Chapter 7
Facilitating the Adoption of Digital Health Technologies by Older Adults to Support Their Health

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ABSTRACT

With over 50% of older adults in the United States managing at least one chronic condition, it is crucial to understand how to promote their self-management of positive health behaviors. Health interventions through digital health technologies are becoming more commonplace. Theoretical models related to health behavior change and technology acceptance can guide the design of these healthcare tools and lead to adoption by older adults to support their health. This chapter provides an overview of health behavior change and technology acceptance models to inform the development of digital health technology for older adults. This chapter illustrates the application of these models by describing two design personas that represent human factors designers. This chapter discusses the lack of inclusion of technology adoption and other long-term concepts and the need for further exploration that could inform understanding of technology integration into everyday health activities.

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INTRODUCTION

In 2019, the world population included 703 million people aged 65 years or over; by 2050 this number is projected to double (United Nations, 2019). With this increase, there will be more people managing chronic health conditions, namely, "conditions that last 1 year or more and require ongoing medical attention or limit activities of daily living or both" (Centers for Disease Control and Prevention, 2020). Approximately 80% of older adults have at least one chronic condition, and 77% have at least two (National Council on Aging, n.d.). Factors contributing to acquiring a chronic condition lie within one's health behaviors, such as diet and physical activity. Health behaviors are "actions taken by individuals that affect health or mortality" (Short & Mollborn, 2015; p. 2) and should be considered broadly to ensure that the various aspects of aging are considered (Ziegelmann & Knoll, 2015). Consequently, supporting health self-management of chronic conditions reduces healthcare costs and improves health outcomes (Bodenheimer et al., 2002; Wheeler et al., 2003). Technology interventions that can support health self-management are promising.

Use of Technology by Older Adults for Health

Technology tools can support older adults in self-managing their health. In contrast to popular stereotypes, older adults are not afraid to use technology (Mitzner et al., 2010). The use of healthcare technology by older adults is well-illustrated by a recent report from the Pew Research Center (Vogels, 2019). The report focused on data from adults born between 1945 to 1996 and technology use across generations. Vogels (2019) reported that 25% of adults over age 50 used a smartphone to get health information and track health, 21% used a tablet to get health information, and 7% used a tablet to track health. Although they tended not to be early adopters, 23% bought smartphones, 10% bought tablets, 7% bought wearable devices, and 1% bought home health and safety devices. This illustrates that older adults are buying technologies, and some are using technologies to manage their health.

Design of Digital Health Technology

Some health interventions incorporate behavior change models and digital health technologies to support the user in making a behavior change. Ronquillo and colleagues (2020) defined digital health technology as "the use of information and communications technologies in medicine and other health professions to manage illnesses and health risks and promote wellness. Digital health has a broad scope and includes the use of wearable devices, mobile health, telehealth, health information technology, and telemedicine." Digital health technology, like any technology, can