

An Empirical Research of the Challenges to E-Health Initiative in Jordan

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Abstract

Purpose-This study aims to explore the perspectives of healthcare providers on the challenges that impede the development of e-health in Jordan based on a taxonomy of challenges that was developed from the pre-existing literature. **Design/methodology/approach-** Thirty Five semi structured interviews were conducted with heterogeneous individuals. It relied on the template analysis approach as well as the NVivo software to analyze and interpret the data. **Findings-** This study adds some unique findings that were not mentioned previously. These are; Arab Spring, Tax Evasion, Waste, Doctors Role as Managers, and Culture of Blame. These findings emerged exclusively from the Jordanian, Islamic and Arabic context that the study investigated. **Practical implications-** The study found that all of the discussed findings, apart from Arab spring, are directly related to human and cultural issues. These two aspects appeared to have a huge impact on the development of the e-health in Jordan and consequently e-health leaders should come up with innovative strategies and change management techniques that can help in managing or reducing the effect of these particular issues in order to ensure a smooth and successful implementation the e-health initiative. **Originality/value-** This is one of the very few studies which attempt to evaluate the E-Health initiative in Jordan. This study is of a significant value as it does not only confirm previous literature about challenges to e-health but it also adds some unique findings that were not previously mentioned.

Keywords: E-health, challenges, Jordan, developing countries, Arab spring, Wasta.

1. Introduction

Undoubtedly, the availability of digitized information alongside with the wide spread of the internet, social media networks, Information and Communication Technologies (ICTs) and web 2.0 technologies provide golden opportunities for all types of sectors in different countries around the world to advance, renovate their structure and enhance interactions with stakeholders. Therefore, it is very apparent that different sectors are striving to reap the full benefits of the digital revolution and are utilizing new technologies within their structures aiming at innovating their current systems and transforming the traditional way of doing business. Institutions are encouraged to implement new methods and tactics in the hope of solving existing problems, creating values to stakeholders, improving their outdated procedures, enhancing their performance in addition to the fact that they do not want to lag behind. The healthcare sector is no exception.

The application of the internet and ICTs in the healthcare sector with the purpose of advancing healthcare services and delivery is acknowledged as electronic health (e-health) (Lang, 2014; Marconi, 2002; Reed, 2014). The authors believe that e-health and the adoption of information technologies in the healthcare sector is one of the preliminary steps towards opening governance as it involves creating innovative approaches and functions to healthcare organizations. For example, it has the potential to facilitate management of limited resources (Ruxwana, Herselman, & Pottas, 2014).

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It also allows for the establishment of new platforms between research environments and healthcare and it assists in the incorporation of new scientific proofs into practice (Al-Dosari, 2014). Moreover, it generates opportunities for all types of collaboration, and allows healthcare institutions to be more responsive, provide services of high quality, offer quick services delivery, empower stakeholders, and increase effectiveness and efficiency (Marconi, 2002;). Furthermore, the adoption of information systems and new technologies in the healthcare field assist institutions to save time, enhance communications, increase accountability, reduce medical errors, interact transparently, better streamline expenditures, get immediate real-time information and consequently make better decisions (DePhillips, 2007; Inokuchi et al., 2014; Sitting and Stead, 1994).

However, despite the extensive benefits that are associated with the adoption of ICTs in the healthcare sector, the sector is ranked the least amongst the information-intensive industry when it comes to investments in ICTs (Bates, 2002). Additionally, evidences show that most e-health initiatives are not progressing as expected (Barakat, et al., 2013; DePhillips, 2007; Mantzana, et al., 2007; Paul, et al., 2012), and that the majority of e-health initiatives end up with failures when being evaluated especially those implemented in developing countries (Gauld, 2007; Heeks, 2006; Ruxwana et al., 2014; Silverstein, 2012; Sitting and Stead 1994) due to the many challenges and barriers that hinder the development.

The researchers explored the relevant existing literature and discovered that there are several theoretical and empirical studies in the literature that address the challenges that affect the implementation of e-health projects in both developing and developed nations. However, it was found that empirical studies in reference to the challenges within the context of Jordan are next to nothing and out of those limited studies; the interpretive qualitative studies are either old (i.e. Rawabdeh, 2007) or paying more attention to the patients' perceptions (Hundt, et al., 2012). Therefore, this research is of a significant value as it is one of the preliminary interpretive studies that empirically investigate the key challenges that hamper the development of the e-health initiative in Jordan based on the perspectives of the system providers. In order to achieve the research aim, the following 3 questions have to be answered: 1) What does the existing literature provide in regard to the challenges that influence the adoption of e-health systems around the world?, 2) How do healthcare providers perceive the challenges that influence the development of e-health initiative in Jordan?, & 3) Do findings of the empirical work in Jordan confirm, oppose or add to the current literature with respect to the challenges that influence the adoption of e-health initiatives?.

It should be noted here that the researchers are fully aware that Jordan has a long way to go before reaching an ideal implementation of e-health. As a matter of fact very few developed countries have come close to achieve excellent e-health. But, in order to avoid total failures, ensure sustainable development, and make it a reality that could lead to achieving opening governance in the future, significant actions need to take place. The efforts in producing this research will serve as one of the action steps that can help in working in the direction of this ideal as it can improve and support the decision making process about the implementation of e-health in Jordan (Khammash, 2012).

