Chapter 2
A Knowledge Triangle Perspective of ICT Innovation in HealthCare

ABTRACT

Chronic diseases (CD) are one of the most critical problems of the twenty-first century. CDs and health conditions are incredibly varied, ranging from asthma, cardiovascular to arthritis to diabetes and from cancers to epilepsy and chronic obstructive pulmonary disease (COPD). Healthcare systems face challenges delivering care across the globe and the premature deaths of an estimated number of 550,000 working-age people across European Union countries is caused by chronic diseases, including heart attacks, strokes, diabetes and cancer. The chapter focuses on the implementation and use of new te-health system and applications as well as the holistic knowledge triangle innovation for enforcing Research, Education, ICT and medical/ healthcare sector. The overall aim of this study is to describe and analyses the main different key contribution of education, research and the health sector professional to innovate and develop the te-health and other healthcare services to ensure that the patients experience a full safety life.

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INTRODUCTION

Modern people's living environments play a critical role in the future of medical and healthcare. Scientists, researchers and professionals are now innovating and preparing for sustainable e-health-solutions for the benefit of patients and caregivers.

The global medical and healthcare is facing challenges with an increasing ageing population, with a higher frequency of chronic diseases. In 1940, Azimov, started in his story "Robbie" about Robots to explore the ideas of how the synthetic mind "or machines" (ICT today) created to serve human beings, evolved and took over the world of men. His vision of 1940 is now true and not imagination any longer. Computers and other technologies already took over the mind of human being. Technology is ubiquitous in modern society and plays an important role in nearly everything that humans do (Surry and Baker, 2016).

Chronic diseases (CD) are one of the most critical problems of the twenty-first century. CDs are the leading cause of mortality and morbidity in Europe. In 2010, they comprised seven of the top ten causes of death, afflicted half of all U.S. adults. In 2013, 133 million persons were suffering from CDs in USA. CDs and health conditions are incredibly varied, ranging from asthma, cardiovascular to arthritis to diabetes and from cancers to epilepsy and chronic obstructive pulmonary disease (COPD). But some infectious diseases such as hepatitis and tuberculosis are considered both communicable and chronic. Recently CDs also include HIV/AIDS, mental disorders such as depression, schizophrenia and dementia and disabilities such as sight impairment and arthroses.

Healthcare systems face challenges delivering care across the globe (Grood et al., 2016). According to OECD (2016), the premature deaths of an estimated number of 550,000 working-age people across European Union countries is caused by chronic diseases, including heart attacks, strokes, diabetes and cancer. It costs EUR 115 billion or 0.8% of GDP annually. The most significant chronic diseases are heart disease, cerebrovascular disease and cancer and the most common cardiovascular disease (CVD) ischemic heart disease (IHD), which is the leading cause of death in Europe. Lung cancer accounts for the largest proportion of cancer deaths, although breast cancer is the leading cause of cancer mortality among females (WHO, 2009).