Nursing Informatics 2016
W. Sermeus et al. (Eds.)

doi:10.3233/978-1-61499-658-3-954

e-Health Interventions for Healthy Aging: A Systematic Review Protocol

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Abstract e-Health interventions could contribute to healthy aging (HA) but their effectiveness has not been synthesised. This study aims to systematically review the effectiveness of e-health interventions for supporting HA. We will perform standardized searches to identify experimental and quasi-experimental studies evaluating the effectiveness of e-health interventions for HA. Outcomes of interest are: wellbeing, quality of life, activities of daily living, leisure activities, knowledge, evaluation of care, social support, skill acquisition and healthy behaviours. We will also consider adverse effects such as social isolation, anxiety, and burden on informal caregivers. Two reviewers will independently assess studies for inclusion and extract data using a standardised tool. We will calculate effect sizes related to e-health interventions. If not possible, we will present the findings in a narrative form. This systematic review will provide unique knowledge on the effectiveness of e-health interventions for supporting HA.
Keywords. e-health, healthy aging, intervention, systematic review.

1. Introduction

It is expected that 2 billion people will be 65 years and over by 2050 [1], which has profound implications on the planning and delivery of health and social care. Healthy aging (HA) is defined as the process of optimizing opportunities for physical, social and mental health to support older adults' participation in society without discrimination [2]. e-Health refers to the various uses of ICT in the health sphere and offers older adults the opportunity to access health information and receive health and social care in their homes. Interactive interventions could empower, engage, and educate older adults [3]. Although previous reviews on specific e-health applications found some support of their effectiveness for improving health in older adults [4-5], there are no systematic reviews that currently address the effectiveness of a wide range of e-health interventions for supporting HA in its various dimensions.

2. Methods

We will conduct a systematic review based on the Cochrane Collaboration methods [6]. The following types of studies will be considered: randomized controlled trials, non-randomized controlled trials before and after studies and interrupted time series.

Studies in English, Dutch, French, German or Spanish, published from 2000 up to the date of the search, will be considered for inclusion.

Targeted participants are adults aged 50 or more, which is considered as the beginning of young old age [2], living in the community or in institutional arrangement. Interventions will include telehealth and telemedicine, remote monitoring, internet, smart phones, mobile applications, interactive digital games, electronic information systems. Primary outcomes will consider: wellbeing, quality of life, activities of daily living, leisure activities, biological measures, physical measures, health-enhancing lifestyle, and self-efficacy. Secondary outcomes will include: knowledge; decision-making; evaluation of care; social support; skills acquisition; and health behaviors. We will also consider adverse effects related to e-health interventions on HA in the targeted population, such as social isolation, anxiety, and burden on informal caregivers.

3. Results

Two reviewers will independently assess studies for methodological quality using the Cochrane Risk of Bias tool [6]. Any disagreements that arise between the reviewers will be resolved through discussion, or with a third reviewer. Data will be extracted using a standardized data extraction tool. The data extracted will include details about the interventions, populations, study methods and outcomes of significance. Where possible, data will be pooled in statistical meta-analysis. Effect sizes expressed as odds ratio (for categorical data) and weighted mean differences (for continuous data) and their 95% confidence intervals will be calculated for analysis. Heterogeneity will be assessed statistically using the standard Chi-square and also explored using subgroup analyses based on the different study designs included in the review. If statistical pooling is not possible, we will present the findings in a narrative form.

4. Discussion

This review will provide some insight regarding the role of e-health to answer the increasing needs of an aging population.

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