1.1. Reasons Behind the Choice of Jordan

Jordan, officially known as the Hashemite Kingdom of Jordan, is an Arab nation that is located in the Middle East region. The official language is Arabic and the official religion is Islam. The country is bordered by Iraq from the east, Syria from the North, Saudi Arabia from the south, and Israel from the west. It is a small country with a population of 6,530,000 and an area of 89,318 square kilometers (Jordan Department of Statistics, 2013).

Jordan possesses many contradicting characteristics. For instance, it is an oasis of peacefulness and stability compared to most bordering countries in the Middle East zone. The country also has the potential to be the Singapore of the Middle East with respect to ICT applications (Ciborra and Navarra, 2005). Moreover, the vast majority of the population (59%) is youth (Jordan Department of Statistics, 2013) who acquire above standards level of computer skills (Central Intelligence Agency, 2014). The literacy rate is listed at 91% which is one of the highest in the region. Additionally, Jordan is a regional ICT leader and is recognized globally as an exporter of ICT goods and services (Int@j, 2013). The healthcare sector is considered amongst the best performing sectors in the Middle East region and Jordan is considered to be the forefront of medical tourism amongst all Arab countries (Khammash, 2012). On the other hand, Jordan has limited natural resources, large budget deficiencies and relies greatly on foreign assistance. Also, a reasonable size (13%) of the population live in poverty, are unemployed (12.2%) and have limited access to the internet and health services (United Nations Development Programme, 2013).

Furthermore, corruption and favouritism acts are widely spread in the society (Loewe, et al., 2007) and there is no clear policies, regulations and requirements regarding many procedures inside the public sector (Ciborra and Navarra, 2005).

The former mentioned facts demonstrate that although Jordan has many of the requirements and capabilities that could facilitate the transformation towards e-health but at the same time there are various destructive hindrances that can limit and negatively influence the development. That makes it an interesting case to be examined as an exemplary of a developing country.

2. Literature Review

The study conducted a thorough review of the literature in health informatics and other related disciplines in order to gain an in-depth understanding and rich descriptions about the subject being studied. The following taxonomy of challenges is based on the researchers' effort to synthesize the challenges and barriers to e-health initiatives around the world as outlined by the various scholars mentioned below.

Financial Challenges; which include funding issues, high cost of e-health technology such as e-monitoring devices, high cost on patients if they need to travel to a certain place to use computers, lack of financial incentives and rewards, absence of evidence about the economic benefits of health information systems, financial concerns, insufficient financial resources, no healthcare savings, and lack of capital to support maintenance costs (Kaye et al., 2010; Al-Dosari, 2014).

Technological Challenges; which include lack of technological skills and training, poor reliability of the system, hardware failures, connectivity problems, monitoring machines problems, system errors, lack of computer literacy, unnecessary updates and upgrades to current functional software, mistaken functioning of videos, lack of access to technology, lack of computers, lack of electronic communication capabilities, multiplicity of screens, lack of technical support, difficulties dealing with technology, diversity of options and navigational aids, issues in system maintenance and software updates, lack of feasible technological infrastructure, lack of utilization of computers in health, technical issues and concerns, complicated unfriendly systems, inadequate technical staff, poor network coverage, and the amount of data being transferred (Menko et al., 2013).

Human Challenges; which include shortage of skilled IT health workers, lack of knowledge, lack of human resources in certain areas, lack of qualifications, absence of professional employees, lack of previous experience and history with health information systems, lack of convenience, lack of response, inability to remember username and password, lack of stakeholders' involvement, team characteristics, lack of trust, lack of trained health personnel, human anxiety, stakeholders acts towards the system, incapability to learn, and lack of typing skills (Azubuike and Ehiri, 1999; Campbell, et al., 2001; Gagnon et al., 2014).

Socio-Cultural Challenges; which include negative attitudes toward e-health, wrong perceptions about technology and its effect on the workflow, fear of affecting the relationship between patients and health care providers, lack of physicians' acceptance, perceived ease of use, gender inequalities, professional norm, age factor, peers influence, disability issues, specialty, fear to lose interactions with patients, narrow understanding of the importance of e-health systems, depersonalize healthcare, low morale, religious beliefs that prevent individuals from providing certain statistics, low income, poverty, unemployment, lack of mobility, negative relationships with tutors, longevity of patients, corruption, human behaviors and beliefs, lack of motivations, change resistance, lack of commitment, lack of perceived benefits, lack of buy in amongst all kinds of stakeholders, and digital divide (Davis, 1973; DePhillips, 2007; Currie and Finnegan, 2011; Matar and Al-Nabhan, 2014).

Legal Challenges; which include lack of policies that support information sharing, Lack of legal pressure on individuals to register important events such as birth and death, regulatory problems, in sufficient policies, legislations and law issues, issues of governance and compliance, lack of agreements on information exchange, in addition to the changes in organizations' policies (Yasnoff et al., 2000; Hage, et al., 2013).

