

Chapter 31

Technology and Cognitive Empowerment for Healthy Elderly: The Link between Cognitive Skills Acquisition and Well-Being

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ABSTRACT

The progressive growth of the ageing population represents opportunities as well as challenges. Consistently, the identification of effective cognitive empowerment programs in elderly population is now a worldwide health policy priority, specially for their preventive effect. In this chapter, within the paradigm of Positive Technology, the main focus will be on the use advanced technologies as effective tools for a new class of applications aimed at improving the traditional cognitive empowerment in elderly. Specifically, the attention will be devoted on how advanced technologies may be used to support elderly in reaching engaging and self-actualizing experiences. On the basis of the most recent evidence in literature, it will be discussed the possible advantages in using such advanced technologies for improving well-being in frail elderly: coupled with an increase in cognitive skills acquisition, the advantages may range increased self-efficacy and decreased subjective weakness, with a consequent improvement in both physical and cognitive performance.

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INTRODUCTION

The ageing population (aged 65 and over) is projected to increase to 1.2 billion by 2025. According to the most recent demographic projections, there are 87.31 million elderly people in Europe (Lagiewka, 2012). The progressive growth of the ageing population represents opportunities as well as challenges. On one side, because of the substantial increase in life expectancy, the onset and prevalence of neuro-degenerative disease will dramatically increase. To date, for example, Alzheimer's disease (AD) is the most common type of dementia, and it is estimated that the number of people affected will reach 81.1 million by 2040 (Ferri et al., 2006). On the other side, although ageing is usually related to physical and cognitive decline, many elderly individuals want to remain physically and cognitively healthy. Consistently, the identification of effective cognitive empowerment programs for healthy elderly populations is now a worldwide health policy priority.

The potential benefits of cognitive empowerment programs for individuals suffering from cognitive impairment and/or dementia have been increasingly recognized (Belleville et al., 2006; Bier et al., 2015; Buschert, Bokde, & Hampel, 2010; Jean, Bergeron, Thivierge, & Simard, 2010; Thivierge, Jean, & Simard, 2014). Moreover, the potentiality of cognitive empowerment programs is now accepted in healthy elderly populations as well (i.e., older individuals without current diagnosable cognitive impairment), especially for their preventive effect (see for example, Chapman et al., 2015; Kelly et al., 2014; Rebok et al., 2014; Willis et al., 2006).

An interesting recent study carried out by Hudson and colleagues (Hudson, Day, & Oliver, 2015) helps us understand why the definition of effective cognitive empowerment programs for healthy elderly populations may be particularly important. Indeed, Hudson and colleagues (Hudson et al., 2015) enrolled six older sedentary individuals in an exercise programme and interviewed them about their attitudes towards physical activity and their physical self-perceptions and identity. Participants' stories highlighted that while older adults may perceive exercise positively, their existing narratives of age-related decline may be resistant to change. The results of this study highlighted that it may be essential for all elderly people, cognitively impaired or not, to participate in cognitive empowerment programs since these kinds of activities may positively stimulate the elderly to change their attitudes towards age-related decline by increasing their self-efficacy. Indeed, what is crucial for a successful change is the increase in their sense of control. Participants at the beginning of the exercise programme described some existential challenges as well as their resolution of these. From this perspective, the possibility to participate in effective cognitive empowerment programs may become a resource both to delay cognitive impairment associated with ageing and to stimulate crucial cognitive skills fundamental to cope with the decline associated with an ageing body. The idea that cognitive empowerment programs can delay cognitive decline and improve sense of control in healthy older adults has dramatic consequences for its potential application. Cognitive intervention may help older individuals because they retain the cognitive capabilities to learn and apply sets of new strategies to improve their well-being. If designed properly, cognitive interventions may improve the cognitive functioning of elderly individuals and alleviate their anxiety resulting from their cognitive and physical difficulties related to both normal ageing and age-related disease.

The question is how to design and implement effective cognitive empowerment programs. To understand the role of cognitive empowerment programs for the elderly, the different types of traditional approaches will be presented alongside their specific characteristics in the following paragraph.

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