

Chapter 7

Frailty in the Elderly and Interventions Supported by Information and Communication Technologies: A Systematic Review

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ABSTRACT

Fragility affects the ability to recover from stress conditions as the use of information and communication technologies in health care grows. The objective of this chapter is to identify evidence on interventions using ICT technology to prevent or delay frailty. A systematic review of the literature was used. Search was performed in April 2019

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Frailty in the Elderly and Interventions Supported by Information

through B-on and EBSCO host, in databases Academic Search Complet, with Full Text in MEDLINE, CINAHL Plus®, and MedicLatina. Boolean equation ((Telemedicine) OR (mobile health) OR (computer reality) OR (virtual reality)) AND (Frail Elderly) AND (randomized controlled trial), from 2013 to 2017. Articles followed PRISMA flowchart. Results show that 2946 articles were selected, and 17 met the criteria. The used ICT were virtual-augmented reality, multidisciplinary home-telehealth and telemonitoring, nurse home visits, Wii Fit, and other interactive video games. The chapter conclude that the implementation of ICT to manage self-care at home requires an interdisciplinary, collaborative, and user-centered approach to improve the viability, acceptability, and usability of innovations.

INTRODUCTION

Population aging is an inexorable change. The elderly, the result of physiological and psychosocial processes, become vulnerable, with their multidimensional fragility becoming visible. Elderly frailty challenges governments and societies in developed countries (Chen & Schulz, 2016), and lacks the implementation of policies, prevention programs, or assistance and support to a significant portion of the population and their caregivers (Andrew et al., 2018; Magalhães, Giacomini, dos Santos, & Firmo, 2015).

Frailty is theoretically defined as a clinically recognizable state of increased vulnerability, resulting from the decline associated with aging, loss of functional reserve and changes in functions and multiple physiological mechanisms that compromise the ability to cope with daily or acute stressors. The original approach to frailty focused on the physiological elements, often translated into medical attention focus points such as multimorbidity and chronic disease (Rockwood, Fox, Stolee, Robertson, & Beattie, 1994). Subsequently, the understanding of the concept was broadened. Currently, a multidimensional vision is proposed, characterized by a dynamic state, affecting individuals who experience losses in the physical, psychological and social domains (Gobbens, Luijkx, Wijnen-Sponselee, & Schols, 2010).

Seen from a holistic point of view, frailty affects the ability of older adults to recover from acute illness, injury and other stress conditions (Puts et al., 2017). Dependence is one of the consequences of frailty that must be minimized to allow the person to be kept in a space familiar to them. The supports can be different according to the dimensions that are precariously balanced. The intervention will preferably cover altered dimensions, which intersect with systemic effect, in order to reduce vulnerability and improve the dynamic state.

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