Organizational & Management Challenges; which include coordination problems, administrative issues, information sharing problems, standardization of information, availability of multiple and parallel information, organizational culture, fragmented health systems, data interoperability, lack of synchronization, lack of training, absence of strategic organizational processes, Lack of insights and vision, diversity of requirements amongst specialties, insufficient physical assessment parameters, insufficient demonstrability of the outcome, hospital size, level of healthcare, ownership issues, legacy of traditional paper system, variation in health systems, disruptions in workflow, complexity of implementation, diverse sources and user requirements, poor integrations, insufficient health data collection systems, lack of incentives, poor working conditions, lack of agreement amongst stakeholders, logistical issues, inappropriate distribution of the decision making power, low levels of accessibility and availability, services that do not meet the requirements, the dynamic nature of healthcare, variations in purchasing power, neglecting patients' needs, bad management, lack of guiding principles, type of data as some of it might be on papers whereas others are electronic, concerns about future help from system providers, hospital management, nature of jobs in the healthcare sector, changes in roles and responsibilities within the healthcare team, changes in teaching patterns, vague objectives and values, absence of administrative systems to control operations of health information systems, lack of local champions, performance measurement, change management issues, evaluation issues, in addition to absence of a reform agenda and supportive strategies (Marconi, 2002; Heeks, 2006; Khalifa, 2013; Inkouchi et al., 2014; Jarosławski and Saberwal, 2014).

Ethical Challenges; which include inappropriate usage of high quality information in the decision making process, quality issues, poor decisions made by health personnel and mainly doctors, safety concerns, unauthorized dissemination of electronic information, privacy of sensitive information, confidentiality concerns, unauthorized disclosure of privileged information, issues concerning liability, lack of trust, focus on volume rather than quality and efficiency, security of medical data (Mair, et al., 2012).

Environmental Challenges; which include availability of multiple vendors, time constraints, death is a healthcare failure, availability of other competing parties who provide substitutes such as non e-health programs that can provide alternative media for care or communication, donors as some e-health initiatives are donor-driven not needs-driven, as well as market issues (Sitting and Stead, 1994; Miller and Sim, 2004; Paul et al., 2012).

2.1. A Brief Overview of the Healthcare Setting in Jordan

The primary care provision in Jordan is equally shared between three major healthcare service providers in which each of them has its own administration, budget, staff, and centers. The first provider is the Government of Jordan through the Ministry of Health (MoH). The second is Jordan Armed Forces through the Royal Medical Services (RMS). And third is the Private Hospitals.

The accredited medical staff and hospitals that are equipped with the latest medical machinery, the extremely competitive pricing of medical treatments, the no-wait periods for treatment, as well as the therapeutic natural resources available such as the Dead Sea, all add value and attribute as motives for the increasing attractiveness of the healthcare sector in Jordan in comparison to other healthcare sectors in the region and around the world (Khammash, 2012).

In October 2009, a national e-health initiative coined as Hakeem was launched in Jordan by his majesty King Abdullah II aiming at revolutionizing the healthcare sector. Electronic Health Solution (EHS); a non-for profit company is the main body responsible to facilitate the implementation of Hakeem in the Kingdom. The vision of Hakeem is to change the Jordanian healthcare system to become a superior national and regional system known for its excellent quality and services.

3. Methodology

The study adopted a single case study method, which is a common approach for qualitative researchers who are trying to investigate new innovations that are still in their infancy stages of development as it helps in exploring how innovations and context interact (Benbasat, et al., 1987). This method assists in investigating the phenomenon within its real life context and facilitates obtaining rich insights and an in-depth information about the topic of study based on the experiences and feelings of the participants (Yin, 2009). Case study method was a very good choice for us as it gave us the opportunity to interact closely with the participants who increased our understanding to their actions and perspectives because they were more able to share their honest opinions and real life experiences (Baxter and Jack, 2008).

The researchers used semi-structured interviews as the major source for data collection since this type of interviews is simple to be prepared, allows interviewees to provide more clarifications to their answers if needed, and also allows for alterations of the questions' sequence depending on how the interview flows. Additionally, it assists studying sensitive topics and getting some private, confidential and privileged information that participants might be reluctant to share via other methods (Oates, 2006).

3.1. Selection of Key Participants

The aim of this study is addressed from the perspectives of experienced individuals who are practically involved in the implementation of e-health projects in Jordan. Therefore, the data collection process started with a purposive sample by deliberately choosing participants who are more likely to provide considerable information and extra opportunities to learn about the research subject and address the research aim adequately (Oates 2006; Ryan, Coughlan, and Cornin, 2007). The engagement of multiple stakeholders' perceptions is valuable for this study as such participants are from various backgrounds, are at different stages of their profession, and are exposed to diverse schemes and different e-health projects which means that their perceptions, knowledge and preferences for e-health would probably vary from one to another and consequently they can contribute substantially to this study. Later on, snowball and convenience sampling techniques were followed to improve appropriateness and adequacy of data (Fossey, et al., 2002).

Thirty Five interviews were conducted by two researchers with individuals holding diverse roles including chairmen, hospital managers, senior managers, CEOs, legislative bodies, IT directors, board members, university professors, IS engineers, IT trainers, and health workers (i.e. nurses, medical doctors, lab technicians, and pharmacists). The participants represented members of Hakeem program, Electronic Health Solution Company, public hospitals, clinics and centers under the MoH, hospitals and centers under the RMS, private hospitals, Hakeem academy training center, ministries, the parliament, associations in the private sector, universities, and vendor companies.

Data saturation usually occurs after interviewing 8 participants (Yin, 2009). However, data saturation was reached after the 22nd interview due to the fact that participants are heterogeneous so new themes and information kept arising. It was decided to do more interviews in order to attain a larger set which would help decreasing data bias and increasing reliability of the study (Stake, 1995).

