means used convenient?). We will collect information on how they apply knowledge on e-health interventions in their daily life and any challenge they have encountered. Participants to focus groups will be recruited with the collaboration of our community partners.

The training modules will be evaluated by means of an assessment of the health and social care professionals' knowledge acquisition, self-directed learning readiness (SDLR) and satisfaction with the overall content quality, user-friendliness, applicability and relevance of the training material. A web-based questionnaire adapted from our previous evaluation of elearning material will be used to assess learners' knowledge and SDLR before and after the completion of the training modules, and their satisfaction will be assessed after their completion of the program. To evaluate the impact of the dissemination strategy targeted at decision makers, we will document the number of downloads of the evidence brief, and track its use in policy documents in the two years following its publication.

4 EXPECTED RESULTS

The results of our systematic review provide evidence for decision makers on effective ehealth interventions that could be implemented in order to

promote health and wellbeing in older adults. They can also inform training programs for health and social care workers on the use of ehealth in caring for the elderly. These results are particularly relevant for informal caregivers, family members and older adults themselves who need reliable information on the opportunities offered by ehealth for supporting health and wellbeing. Thus, this project will allow translating the best scientific evidence on effective ehealth interventions for HA to inform decision-makers, providers, older adults and informal caregivers through strategies that are adapted to each of these groups.

5 CONCLUSIONS

Given the huge challenges associated with population aging worldwide, ehealth can be seen as one of the strategies that could improve active and healthy aging. It is thus important that effective ehealth interventions are implemented for the benefit of older adults and their informal caregivers, but also the society as a whole. The knowledge derived from this project will contribute to: 1) disseminating evidence about ehealth interventions to the aging population; 2) rising awareness of health and social care professionals regarding ehealth interventions that have proven to be effective and acceptable for older adults; and 3) promoting policy options on ehealth interventions for HA among decision makers.

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