Chapter 1

Back to the Basics:
The Importance of Considering Health Literacy in the Development and Utilization of Consumer E-Health Interventions

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ABSTRACT

Health literacy is a critical foundation that needs to be considered prior to the development and deployment of consumer e-health technologies. The authors indicate the problems associated with the lack of effective health literacy strategies in current consumer e-health interventions and then present a patient-centered, disease-specific, task-relevant, and contextualized health literacy approach. The goal of such an approach is to help patients better understand their illnesses make sense of their health data, make informed decisions, and more effectively manage their health conditions. The authors make five recommendations concerning health literacy in order to make e-health interventions effective. They also describe next-generation health literacy interventions that take advantage of emerging technologies such as speech recognition, natural language processing, artificial intelligence, automatic translation, and augmented reality. Finally, the authors point out a research and development direction towards an intelligent, integrated, and connected consumer e-health solution.

INTRODUCTION

There has been a proliferation of technology utilization in healthcare over the last decade, particularly consumer health. One of the main reasons for this focus is the staggering increase in chronic illnesses and comorbidities, which leads to unsustainable healthcare costs (Curtis, Cheng, Rose & Tsai, 2011). Therefore, healthcare providers are utilizing eHealth interventions to collaborate with patients to help them manage their conditions to prevent exacerbations that are costly to the healthcare system. However, adoption and use of these consumer eHealth interventions by patients have been low. The main factors contributing to the low rate of adoption and utilization is health illiteracy, coupled with low digital literacy, language and cultural barriers of the intended users (Nutbeam, 2000).

Health literacy is of great importance to patients because they need to comprehend the health information presented to them in order to follow their doctor's instructions and actively participate in decision making about their health and wellbeing (Norman & Skinner, 2006b). Health literacy aids patients in proactively managing their conditions to prevent further exacerbations. Health literacy can also help patients in discerning the quality and credibility of health information available online to determine its applicability to their conditions (McCray, 2005). The lack of health literacy, on the other hand, negatively affects patients, their families, their caregivers and the overall healthcare system both in terms of clinical and financial outcomes.

This chapter discusses the significance of health literacy in facilitating optimal chronic disease management and in adopting consumer health technology. It first presents a background of the topic, followed by a discussion of the benefits of health literate patients. The challenges associated with the lack of considerations and effective health literacy strategies in current consumer eHealth interventions are addressed. Furthermore, the challenges concerning access limitations for people with disabilities and the lack of considerations about linguistic and cultural competency are discussed. Finally, practical strategies of how healthcare organizations can begin their journey of promoting health and digital literacy are recommended, and examples of effective health literacy interventions are provided.

BACKGROUND

The World Health Organization (WHO) defines chronic illnesses as conditions/diseases that persist for more than three months and cannot be cured with medications or vaccines (World Health Organization, 2017). Given that chronic illnesses do not disappear, healthcare organizations have to treat chronically ill patients on an ongoing basis for the rest of their lives. The cost of caring for chronically ill patients is economically unsustainable, and patients experience poor health outcomes as a result of receiving episodic care, this has a significant impact on the patient's quality of life (Wodchis, Dixon & Anderson, 2015).

Chronic diseases, such as heart disease, stroke, cancer, chronic respiratory diseases, and diabetes are the leading cause of mortality in the world, representing 60% of all deaths (World Health Organization, 2017). This invisible epidemic is an under-appreciated cause of poverty and hinders the economic development of many countries. In Canada, 68 billion dollars is spent annually on care for chronically ill patients, and that amount rises to 190 billion dollars when the indirect costs (sick days and loss of productivity) are added (Wodchis, Dixon & Anderson, 2015).

Current approaches to chronic disease management are ineffective and result in a low clinical value (Wodchis, Dixon & Anderson, 2015). In addition to suboptimal clinical effectiveness, chronic illnesses

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