3.2. Data Collection Procedures

Interviews took place in Jordan at interviewees' place of work and were conducted in two stages over a period of time lasted close to two and half months. The first stage was between the 27th of July and 2nd of September 2013. The second stage took place between the 7th of December and 4th of January 2014. All interviews were conducted by a face to face meeting and in Arabic language. Interviews duration ranged between 45 – 90 minutes. 18 of them were audio recorded and extensive notes were documented during the interview. The researchers prepared an interview guide that consists of 16 open-ended questions which are mainly based upon the taxonomy of the challenges which study created. Although previous literature is important to assist structuring the context of the interview, the study avoided direct reference to the literature in order to reduce the bias, avoid pre-conditioning answers, and allow participants to lead the discussion. The researchers also made sure not to suggest any concepts that did not originate from the participants uttering.

3.3. Ethical Considerations

The study followed Boeije (2010) suggested ethical principles. The researchers asked all participants to sign a consent form and gave them an information sheet that describes the research aim, the voluntary nature of participation, the freedom to withdraw from the interview, the choice to refuse answering certain questions, and that participant's identities and the information provided will be kept anonymous. Moreover, the researchers initially gained the approval to conduct the empirical study from the MoH since it is the main body responsible for the implementation of the e-health projects in the Kingdom, and then obtained the consent of each participating entity separately.

3.4. Data Analysis Procedures

All interviews was transcribed and translated to English. Template analysis approach was used as it assists in analyzing huge amounts of data. It starts with a production of themes by coding the textual documented data into segments, then grouping similar segments together to generate broader themes and categories (King, 2004).

The researchers uploaded all interviews transcripts to the NVivo software in order to simplify and accelerate the analysis process. Then, fragmented the text into codes and stored them as free nodes in the NVivo. The coding process was mainly done based on the pre-identified taxonomy that included list of codes that represent the challenges of e-health found in previous literature studies. After that relevant codes (free nodes) were gathered into broader themes and transferred them to tree nodes. Each tree node exemplified a specific and broader category. However, the researchers had to frequently revisit and alter some previous codes in order to add them to the new themes if applicable. Also, the researchers had to repeatedly revise the tree nodes because new codes were constantly emerging whereas some codes were deleted and others were separated into detailed sub-codes, which ultimately led to create a hierarchal structure within each tree node representing the final template. The final template helped us make sense of the data and figure out connections between categories.

4. Research Findings and Discussions

Six key challenges have been found to influence the development of e-health within the Jordanian context; Arab spring, Tax evasion, Culture of blame, Change resistance, Wasta, Doctors role as managers. These are described next.

4.1. Arab Spring

It has been almost 4 years now since the Arab Spring took place and swept many of Arab countries including countries in the Middle East, North Africa and Gulf States such as Syria, Jordan, Iraq, Tunisia, Libya, Egypt, Morocco, Yemen, Oman, and Bahrain. Male and female protesters in these countries were demonstrating to express their frustrations and protest years of oppression, inequality, poverty, and corruption to name few.

Jordan so far has managed to survive the peaceful demonstrations only without the bloodshed, destruction and economic catastrophe similar to what had taken place in other affected regional countries. This might be due to the fact that King Abdullah II is viewed nationally and internationally as a moderate leader with vision to move the country forward ever since he took power back in 1999. King Abdullah II immediately and positively reacted to demonstrations in the Kingdom; he instructed the government to start the desired changes and encouraged the government to work closely with the parliament as well as the people in order to see what should be done to improve conditions and alleviate Jordanians lives.

Although these acts helped Jordan to internally survive the recent protests and demands of the nation but it definitely could not help avoiding the external pressure and the consequences that it brings with it. For example, many people are fleeing to the Kingdom to escape from conflicts in their own countries. These people are in dying need to get shelter, food, financial support, health services and education which put a big strain on Jordan budget and resources taking into consideration that the country already lacks natural resources and is ranked one of the 10 poorest nations for water resources in the world (Al-Amir, 2014). This point was raised by one of the interviewees who hold a sensitive and high position in the government, when she acknowledged:

“Jordan’s financial and natural resources are very limited. It’s not a petrol producing country like the Gulf States. Ever since the Arab spring came about, thousands of refugees have been entering the country on a daily basis. The kingdom had to provide them with all kinds of care. Although His Majesty King Abdullah II has been asking the international community to help in and intervene with this human crises, but the assistance we are getting in order to handle this situation is next to nothing. We had to build new hospitals for those refugees and bring equipment and staff to operate these hospitals, which created a huge burden on the country”. This statement is in line with the study that was conducted by (Ajluni and Kawar, 2014).

Wars and conflicts that are taking place in surrounding Arab countries are the main cause that led to more workload and in many occasions even double the workload for health personnel including doctors and other medical and administrative staff. As one physician who works at MoH declared:

“Most of the medical staff in many of the public sector hospitals and centers became overloaded with work due to the increasing numbers of war casualties, coming from other neighboring countries, which need to be seen, treated and cured. The researchers strongly feel that this is affecting the progress of not only the e-health project but also the provided services”. This suggestion is also acknowledged by the (MoPIC, 2013).

