Evaluation of E-health Adoption in Iran

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A R T I C L E I N F O	A B S T R A C T
Article type: Brief report *Article history:* Received: 02 Dec 2017 Revised: 29 Jan 2018 Accepted: 12 Feb 2018 *Keywords:* Care E-health Management	The advances in the diagnosis and management of diseases, especially chronic conditions, necessitates the development of health care systems and are time-consuming. The introduction of e-health system as an efficient tool for the management and care of patients in the recent decades has resulted in a significant success in this regard. However, the implementation of this system accompanies with some challenges in some countries, such as Iran. Regarding this, the present review aimed to discuss the definition of e-health and the barriers of applying this system.

Introduction

Chronic diseases, such as diabetes mellitus, hypertension, and chronic renal failure, are among the leading causes of morbidity and mortality in the developing countries (1, 2). Nowadays, significant improvements have occurred in the diagnosis, management, and prevention of various disorders. This success necessitates the development of the services delivered in the clinics and hospitals. The limited number of direct healthcare systems is a major concern in the majority of the countries (3-5).

On the other hand, aging, along with its associated consequences, is another problem in this field of care system. Even in the high-quality healthcare systems, monitoring of chronic conditions are time-consuming. In the last decades, attempt has been made by most of the healthcare systems to set up a program that can facilitate the delivery of a high-quality service with fewer direct referrals to clinics and hospitals.

E-health

According to the definition released by the world health organization, "e-health is the use of information and communication technologies for health" (6). There are vast arrays of interactive technologies, including smart phones, internet, virtual networks, and voice response systems (5). The e-health services allow the health care providers to keep in contact with other centers and colleagues at the global, national, and regional levels, which can promote the quality of health management (6).

The internet accessibility is provided in most of the countries. The internet has several benefits, such as low cost, availability, and high speed (7). On the other hand, it must be noted that important individual factors, including age, level of education, and availability of internet, can significantly affect the e-health application by

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patients (7).

Barriers to the implementation of e-health

A dedicated digital information system, especially the system designed for medical purposes, is the corner stone of e-health system (8). The major factors contributing to the development of an efficient e-health system are as follows (8):

- Planning and providing a detailed framework to define the resources necessary for a high-quality functional medical information system

- Defining the targets of the e-health system

- Defining the data sources

- Providing a secure data management framework

- Providing an information processing tool for transforming the raw data into an applicable digital format

- Providing an easy accessible system for health care providers

As mentioned previously, the establishment of a high-quality e-health system requires the employment of a uniform strategy and implementation of several steps. Based on the previous studies targeting the identification of possible barriers in the implantation of e-health system, the main factors hindering the development of e-health system are security issues, technical problems, especially in internet accessibility, change aversion, and privacy concerns (8, 9).

E-health readiness or e-readiness

The progression of electronic technologies in many domains, such as business, government, and banking, has resulted in the widespread use of e-readiness concept (10). E-readiness defines the willingness of individuals, societies, and organizations to accept the e-health programs (10). Many countries have attempted to evaluate the possible gaps between the healthcare providers and end users and ameliorate the possible technical problems by the development of an e-health readiness assessment tool (10).

E-health status and adoption in Iran

The foot-prints of e-health in the Iranian healthcare management systems have been recognized in the biomedical laboratories by the application of autoanalyzer kits and printing out the digital results for the patients (11). There are also domestic software developed for patients' hospital admission and discharge, especially for the cancer patients (11). In the last decade, the ICD-10 standard was introduced into the hospitals for the event recording of patients' data

(11). In addition, the hospital information system is another tool developed on all Iranian hospitals with complete backup hardware and software.

Like other countries, there are some challenging factors for the implementation of e-health system in Iran. Based on a recent study conducted by Sharifi et al. comparing the challenges of e-health implementation in Iran and other countries, the following results were revealed (12):

- Lack of standard applications due to multiple data formats

- Cost of e-health systems (i.e., hardware, software, and maintenance) and training

- Legal challenges concerning the rejection of accepting the electronic documents by judicial courts

- Technical difficulties (e.g., network and server problems)

- Educational problems due to different shifts of healthcare providers

- Resistance to change by the healthcare providers, including hospital administrators and medical staff.

Regarding to the significant role of technical informational infrastructure and a common health information network, it is recommended that future policies of health fields be focused on eliminating the barriers of e-health adoption in Iran (13).

Conclusion

E-health care systems can improve the management of care quality in patients.

Several factors can affect the proper implementation of e-health in Iran, like other countries.

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Conflict of Interest

The authors declare no conflict of interest.

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