

Chapter 46

The Influence of National Factors on Transferring and Adopting Telemedicine Technology: Perspectives of Chief Information Officers

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ABSTRACT

Telemedicine has drawn increasing attention as a beneficial healthcare delivery medium, especially in developing countries that struggle with physician and health professional shortages, through providing health services in remote areas. This paper presents the findings of a survey conducted to investigate the national factors influencing the adoption of telemedicine technology in Iran, as a less developed country. Designing a self-administered questionnaire the data were collected from the Chief Information Officers (CIOs) of Iranian healthcare system. The findings indicate that political factors such as Information and Communication Technology (ICT) policies, national data security policies, national e-health policies, national ICT infrastructures and rational decision-making, along with organizational factors such as organizational readiness and implementation effectiveness, are positively associated with telemedicine capability in Iran. However, no evidence was found to support the direct impact of cultural factors on transferring telemedicine technology in the country.

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INTRODUCTION

Healthcare is playing a significant role in the economies of both developed and developing countries. Reports indicate a drastic rise in the share of the economy devoted to healthcare over the past half-century, rising from 5.2% in 1960 to 16.2% in 2008, with expectations that the share may exceed 19% by 2019 (Aizcorbe et al., 2008). With a population of 78.5 million in 2014 (World Population Review, 2015), Iran is one of the most populous countries in the Middle East. National health expenditures in the Iran accounts for approximately 6.7% of the nation's Gross Domestic Production (GDP) (World Health Organization, 2014). Similar to other Middle Eastern nations with a younger demographic, the country faces challenges in responding to huge demand for various public services, including healthcare services. The young population will soon be old enough to start new families, which leads to the population growth and consequently a growing need for public healthcare infrastructures and services. In a country like Iran with huge geographical dispersion of its population, uneven geographical distribution of expertise, health professional shortage in regional and rural areas, and growing healthcare expenditures (Zohoori et al. 2014), telemedicine can be beneficial, if not vital, to patients living in isolated and remote communities. Telemedicine can facilitate collaboration among various parties, including general practitioners, specialists, and patients across geographical barriers and can ensure provision of healthcare services to a broader market.

World Health Organization (WHO), defined Telemedicine as “the delivery of healthcare services, where distance is a critical factor, by all healthcare professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment of diseases and injuries, research and evaluation and for continuing education of healthcare providers, all in the interest of advancing the health of individuals and their communities” (WHO, 1998, p. 10). Many scholars believe that the applications of telemedicine technology may be more cost-effective than traditional approaches to providing care as long as implemented and used professionally (e.g., Hailey et al., 2002; Kifle et al., 2006). In addition, telemedicine enables healthcare systems to improve access of disadvantaged people to high-quality care and provides more equitable and affordable healthcare services to all citizens (Craig et al., 2005).

TELEMEDICINE IN IRAN

In Iran, telemedicine has been accepted as a viable alternative to address the inequality of access to health services, especially in rural areas. It is also used to provide medical assistance at circumstances of natural disaster such as earthquake and flood, which are common in the country. Despite the last decade's efforts of the Ministry of Health and Medical Education to develop e-health platform and infrastructure in Iran, the foundation remains weak and diffusion of telemedicine is low. Past research has highlighted factors such as cost and quality of the telecommunication foundations (Internet, Intranet, space technology, etc.), absence of strict regulations and standards, and lack of reasonable financial supports as important obstacles to effective integration of telemedicine into clinical practice in Iran. Furthermore, researchers have emphasized the essential need for cultural and social programs to raise expert/public understanding of the benefits of such technology (Elahi et al., 2013; Safavi, 2011).

Developed and developing countries have notable differences when it comes to adoption of new technologies. Different levels of technology adoption across countries can be attributed not only to economic

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