Another problems aroused from the unstable political climate in the region is the massive change in government priorities as well as the constant reshuffling of key political leaders and resources, as explained by some managers and employees who work at public hospitals and clinics:

“Jordan’s location in the heart of a war zone forced the government priorities to drastically shift from focusing on ICT initiatives to the safety of the nation. The government is currently concentrating on handling critical political situations that might extremely destabilize the country. Most of the available resources are redirected towards investing in security which caused lots of government projects and initiatives including Hakeem to be postponed. Within the last year only Jordan had two different ministers that have dissimilar visions and plans. The drastic changes performed by each of them inside our ministry caused confusion to the employees and delayed the advancement of many projects”. His views are aligned with the study that was conducted by (Wazani, 2012).

On one hand, the shift of government focus was justified and referred to the fact that the government is trying to survive the current crises with minimum losses and best ways possible by taking all actions needed in order to decrease the unemployment rate and reduce the inflation rate. As a parliament member clarified:

“The refugees entering the country are competing with the locals for jobs and sustenance especially that they are willing to accept much less than what the locals will accept to take for the same job. So, this created intense competitions for an already shortage in available employment jobs which is one of the major causes of frustration for Jordanians who believe that they should have the priority to work above any incoming strangers or refugees. And that is a big government concern because the country has already experienced many protests and rallies demanding better work opportunities and better paying jobs which could easily end up with a revolution similar to the ones taking place in the region. Hence, the main focus of the government now is definitely creating more job opportunities and quieting down the angry crowd with quick-fix mentality such as increasing the salaries of military personnel, government and public workers rather than allocating budget to IT projects”. This statement is also acknowledged and supported by (Wazani, 2012).

On the other hand, the continuous reshuffling of government cabinet by the king, which is within the Monarch power to exercise according to the constitution when major problems and threats face the nation, was not welcomed at all from other participants’ points of view. They argued that this issue leads to a continuous change in the management staff and employees within their institutions; because most new political leaders or ministers appointed usually bring with them people that they are familiar with and can trust. Those new workers might lack the qualifications needed for the job and are only appointed due to their connections which affect the progress of e-health projects. Additionally, some interviewees pointed out that the agenda and the strategies of the institution got affected too and change tremendously according to the perspectives and the vision of the new leader. This caused a complete termination to the implementation process of e-health in one of the hospitals as confessed by one participant and slowed down the progress in many others. Angelopoulos et al. (2010) is of the firm opinion that major national projects in the country should be forcibly implemented regardless of the leadership and management changes.

4.2. Tax Evasion

Tax evasion is a widespread phenomenon in most developing countries including Jordan especially when it’s compared to developed countries. Scholars debate about the reasons that push individuals and institutions to avoid paying the required tax payments. For instance, Uslander (2008) argues that people are more willing to pay their taxes when they are convinced that there is a fair legal system that treats everybody fairly and equally. Scholz (2007) also believes that if people are having doubts that others are not paying their tax payments, they will refuse paying theirs too. Unfortunately, throughout developing countries, most individuals have a biased perception that the legal system is not fair and that powerful and privileged people can escape with corruption, fraud and tax evasion (Uslander, 2008).

Even though the majority of people prefer to stay registered tax payers in order to get the public benefits but they do not report their exact income to the authorities to avoid the deduction of a higher amount of their income (Uslander, 2008). Institutions at large including health care ones are no different. Some participants discussed this issue during the interviews and affirmed that private hospitals in specific might not like to implement Health Information Systems (HIS) because they are worried about paying too many taxes since everything will be clear, available, and traceable by the government. Hospitals prefer to be in the safe side regarding taxes and therefore they avoid implementing the technology, as one board member at Hakeem program illustrated:

“If hospitals are accused of tax evasion, they will claim that what they are doing is absolutely legitimate since their financial transactions are not available and recorded on a computer system. However, legitimate is not the same as being right.

If they have a system that records all their transactions, then they can easily be tracked and exposed, for that reason they do not prefer to implement such systems". This statement is in line with the study that was conducted by (Al-Naimat, 2013).

Tax evasion is not related exclusively to health institutions in Jordan but it also extends to professionals within the institutions as the following comment shows, which was made by a CEO of one of the vendors companies quoting a study that he read :

"To many doctors, the adoption of the new electronic system means that the government will be able to determine precisely their income and as a result they will end up having to pay much more taxes. They do not want anything to conflict with their personal interests. That's why the majority of them prefer if things continue to be the same". This opinion is supported by the finding that was published in the (Jordan Strategy Forum, 2014).

It was very obvious that paying higher tax rates is a big concern for many of the healthcare providers, and it is a major reason for them to reject the move towards e-health in the Kingdom. A good idea was proposed by a health worker as a solution to reduce this problem, when he suggested:

"Hospitals do not want to implement HIS on purpose because they don't want to report all profits in order to evade taxes. Consequently, the government could implement incentives for hospitals that adopt HIS such as giving them certain tax reduction especially because implementing new systems will be very costly for them". This suggestion is also acknowledged and confirmed by the company in charge of implementing the e-health program in Jordan (UNRWA, 2014).

4.3. Culture of Blame

It was noticed that several individuals being interviewed were kind of blaming Hakeem initiative and its staff for whatever goes wrong. They were directly making negative remarks and statements about Hakeem and were trying to emphasize that the main reason for the delay and lack of progress is due to Hakeem intervening in the way they run their business and that prior to Hakeem they were actually doing well.

