IMPROVING THE MOBILE HEALTH SERVICES IN THE KINGDOM OF SAUDI ARABIA: RESEARCH AGENDAS

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Abstract

Mobile health (mHealth) has a vital role to play as it can improve communication and enhance the health care processes integration. The aim of this research is to identify the most important mHealth services in the Saudi Ministry of Health (SMOH) mobile applications. To achieve this aim, the study will admit a quantitative research method and the data will be collected through a questionnaire which will be distributed to patients in a selected hospitals, in the Kingdom of Saudi Arabia (KSA). The SMOH developed five mHelath applications in order to provide its mobile health services, however, there are several services which are not offered in these applications including appointment reservation, open and update medical record, patient referee and consultation, physician directory, request medical reports and health risk assessments. The study will figure out whether these services are necessary and important for patients in the KSA. As a research implication, the research findings will expand an area of mHealth services in the KSA, which is still empirically not adequately explored. Additionally, the research results might provide valuable insights for the health professional and administrations in other countries.

Keywords: Health, mHealth, TAM, SMOH, Health services, KSA.

1. Introduction

Using of electronic health technologies (e-health) by patients is an essential issue in the area of telemedicine, particularly, mobile health (mHealth). The mHealth technology is new technologies which have been attracted many health professionals and practitioners across the world. According to [1], its offers media-rich as well as context-aware features that are much useful for applications of electronic-health. Its encompasses the exploitation of the mobile telecommunication, multimedia technologies and their integration into the care delivery system [2]. The mHealth technology includes all mobile devices such as laptops, tablets and smartphones. This research will focus on using one type which is the smartphone as it nowadays has greater potential to enhance healthcare services compared with other devices. Researchers [3] argued that the mHealth has risen the attention of the health care system since the arrival of smartphones and they could entirely change the way health care has been managed and delivered. There are more than 40,000 health Apps are available in the Apple store [4] and it is expected that it will grow yearly with approximately 23% over the next few years [5]. A large number of patients in the KSA use their smartphones to surf the internet instead of the traditional way of using personal computer desktop [6]. The Saudi Ministry of Health (SMOH) currently has five mobile health applications which are available in three main stores include App, Google Play and Windows. These applications have several health services. A qualitative study conducted by [7] recommended to adding other six health services in the SMOH applications which are: Appointment reservation, open and update medical record, patient referee and consultation, physician directory, request medical reports and health risk assessments. However, these services are recommended based on the researcher point of view, not based on a patients (potential end users) real needs. Hence, this study will conduct a quantitative research in order to figure out whether these services are necessary and important for patients as a real end user and to what degree. Based on the research findings, recommendations will be introduced to add only the important mobile health services to the patients, as a result, the quality of mhealth service and efficiency will be increased.

This research proposal is organized as follows. Section II literature review (include the concept and importance of mHealth, improving mHealth services, types of mHealth applications); Section III describes the research methodology; Section IV explains the Data Analysis procedures; Section V presents the conclusion.

2. Literature Review

2.1 The concept and importance of mHealth

MHealth is a general concept including various types of mobile technologies that are used for health purpose. According to [6], the mHealth is a term referring to public and medical health practice, which obtains support from a mobile device such as mobile phones and other wireless devices [6]. For this study purposes, the mHealth means using a specific smartphone application for health and medical-related purpose. There are many advantages for using the mobile technologies in health field such as reducing the healthcare cost, improve clinical efficiency, enhance medical quality and care coordination [8], improve patients' health and to facilitating communication between them and their physicians [9]. The majority of the global population have access to right-time communication and information services via networks of mobile phone [10]. As [11] pointed out, utilizing mobile technology in healthcare has been emphasized as an approach to enhancing health care services. Moreover, mHealth technology can improve communication and the integration of care processes [12, 13], enhance the performance of health care workers [14] improve the health access and delivery [15, 16, 17]. According to [2], the mHealth technologies will gain extended capabilities when used in a combination with each other concerning to consumer health communication.

2.2 Improving of mHealth services

Improving health services should be the priority for any health organization to be successes. The mHealth quality importance has been demonstrated in many research articles. For instance, researchers [18] emphasized that the health service is an essential element of fourth-generation health systems and it is a crucial role for their success and future evolution. In contrast, [19] highlighted that the poor quality leads to complications and the need for additional care, which as a result, raises costs substantially. Researchers in their study [12], proposed three parameters of service quality in mHealth settings which are: Knowledge and competence of the provider (training and orientation for healthcare professionals), the capacity of access and monitoring devices (aware of the limitation of mobile devices), operational compatibility among multiple platforms and interoperability of information systems.

2.3 Types of mHealth applications

The mHealth applications which available in the App store were classified into seven types which are: Drug information, medical information reference, medical practitioners decision support, medical educational tools, disease tracking application, blood pressures application, medical calculators and others health applications (including eye charts, medical images, color test tools and timers remaindering users to take medicine) [1]. The mHealth applications were developed and used in various of health fields, for example, diabetes, obesity, depression treatment [20, 21] patient monitoring, emergency response, emergency management [22] and health conditions (including dementia, dysarthria, autism, Parkinson's disease) [9]. However, it has been claimed that most of the mHealth applications have a simple functionality and does little more than provide information [23]. In addition, according to [4], more than a half of health mobile applications received only less than five-hundred downloads for reasons including poor quality, the absence or lack of guidance on their benefits and the health professionals lack of support.

