Chapter 12

Contribution of an Intelligent Virtual Assistant to Healthy Ageing in Adults With Type 2 Diabetes

Mara Pereira Guerreiro
UI&DE, Escola Superior de Enfermagem de Lisboa, CiiEM, Instituto Universitário Egas Moniz, Portugal

Isa Brito Félix
UI&DE, Escola Superior de Enfermagem de Lisboa, Portugal

João Balsa
https://orcid.org/0000-0001-8896-8152
Faculdade de Ciências, Universidade de Lisboa, Portugal

Maria Beatriz Carmo
https://orcid.org/0000-0002-4768-9517
BioISI, Faculdade de Ciências, Universidade de Lisboa, Portugal

Maria Adriana Henriques
https://orcid.org/0000-0003-0288-6653
UI&DE, Escola Superior de Enfermagem de Lisboa, ISAMB, Faculdade de Medicina da Universidade de Lisboa, Portugal

Afonso Cavaco
https://orcid.org/0000-0001-8466-0484
iMed.ULisboa, Faculdade de Farmácia, Universidade de Lisboa, Portugal

Ana Paula Cláudio
BioISI, Faculdade de Ciências, Universidade de Lisboa, Portugal

ABSTRACT

This chapter describes the development of a theory-driven and evidence-based digital intervention to facilitate self-care in older adults with Type 2 Diabetes (T2D) and, additionally, its contribution to healthy aging and the individual care plan. T2D is highly prevalent in older adults. Difficulties in adopting and maintaining desirable

DOI: 10.4018/978-1-7998-1937-0.ch012

Copyright © 2020, IGI Global. Copying or distributing in print or electronic forms without written permission of IGI Global is prohibited.
Contribution of an Intelligent Virtual Assistant to Healthy Ageing in Adults

self-care behaviors is associated with lack of glycemic control and subsequent complications, which significantly burden patients, their families, and the health system. The VASelfCare (Virtual Assistant Self-Care) intervention is a software application that provides an interface with a 3D anthropomorphic virtual assistant targeting three key self-care behaviors: medication-taking, physical activity, and a healthy diet. Other VASelfCare elements are intended for nurses providing diabetes consultations, including a web-based back-office with a patient data dashboard, which streamlines integration of care. The application prototype has been co-produced with older adults with T2D, primary care health professionals, and other stakeholders.

INTRODUCTION

The main objective of this chapter is to describe the development of a theory-driven and evidence-based digital intervention to facilitate self-care in older adults with T2D. Secondary objectives are presenting the contribution of the newly developed digital intervention to healthy aging and the individual care plan.

Our current lives are permeated by ‘e-solutions’. Full digitalization is reaching all domains, including healthcare. Chronic conditions and their long-term treatments, such as the highly T2D, place a high burden, both individually and societally. Elderly T2D patients, due to the disease mild symptoms in the first years and its complex approach, tend to impinge on treatment adherence and lifestyle changes. Developing automatic and distant healthcare monitoring ‘e-solution’, tailored to incorporate useful information features as well as to increase motivation, is an excellent opportunity to have a positive impact on patients’ behaviour, care plan outcomes and quality-adjusted life years.

The systematic and structured development of this digital self-care intervention is not only expected to maximize its likelihood of success and facilitate potential replication but may also inspire others researching the field.

Health care professionals may equally find the chapter valuable, as it illustrates how the use of a self-care application can enhance the care plan in face-to-face consultations, through shared clinical data. The fact that behaviour change techniques (BCTs) operationalization is exemplified within the application offers useful insights into its transferability to these consultations.

The chapter is composed of several sections. It starts with a background section, which provides information on healthy aging, as well as the epidemiology of diabetes and its clinical and economic impact, namely in older adults. Next, the evidence on the impact of mobile health in chronic disease management is discussed, focusing
Related Content

Resilient Software Architecture Platform for the Individual Care Plan
David José Murteira Mendes, Manuel José Lopes, José Manuel García-Alonso, Jorge Santos and Luís Manuel Mota Sousa (2020). Exploring the Role of ICTs in Healthy Aging (pp. 13-32).
www.igi-global.com/chapter/resilient-software-architecture-platform-for-the-individual-care-plan/254642?camid=4v1a
Emotion Identification With Smartphones to Improve the Elder Quality of Life Using Facial Recognition Techniques
Sheila Bonilla, Enrique Moguel, José Garcia-Alonso, Javier Berrocal and Juan M. Murillo (2020). Exploring the Role of ICTs in Healthy Aging (pp. 178-193).

Interconnecting IoT Devices to Improve the QoL of Elderly People
Daniel Flores-Martin, Alejandro Pérez-Vereda, Javier Berrocal, Carlos Canal and Juan M. Murillo (2020). Exploring the Role of ICTs in Healthy Aging (pp. 148-165).
www.igi-global.com/chapter/interconnecting-iot-devices-to-improve-the-qol-of-elderly-people/254651?camid=4v1a

Ageing and Health in the Digital Society: Challenges and Opportunities
Elzbieta Bobrowicz-Campos and Armanda P. M. Matos (2020). Exploring the Role of ICTs in Healthy Aging (pp. 34-55).
www.igi-global.com/chapter/ageing-and-health-in-the-digital-society/254644?camid=4v1a