Some hospitals had already some form of e-health systems and therefore when Hakeem came about and started pushing the new and different system on them, they became frustrated and confused of having a new dilemma which they are not familiar with. They were comfortable with the existing system being used especially because they were trained on it and as far as they are concerned everything was going smooth. So, the introduction of Hakeem, instead of being seen as help and support to them, was actually perceived as an obstacle and a cause for the delay. They preferred if they could have continued on the same path with the old system without having to integrate the current new system, even though their existing systems are costing them a lot of money whereas Hakeem is offered free of charge on behalf of the MoH as part of his majesty King Abdullah II initiative. They feel that there was no reason to change and that they should have adhered to what they had on hand prior to Hakeem. The following two comments are made by a general director of one of the hospitals and one of the technicians working at a lab they illustrates the blaming mentality that exists amongst the employees:

"We spent on our current HIS over 5 million dinars and the government through Hakeem program is asking us to abandon what we have and go with a system that we are not even sure if it will work. Our staffs are not familiar with the new system and they have never been trained on it. To us, it does not make sense why the ministry of health is asking us to do so. The Ministry of Health as you might already know is the responsible body for implementing HIS at all public hospitals including ours, the full responsibility for the project success rests on them not on us. You cannot hold us accountable for something we do not do". This statement is in line with the finding that was mentioned in the study by (EHS, 2014).

Different interviewees showed carelessness toward implementing HIS and they emphasized the point that if it was up to them they would not have even bothered with it and that Hakeem is being forced on them. Moreover, they refused to be held accountable for the delays in implementing Hakeem or any other things that might go wrong through the implementation process and they stated that the full responsibility of failure or success of the e-health projects in the public sector lies on the people of Hakeem. The following quote from one of the interviewees working as a lab technician illustrates the blaming mentality that exists: A crucial fact that must be pointed out here is that even though Hakeem is the assigned body in charge of implementing the e-health projects in Jordan, but hospitals must be fully aware that Hakeem's role is a facilitator body and that doesn't mean they are responsible for the whole implementation process from start to finish.

The role of Hakeem is to ensure that health institutions are on the right track and that they are heading in the right direction, as one member of Hakeem program affirmed:

“Unfortunately, we have noticed that most of the doctors, employees and even managers at other hospitals think that we at Hakeem have to do the whole implementation process of HIS in their institutions, and based on that they blame us for the unfinished jobs or insufficient training they get. This perception is wrong. Hakeem’s role is only to guide and oversee the implementation process at hospitals, not to perform tasks related to e-health projects on their behalf. So, on many occasions our staffs have to explain their role to hospitals over and over again. Some hospitals respect us, whereas others neglect what we say or suggest”. This suggestion is also acknowledged by the company in charge of implementing the e-health program in Jordan (EHTEL, 2008).

Another staff working at EHS Company was really frustrated from the culture of blame that she has to face and deal with often, when she announced:

“Hospitals are the ones who are fully in charge of implementing e-health projects within their departments; they are responsible for allocating sufficient funds and human resources as well. Therefore they are to be accountable for the services they provide. It is not our fault if they fail to accomplish that. They have to understand and accept the fact that our role is facilitator only, and if we go that extra mile with them sometimes, which we do, that’s because we try our best to help them and that is a favor provided to them, not something we are obligated to do. Sometimes things get messed up”. This announcement is mentioned also in the study that was conducted by (Khater, et.al 2015).

Hakeem and EHS company members who were interviewed strongly believed that hospitals and other health institutions refusal to accept responsibility for the implementation of e-health projects refers to various reasons including lack of ownership, lack of knowledge and skills, fear of taking risks, fear of criticism and fear of being prosecuted. However, to avoid these undesirable challenges, actions need to be taken to get these institutions on board through actively engaging them in the planning process of e-health.

4.4. Change Resistance

All participants agreed that resistance to change can have severe effects on the development of the e-health initiative. However, they gave different reasons behind the resistance to change that occurs. One reason was work overload that takes place during the change. Several health workers became too overwhelmed when e-health projects were introduced and started to get implemented in their hospitals. They clarified that having to work on projects related to e-health in addition to the projects they were already working on has created a huge burden on them and doubled the amount of effort and time needed. Another reason that leads to resist the change is lack of laws and regulations that support the transformation process. The following example given by an IT director who works at a university hospital confirms these issues:

“Even though we have been recording patients’ files electronically for almost 2 years now; the government auditing departments ask us to record things manually too, so everything is basically recorded twice on our end. Then every time they conduct their audit, they have to go through both types of files which create double the work for them as well as for us. This is due to the fact that the law still does not recognize the digital information on computers because it needs a real signature from the doctors or pharmacists which is currently not available on our computer system. This is really an issue”. This statement is also supported by the study that was published by (Dahiyat, 2011).

Resistance to change is noticeable throughout all hospital staff but it is even more obvious within doctors. As an IS engineer exemplified:

“Even though certain projects in our department initially got the full support from the management but unfortunately they did not get the sufficient support from the users. Hakeem introduced some great ideas and systems but most of them failed because they did not get doctors to buy-in into them. The success and the reputation of our hospital depend on these doctors. So if they are not convinced, the hospital immediately ignores the idea. They do not want to upset doctors or lose them to other hospitals. The hospital management overlooks many ideas especially those which involve technology, just because they are not accepted by the doctors and that in my opinion is a big challenge causing more delays in embracing e-health”. This opinion is supported by the finding that was published in the (Khasawneh, 2005).

