

Barriers to the Adoption of Health Information Technology in Arab Countries' Hospitals: Practitioners' Perspective

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Abstract. Health information technology (HIT) is playing an important role in the delivery of health services. Barriers to the adoption of HIT by Arab countries' hospitals (ACHs) are still to be identified, described and understood. The purpose of this study was to identify and describe the main barriers to the adoption of HIT in ACHs. A total of 169 valid responses were received from health professionals working at ACHs that did not use HIT. Content analysis was used to analyse the qualitative data. The results indicated that the main barriers are: lack of financial resources and high cost; poor management and bureaucracy; poor staff IT competency; lack of qualified IT personnel and lack of awareness of HIT value. To ensure effective deployment of HIT in ACHs, policy makers and decision makers of health systems need to consider these barriers when planning for HIT utilization.

Keywords: Arabs, health informatics, hospitals

Introduction

Health information technology (HIT) has become a fundamental necessity of modern hospitals and is considered a necessity to the development of safe, effective and efficient health care systems [1-5]. Governments around the world are in various stages of planning and implementing health information systems [7-9]. Certain impediments can slow down or even halt the efforts to adopt or implement HIT. The following factors were reported as the top barriers to EHR adoption in the US: lack of consistent national standards and code sets, lack funding, concern about physician usage, lack of interoperability, lack of staff resources, lack of regional information network, concern about payer adoption, insufficient financial return, and privacy concerns [10]. Barriers to HIT adoption in developing countries were categorized into 6 categories: infrastructure barriers (poor or inadequate infrastructure, lack of computer hardware and software, poor internet availability, lack of professional human workforce, and lack of training); cost and time barriers; national policies toward HIT; social and cultural barriers; educational barriers, and organizational barriers [11].

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Adoption of HIT by Arab countries' hospitals (ACHs) lags behind developed countries. Barriers to the adoption of HIT in ACHs are still to be identified and described. This study aims to identify and describe the barriers to HIT adoption in ACHs. It will help in informing health policy makers about top barriers and establishing a baseline for selecting effective policies to deal with such barriers.

1. Methods

A descriptive cross-sectional design was utilized to collect data from a sample of health care providers who worked in ACHs for at least one year. Data collection was done via the web during 2009/2010. Participants were invited by email and were asked to share the invitation with their peers. A web-based questionnaire was posted on the website of the principal investigator. It had two sections. The first, included demographic items, attitude items and items pertaining to the use of computerized health information system in the hospital. The second section of the questionnaire was to be completed by those respondents who reported that their hospitals are not using HIT and included open ended questions asking them to identify the most significant barriers to the use of HIT in their hospitals. Content analysis was used to analyse qualitative textual data. The anonymity of participants and confidentiality of their responses were ensured.

2. Results

The barriers section of the questionnaire was completed by 169 respondents. The sample was composed of physicians (42%), nurses (31%), dentists (7%), pharmacists (4%), and others. About one third of respondents worked in Jordan (34%), Egypt (21%), Saudi (13%) hospitals, Syria (8%), Algeria (6%), Palestine (5%), Sudan (3%), Morocco (2%), Yemen (2%), and Iraq (2%). Male respondents constituted the majority of respondents (80%). About 39% of the respondents have a bachelor degree as the highest level of education, followed by masters degree (28%), PhD (11%) and diploma (6%). Sixteen percent of the sample did not report their level of education. Most of respondents worked at governmental hospitals (64%), 12% at private hospitals, and 12% at university hospitals. Data were reported on 7 charity hospitals and 4 military hospitals. Table 1 shows the main barriers to adoption as reported by practitioners.

Table 1. Barriers to Adoption

Barrier	Overall	Jordan	Egypt	Saudi Arabia	Syria
Financial Resources /Cost	54%	58%	69%	36%	57%
Poor Management & Bureaucracy	37%	32%	49%	18%	36%
Staff IT Competency	25%	16%	37%	27%	36%
Lack of Qualified IT Staff	17%	14%	11%	23%	29%
Lack of Awareness of HIT Value	8%	9%	6%	9%	7%
N=	169	57	36	22	14

3. Discussion

The study identified the following key barriers to HIT adoption in ACHs: lack of financial resources and high cost; poor management and bureaucracy; poor staff IT competency; lack of qualified IT personnel and lack of awareness of HIT value. Two of the main barriers to HIT use in ACHs (lack of financial resources & high cost and lack of qualified IT staff) were among the top nine barriers for US hospitals [10]. Poor management and bureaucracy, although was the second most common barrier in ACHs, it was not reported among the top 9 barriers in US hospitals. This finding indicates a negative perception toward hospital management by practitioners. The same applies to “staff IT competency” and “lack of awareness to HIT value”. The perception of “financial resources and cost” as a barrier was clearly the lowest in Saudi Arabia when compared to the other less affluent Arab countries. On the other hand, lack of qualified IT staff was perceived to be a barrier mostly in Syria and Saudi Arabia.

Short and long term policies to deal with these barriers are to be established. More financial resources are to be allocated toward the development of qualified IT human resources and the development of information systems that fit the local needs. Medical and health curricula should be revised to include and integrate HIT. In addition, new programs in health informatics should be established to train health professionals specialized in the management of health information systems.

More research is needed to describe in more depth and from different perspectives and at different settings utilizing different methodologies and sources of data to achieve a better understanding of the different barriers toward adoption of HIT in ACHs.

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