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The use of new technologies as a tool for the promotion of health education

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Abstract

New technologies in today’s knowledge society and information technologies (ICT) have become a sign of progress, improvement and quality that determine our lives and have an essential role in health education as it relates to the prevention, diagnosis and treatment of the symptoms of disease.

This article will explore some of the technological advances in the field of health. They have greatly contributed to some very significant changes in the configuration of standard health services.

We analyze some of the major benefits and savings achieved through the use of technologies in the area of health, like increased efficiency and quality of patient care, reduced administrative and operational costs, improved primary health care and optimized access to health care. In addition, we present some of the drawbacks to the use of new technologies in the field of health as found in the literature, such as the risk of misdiagnosis due to possible software errors, and therefore the issue of ethical responsibility.

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1. Introduction

Technologies are an essential element of the knowledge and information society. The information society is bringing us major new technological developments and advances in different occupational realms, and in health promotion it is having an impact by improving people’s quality of life.

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Globalization, the cyber revolution and computer science, economic competition and the broad spread of knowledge as an indisputable factor of progress are multiplying the phenomenon. Information and communication technologies, or ICT, are advancing with gigantic strides. They are affecting our lives, providing drive for change and fresh perspectives in every aspect of human endeavor. The Jakarta Declaration (1997) asserts, “Some [changes] have great potential for health, such as the development of communications technology.”

According to Fumero and Roca (2007, 47), ICT has spread “to all realms of society and forms part of the basic culture of new generations as a consubstantial part of the Social Network.” The Web 2.0, or the second Internet generation, also known as “the Social Network,” provides a way of developing human health promotion and prevention programs. This is due largely to the impressive development of medical technology, which constitutes one of the biggest factors influencing changes in health systems today (Colomer and Álvarez-Dardet, 2001). Because of the speed of technological progress, people are now even talking about the Web 3.0 or the semantic web, whose main challenge is to connect to knowledge, and the Web 4.0 or the ubiquitous web, which will seek to harness the united intelligence of individuals for decision making.

In fact, information and communication technologies enable information to be processed and transformed and are fast becoming a strategic innovative element for health promotion and education in most developed countries.

The rise of new health education technologies is providing significant support and highly important educational content. Health education is not unaffected by these changes. It has gradually incorporated both the Internet and ICT into health education and services that benefit not only health practitioners but also people and society in general.

The possibilities of technology are many. They include health portals and electronic health records, telemedicine services, tele-ICU services and health information networks, which help improve and promote health by assisting us to detect, diagnose, prevent, monitor and treat diseases, manage our lifestyle and improve our wellness and quality of life.

Studies on these topics have proliferated (inter alia, Stroetmann, Artmann, Stroetmann, & Whitehousee, 2011; Philips, 2011; Ekeland and Flottorp, 2012; Mistry, 2012; Kidholm, Ekeland, Jensen, Rasmussen, et al., 2012; Gabarrón & Fernández, 2012; Heart & Calderon, 2013). In addition, a new set of terms not unrelated to health industry practitioners and users has become part of our vocabulary, such as “electronic health,” “e-health,” “mHealth” (Resources, Technology and Health), “Health 2.0,” “e-patient,” “e-medicine” and “eHealth.” eHealth is associated with the availability of tech-related health services, notably telehealth, electronic medical records and mHealth or health via mobile devices.

In this article we endeavor to highlight how new technologies are having a fundamental impact on health education and opening fresh perspectives in the field. Next, we present a rough history of technologies for health education and technologies as a resource for health promotion today. We then address the advantages and drawbacks of technologies as a means of improving wellness and quality of life for people and society.

2. History of health education technologies

The changes health education has undergone since the early years of the 20th century have been caused by the swift development of applied sciences like chemistry, physics, physiology, microbiology and engineering, in their progress toward the development of techniques for disease treatment and diagnosis.

In the 20th century a whole series of new technologies arose for use in disease diagnosis, prevention and treatment, constituting an indisputable factor of progress for people and society. The new technologies, which included computerized axial tomography (CAT), positron emission tomography (PET), nuclear magnetic resonance imaging (NMRI), functional magnetic resonance imaging (fMRI), catheterization and massive sample analysis systems, gradually became incorporated into the health area, increasing both diagnostic and therapeutic efficacy. Table (1) below presents a short history of health technology.

Table 1. Short history of health technology

William Crookes (1869-1875)	British scientist who, in the 19th century, observed electrical discharges into certain gases to study the properties of cathode rays, leading to what was termed the “Crookes tube.”
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