Different reasons exist that push healthcare providers of all types to resist the change. These are doctors' age (elderly), doctors' personal interests, computer illiteracy, lack of time, lack of motivation, doctors' mindsets, un rational expectations, misconceptions about e-health, negative attitudes, fear to break routine, wrong perceptions about technology, fear of unknown, fear of system control, unawareness of technology values and benefits as well as fear of losing financial incentives. An interesting point which was raised by an IT trainer working at Hakeem academy training center is that sometimes doctors want to and wish if they can use these new systems as it is obviously capable of providing unlimited benefits for them. However, they do not admit it due to the fact that their pride prevent them to admit that they lack the skills needed to use IT systems and hence they just give other reasons and excuses.

The majority of participants appeared optimistic and strongly thought that resistance to change especially from doctors is going to vanish soon with the new generation of doctors who are open-minded and are well familiar with technology because they have been already introduced to it and used it through their study and they have also seen the benefits that it provides. They showed high levels of understanding to the change resistance factor and believed that it is just a matter of time before health staff starts to accept the new changes and realize the countless benefits that the e-health initiative can bring them. They further stated that what is really needed to overcome this issue is continuous encouragement, support, awareness, training and education about the potential advantages.

4.5. Wasta

Wasta or Nepotism is the act of "asking for and/or benefiting from preferential treatment instead of going through official channels" (Loewe et al., 2007: 55). Wasta is a very common and accepted act within the Jordanian culture as well as the Arabs culture in general and it significantly influences the decision making process (Hutchings & Weir, 2006).

Wasta is one of the big challenges that stand in the way and hinder the implementation of the e-health initiative in the kingdom. It enormously affects all organizational aspects including the appointments of unqualified and incompetent individuals in an important and sensitive position. In many cases employees' performance and assessment depend on who is backing-them-up and how well-connected they are to powerful influential individuals in the country. Wasta also influences to a great deal the vendors' bids for projects and who gets them in both private and public sectors. As one pharmacist asserted:

"Just to give you an example we appointed a new pharmacist to work with us here in the pharmacy, once she started to work as one of our staff members, we found out that she knows absolutely nothing about the work required of her and that she was hired and even accepted to the pharmacy school based on Wasta. Things of this nature will actually slow down the flow of work and will definitely lessen the speed of service we offer to our patients". This suggestion is also acknowledged by the (Al-Ramahi, 2008).

One interviewee, who is a physician and also a professor teaching at one of the public universities, was real irritated about acts of Wasta which he thought are becoming the norm amongst people in Jordan which is considered to be a Muslim country. However, people are not following the correct teaching of Islam in their daily lives which is clearly against any kind of Wasta, rather the majority follow corrupted culture and traditions which in many occasions are unfair and immoral. He clarified his point further by explaining that Wasta was described in the holy book (Quran) by the name Shafa'a and that it is encouraged if the intention behind it is noble and will result in benefiting the society at large whereas if the intention is selfish and for individual gain and interests it is absolutely rejected and discouraged because it will lead to corruption of societies. "Whoever intercedes, mediates or helps for a good cause will have a share in its blessings, and whoever intercedes, mediates or helps for an evil cause shares in its burden. God has full watch over all things" (Sourat Al-nisa'a 4:85). Another issue emerged while discussing Wasta is the type of employees who are power hungry. They feel that through their jobs and positions they have the power to control things and others. In some way it gives them a sense of importance in their lives and therefore they would never compromise to lose that feeling and privilege. That is why they are not excited about the idea of having a new system that might reduce or eliminate their power. As one senior manager working at a center under the RMS thought:

"Our secretary who is also in charge of booking patients' appointments was so annoyed once the idea of adopting the electronic system in our center proposed. She was resisting it with all power she got to a point that made her come up with silly excuses to Hakeem members intentionally in order for them not to meet the managers and start the transformation.

When the issue was investigated, we found out that she was giving preferential treatment to family members, friends and other patients who provide Wasta. For example in order to allow them to get seen before others or to fit in unscheduled appointments by cancelling existing appointments for ordinary patients. She was scared to lose control of what she does if the transformation happens". This judgment is supported by the findings that was published by (Ma'ayeh, 2011)

People in Jordan favor dealing with each other in a face to face manner since it allows them to strike a conversation and exchange personal information which could lead to open the door to Wasta. That's why many of them might reject any other approach that could eliminate Wasta to intervene. The existing mentality of people especially employees need to change. It is vital to increase awareness of the benefits of the new system and convey the message to them that the progress and advancements that will be accomplished will serve all Jordanians alike which includes them for sure. Besides, even if the benefits of the renovation are delayed and some might not live enough to see the fruit of it but ultimately it will benefit the next generations which also include their siblings and offspring.

4.6. Doctors Role as Managers

In Jordan, most if not all managers at healthcare institutions are physicians. Being an excellent doctor and famous in the medical field does not mean that you are an excellent manager. On the contrary, you might be a mediocre manager simply because you weren't trained for that and don't have the essential capabilities to run big health institutions. This point was confirmed by a nurse working at a private hospital when she noted:

"This hospital lags behind others because of the hospital manager. Don't take me wrong; he is a pioneer senior physician and his reputation is well regarded in the medical field regionally. But when it comes to management, he neither has the vision nor the skills". This statement is also confirmed in the study that was published by (AMS, 2011)

Besides being a doctor, to succeed in offering high quality health services, one has to be a good manager. Hospital managers and leaders of any health institution need to be individuals who have significant managerial skills and capabilities. Managers should be more involved in the institutions IT practices. Additionally, in order to be able to communicate with all types of stakeholders and to facilitate the process of information sharing, managers need to possess the adequate communication and time management skills. They should be able to meet deadlines, give timely responses and feedback, and provide alternatives and strategic recommendations when needed. Unfortunately, doctors who hold the role as hospital managers in Jordan are not provided with adequate training that can support them or educate them on how to manage large health institutions.

