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Mobile Healthcare Design Research: A Special Issue for Information Systems Researchers

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Editorial Introduction

Traditional Healthcare Information Systems (HIS) offer limited provisions to target user groups. These limitations can be seen from a technical point of view, such as for its flexibilities and service oriented provisions or methods. Although it is not very expensive and complicated in nature to build into designs, they often require rethinking on how the provisions would be better fit into the existing HIS settings, while modernising systems. With advanced provisions for flexibilities and greater adoptability, mobile computing and technologies have already become well-accepted by healthcare communities for various practice improvements (Burmeister et al., 2019; Khanom & Miah, 2020; Miah et al., 2017). A lot of healthcare processes and practices are now driven by mobile technologies both in community and clinical healthcare sectors ensuring quality delivery of care services to users or doctors and patients. The efficiency and effectiveness of this type of mobile solution design have been well-researched over the past few years, involving end users such as healthcare practitioners, doctors, nurses, bedside carers and allied health professionals (Bennett et al. 2017; Miah et al., 2017; Teipel et al., 2016).

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With the increasing complexity of designing robust mobile healthcare solutions throughout the applications of different contemporary technologies such as cloud computing, Internet of Things, Data Analytics and other emerging techniques, research studies are still growing in this sector. Encouragements to new studies are of paramount elements in this field, specifically for designing appropriate design methodologies for developing innovative technological solutions. For this, the design methodologies need to be genuinely supportive to address issues of meeting the contextual demands such as patient conditions and treatments, communities' key demands, and the requirements or compatibility with the hospital systems for adequately managing the vast amount of healthcare information. Different design research methods (Miah & Ahamed, 2011; Miah & Gammack, 2008; Miah et al., 2008, 2019; Miah, 2009) in different problem domains have been introduced but it is now a significant task to grow more tailored design methodologies for designing innovative mobile healthcare solutions, associating different technological provisions (for example, Blockchain-based healthcare solution (Prokofieva & Miah, 2019; Wahlstrom et al., 2020), mental healthcare system (Burmeister et al., 2015; Crichton & Burmeister, 2017; Islam et al., 2019) and clinical decision support (Miah et al., 2020; Poulsen & Burmeister, 2019).

Background

Various cloud computing based and other open-sourced technological approaches have been proliferated over the last two decades (Miah et al., 2012; Miah et al., 2017; Miah, 2004), but their suitability and usefulness are still bringing a lot of interest for new studies, continuously improving care delivery demands in healthcare while also improving the quality of care to patients as well as benefiting healthcare professionals in understanding the care process better for patients (Burmeister & Marks, 2016; Miah et al., 2017). Healthcare professionals and researchers from different associative disciplines (medicine, nursing, other health management and businesses) are continuously exploring new research and development within their organisational boundaries. Different technological provisions that are always on demand in healthcare industries, such as modernised supportive features for effective real-time decisions, easily available options for improving the quality of care, care or treatment consistencies, reliabilities as well as assistive information technologies for ensuring effective flow of information, given that information exchange in healthcare and re-inventing new knowledge generation practices are the central needs for the clinicians.

Although several healthcare journals involve publishing the latest research in this domain, few studies in information systems journals have raised this need of improving our knowledge in relation to the design practices. Consequently, this special issue of the PAJAIS sheds some illumination on the research work done in the areas of Internet of Things, Tele-healthcare and other associative technologies, through conducting quantitative and qualitative traditions of studies that focus on multidisciplinary healthcare demands.

In this Special Issue

Out of nine submitted articles we have elected two articles for publishing in this special issue, which are summarised with their titles below:

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Article 1: Internet of Things Adoption for Saudi Healthcare Service

The study explores the relevant literature and how the outcome is used to identify the key deliveries of IoT in healthcare. The study shows the importance of IT applications e.g. the mobile healthcare with the Internet of Things (IoT) innovations. This is a new study area that will have a lot of potential to revolutionise healthcare. In this context, the study has conducted a relevant literature review to position a qualitative, phenomenological investigation that offered insights into the factors affecting IoT-adoption in a developing country's healthcare service. The participants who worked in hospitals and clinics in Jazan, Saudi Arabia, took part in the semi-structured interviews developed based on the diffusion of innovation theory. According to the findings, the capacity of the Saudi healthcare sector to accept and implement a new IT with IoT technologies and its integrations remains a debated issue.

Article 2: The Role of Image quality in telehealth: Adoption challenges in the subcontinent

The purpose of this article was to explore the underlying challenges in the telehealth environment in India and Pakistan that impede the delivery of high-quality images between a patient and health care professional. An exploratory study was conducted among healthcare professionals in India and Pakistan to assess their perceptions regarding image quality, which is used for the diagnosis and treatment decision making. This cross-sectional qualitative study used semi-structured interviews with healthcare professionals in both India and Pakistan. The interviews were analyzed using a thematic analysis, which revealed three major themes. These themes being: ICT infrastructure and connectivity, expertise of persons taking images, and multiple transmission degrading image quality. Findings indicated that in both countries, the main underlying challenge is the lack of consistency in the network infrastructure between urban, rural and remote areas. Additionally, training patients to use mobile technologies to take high-quality images could hold the key to improving the reliability and consequently, the quality of images transmitted between patients and health care professionals.

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