Assessment of Kuwait Health System Towards Telemedicine Readiness & Adoption: Organizational and Technical Issues

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Abstract

This study aims to assess the organisational readiness to predict the success of telemedicine system implementation in Kuwait. Semi-structured interviews were conducted with: (1) IT managers to assess the readiness of the technical infrastructure of Kuwait health system; and (2) policy makers to assess the organisation's ability to receive telemedicine. A set of policies and strategies were developed to demonstrate how the Kuwaiti health system could be ready for telemedicine services.

Keywords:

Adoption, health planning, telemedicine

Introduction

New and significant changes are expected in healthcare organisations upon the adoption of telemedicine technology. Implementation of information system (IS) in health care sector is not easy; it is a multi-dimensional process, wherein the failure rate of US projects can reach at least 40% [1, 2]. This failure deters managers and policy makers from easily accepting change. A literature review showed how the adoption of telemedicine depends on acceptance by different stakeholders [3]. Therefore, the success of an IS project relies on meeting the requirements of the users. The importance of readiness appears often in the literature due to the impact that the current abilities of an organisation can exert to inhibit or support telemedicine adoption. In the Telemedicine Maturity Adoption Model by HIMSS, the first level requires providers to have a telemedicine strategy in place, with assurances of regulatory compliance and security [4].

The aim of the research study was to assess the organisational readiness to predict the successful implementation of telemedicine adoption in Kuwait health care system. The research objectives were: (1) To explore and identify the factors that support or hinder the adoption of telemedicine systems from the perspective of the organisation and the technical issues; (2) To develop a policy for overseas referral patients to complement the existing policy; (3) To develop a strategy for optimum implementation of a telemedicine system in Kuwait.

Methods

A qualitative study was used through conducting semi-structured interviews with: (1) Six information technology (IT) managers who were responsible for Information and Communication Technology (ICT) implementation in the six health regions at the Ministry of Health; (2) and seven policy makers who were responsible for overseeing telemedicine adoption.

Our main thematic groups for the interview questions were based on the literature and considered the research setting. Each thematic group was sub-divided into sub-topics: (1) Current referral abroad system, which included size of budget and patients' issues; (2) ICT and telemedicine context, which included ICT use and potential of telemedicine; (3) Telemedicine adoption, which included factors of inhibiting and supportive, and the impact of culture; and (4) Decision makers and organizational readiness, which included existing and new polices, and the role of the Ministry of Health.

Regarding the interviews of IT managers, two main thematic groups were identified with associated sub-topics: (1) Readiness of ICT infrastructure, which included the currant capability of ICT, telemedicine technical requirements, and policy of ICT use; and (2) telemedicine adoption, which included institutional plans and managerial and cultural factors

Interviews were 30 minutes in duration. The interviews were transcribed manually, and thematic analysis was performed, wherein sub-topics were developed and confirmed by the two researchers.

Results

The demographics of the participants (IT managers and policy makers) consisted of all being male and Kuwaitis. All the policy makers were physicians with a minimum of ten years of administrative experience. IT managers were computer engineers and had a minimum experience of five years.

The policy makers confirmed that the Kuwait Ministry of Health had concerns over the size of the budget that had been allocated annually to refer Kuwaiti patients abroad for treatment. They also stated that there were psychological pressures on patients who travelled abroad for treatment, such as emotional effects from leaving their home. Limited awareness and abscence of a leader specialist in using ICT in medicine was attributed to the lack of consideration for telemedicine. All of the participants agreed that telemedicine would be useful and cost effective if implemented properly. Staff's resistance to change, work overload, and legality issues were identified as inhibitors specific to the Kuwait health system. The participants agreed that the cultural and social concerns of the patients should be carefully considered, including supporting privacy and confidentiality through a secure telemedicine system. Policy makers agreed that to avoid misuse new policies should be developed to organise the teleconsultation process.

IT managers stated that available equipment (i.e. computers, networks, servers, printers) in the six health regions in Kuwait were compatible and reliable. However, electronic health

record system implementation has not been completed, and although there are future government plans to enhance internet connection, it currently is not always available. Participants were not aware about the concept of telemedicine. They reported the obvious bureaucracy of the main administration, where its centralization was attributed to a slow decision-making process. Most of the participants indicated that no policy existed for purchasing and use of ICT.

Discussion

Strategies for the implementation of a telemedicine system in the Kuwaiti healthcare system include complete implementation of health information systems and electronic patient records in the hospitals, and awareness campaigns for telemedicine use among the medical departments. [5]

A policy has been developed to demonstrate how telemedicine can be integrated with the Kuwaiti healthcare system. A limitation of this study is the few numbers of participants.

Conclusion

The qualitative approach succeeded in assessing the current technical infrastructure of ICT use in the Kuwaiti healthcare system, as well as the organisational readiness.

References

[1] K. Kimiafar, M. Sarbaz, A. Sheikhtaheri, and A. Azizi,The impact of management factors on the success and failure of health information systems. *Indian Journal of Science and Technology* **8** (2015), ISSN 0974 -5645.

[2] B. Kaplan and K.D. Harris-Salamone, Health IT success and failure: Recommendations from literature and an AMIA workshop. *J Am Med Inform Assoc,* **16**(3) (2009), 291–299.

[3] Abouzahra, M. Causes of failure of health IT projects. 3rd International Conference on Advanced Management Science, *IPEDR, IACSIT Press* **19** (2011).

[4] N. Sokolovish and B. Fera, Advancing telemedicine through an adoption model, in: HIMSS15 Conference, Chicago, Illinois, 2015.
http://assets.fiercemarkets.net/public/healthit/himss15eytelemed.pdf

[5] Buabbas A. *Investigation of the adoption of telemedicine technology in the Kuwaiti health system: Strategy and policy of implementation for overseas referral patients*, PhD thesis,
Brunel University, 2013.

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