Another issue that was mentioned with respect to doctors being managers is that physicians mainly care about their personal reputation because that is really what make or break their career as doctors. This reputation phobia means that physician's reputation comes as a first priority before anything else; even if it conflicts with the interests of the institution that employs them. For that reason, many of them prefer not to take new managerial risks and avoid investing in new systems that have unforeseen outcomes. Doctors are aware that they lack the managerial expertise and the complete vision as leaders; hence they are fearful of failing and making mistakes which could affect their reputation eventually. They refuse to be accused of failure even if it's an error in management and not in their medical capabilities.

Additionally, sometimes managers are forced to take decisions in the interest of the institution. These decisions in some instances contradict with the interest of other doctors whom they are considered colleagues working in the same field. To avoid this conflict, they sometimes deliberately neglect to make certain decisions in order to keep good relationships with other coworkers. This issue put more emphasis on the fact that the transformation to the new electronic approach in the healthcare sector is a process of change that cannot be guided by merely superior physicians; rather it should be headed by skillful managers who have the capabilities to conduct the change management methods that can safely move the institution forward.

4.7. Contributions

This study offers original contributions to the knowledge on the theoretical and practical levels. First, it provides a rich description of the crucial challenges that impact the development of e-health initiatives in the developing world and particularly in Jordan.

Second, the proposed information about the challenges would be a valuable source for managers, practitioners and policy makers as it can support the decision making process and assist in recognizing the beneficial actions and significant strategic approaches needed in order to ensure effective implementation in the future. Third, it enriches the health informatics literature by adding unique challenges faced by developing countries that were not discovered prior to this research. These are; Arab Spring, Tax Evasion, Wasta, Doctors Role as Managers, and Culture of Blame.

The researchers are well aware that some of the findings are not completely unique as someone might interpret them or categorize them under some themes which have already been discovered by previous scholars. For example one can argue that Wasta and Tax Evasion are some forms of corruption which is perfectly correct but none of the previous studies mentioned these two specific forms of corruption. As a matter of fact aforementioned studies covered other types of corruption and discussed it from a different aspect. Also, the same applies to the findings coined as culture of blame and doctors role as managers since culture and human aspects have been one of the major challenges to e-health as confirmed by many previous studies but once again none has discussed them from the perspective as outlined in this study.

5. Conclusion

It was concluded that conducting research to address the key challenges to e-health is more complicated than what the study anticipated. As e-health is an evolutionary phenomenon, it is not a one-shot project. This means that the shift from the brick and mortar method to the click and mortar one incorporates different phases and that the nature of the challenges vary in each phase of development. The challenges are of a dynamic nature and should not be looked at as static forces; they keep changing over time according to the resources available, the characteristics of leaders in charge, the type of stakeholders involved as well as to the macro and micro surrounding environments. This confirms that e-health is a change management process and if people in charge of the implementation of e-health realize this fact, it would be more likely for them to apply the right and essential tools, resources and strategies that can support the process of change.

This study presented unique findings that were not mentioned in any previous studies. These findings emerged exclusively from the Jordanian, Islamic and Arabic context that the study investigated. It was noted that all of the findings discovered, apart from Arab spring, are directly related to human and cultural issues. These two aspects appeared to have a huge impact on the development of the e-health in Jordan and consequently e-health leaders should come up with innovative strategies that can manage or reduce the effect of these particular issues if they want to ensure a smooth and successful implementation of e-health. The researchers would like to mention that throughout the interpretation of the findings, they did not only discuss the effect of the barriers and challenges but they also provided some deployment mechanisms and management techniques, based on the perspectives of the interviewees, on how to manage the perceived challenges effectively. These suggestions give some insights and ideas that leaders might find beneficial and want to consider.

Finally, besides its challenges, the transformation towards the e-health approach presents massive opportunities to Jordan as a developing nation because it provides new options for innovation that can bring about much promise for advancements and improvements as well as it is one of the steps towards achieving opening governance in the future.

One of the shortcomings of this study is that it is confined to a single context, which limits the ability to generalize the findings to other contexts. However, the findings can be applied in and transferred into other similar environments and contexts (Ryan et al., 2007). In addition, the amount of data collected was extremely high (297 pages of transcripts) which caused the analysis process to be very lengthy. Another issue is that the interpretations of the themes differed from one to another which resulted in creating multiple versions of the template before completely agreeing on and generating the final draft. However, the researchers are of the firm opinion that this has certainly improved our understanding of the data. Also, it is difficult to discuss all the themes emerged from the data within the scope of this paper. Therefore, it was decided to present the most interesting and relevant findings only. The rest of the results will appear in future work.

There are two noteworthy implications for future research opportunities that arise from the findings of the study. For instance, it discovered a critical challenge that is not only related to the Jordanian context, but it extends to other Arab countries which is the Arab spring, therefore more research is essential to investigate the impact of this new challenge on e-health and other ICT initiatives in the Arab world.

Another remarkable implication would be to conduct more studies on the challenges to e-health and other ICT initiatives in Jordan and Arab countries, then compare and contrast the results with the purpose of developing a theory.

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