3. Methodology & Research Model

There are many methods can be used in mobile technologies studies. This study will admit a quantitative approach method and it will utilize a questionnaire in order to obtain data from a sample of patients (research potential participants) in a selected hospitals in the KSA. The questionnaire will be designed to identify the most important mHealth services to the patients. The questionnaire has been chosen as a primary instrument to collect the study data as it matches the areas addressed in this research, which is mHealth technology. In addition, according to [24], it is recognized that the questionnaire (as an instrument to collect data) is vital because of its ability to define and detail many issues characteristics that can be essential for particular readers and institutions. While there are various ways to derive a sample size, however, it is necessary for them to be an appropriate number of members

to achieve adequate and generalize the study findings. Therefore, this study will use the [25] table for sample size as it more appropriate for this study nature. Moreover, simple random sampling techniques will be employed to choose the potential participants. Figure 1 demonstrates the proposed study research stages flowchart.

Figure 1. Research stages flowchart

The study will use the Technology Acceptance Model (TAM) as it is mainly predominant and leading model existing in the information technology acceptance research. Researchers [26, 27], explained that when studying electronic health and health care adoption by health care professionals, the most common adoption models used are the TAM model. Furthermore, most studies published in the field of electronic health applications adoption and use by the patient have used TAM or its extensions (i.e. TAM2) [28, 29, 30] due to its ability to guide these types of research in the technology field.

The objective of this study is to identify the most important mHealth services from the perspective of patients. Thus, using this model as a predictor of using the mHealth services appears to be justified. The study will explore six mHealth services in the KSA. These services are: Appointment reservation, open and update medical record, patient referee and consultation, physician directory, request medical reports and health risk assessments. Figure 2 shows the study research model.

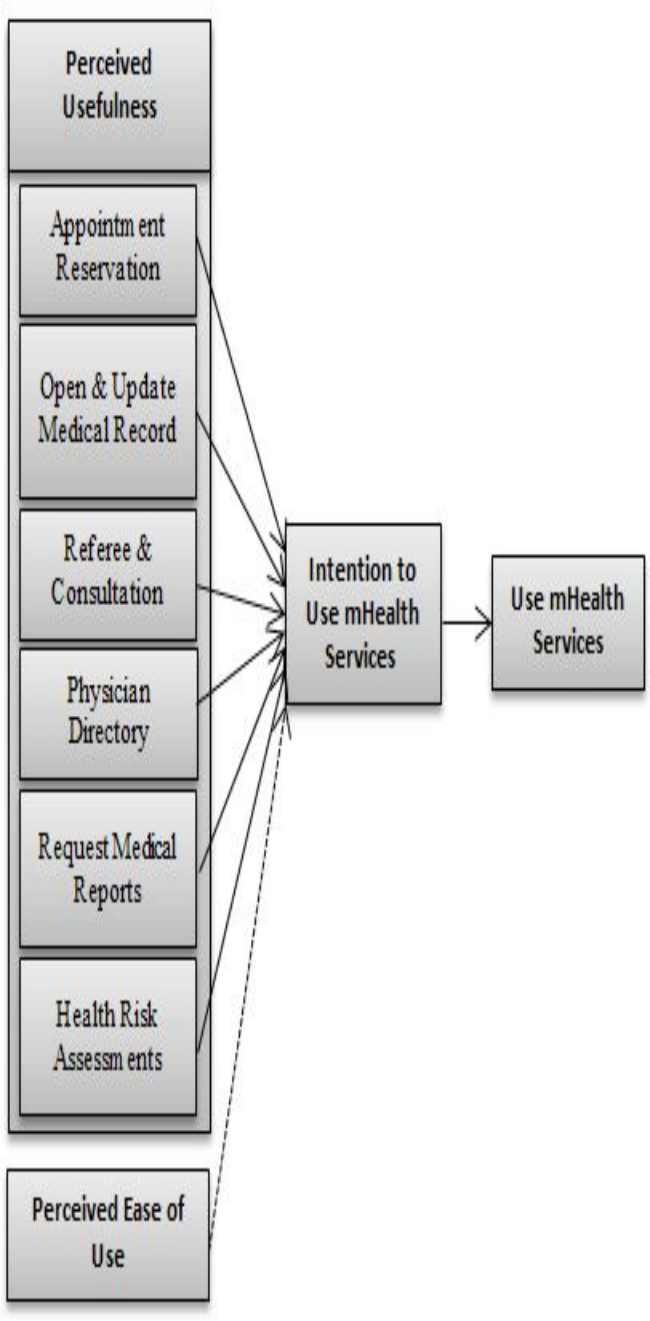

Figure 2. Study research model

4. Data Analysis

The subjects' demographic information well be analyzed for descriptive statistics using SPSS version 22.0 software. Descriptive statistics of the six mHealth services variables will be analyzed for frequency, average and standard deviation using SPSS version 22.0. The reliability of the instrument will be assessed using Cronbach's alpha and the Pearson correlation coefficients will be used to analyze the correlations between the proposed mHealth services variables. To ensure the validity of the data collecting instrument, a pre-test survey will be conducted in a credible scholarly.

5. Conclusion

According to the researcher knowledge, this research is currently the first study which will figure out and presented several recommendations in order to improve the health service which provided in the SMOH mobile applications. This paper will aid researchers and developers to create more useful mHealth applications which include the most important health services for the patients as an end and real users. The study would serve as a guide for health administrators and health practitioners who interested in providing the most important health services in the mHealth applications. Additionally, the study findings might provide useful insights for the administrations of health organizations in other countries.

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