
**FACTORS AFFECTING THE IMPLEMENTATION OF
ELECTRONIC MEDICAL RECORDS SYSTEMS (EMRs) IN
JORDANIAN HOSPITALS**

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Abstrak

Sistem Rekod Perubatan Elektronik (EMRS) merupakan satu aplikasi yang membolehkan akses dan dapatan semula data sejarah perubatan pesakit. Pada masa kini pelaksanaan EMRS hanya meliputi tidak lebih 50% daripada hospital di Jordan, dan penyelidikan untuk mengenal pasti faktor utama yang mempengaruhi pelaksanaan EMRS di Jordan juga adalah terhad. Kajian ini bertujuan untuk meninjau faktor yang mempengaruhi pelaksanaan EMRS di hospital di Jordan. Model konsep, disesuaikan daripada Model Penerimaan Teknologi (TAM), yang dibangunkan untuk mengaitkan Faktor Organisasi (OF) dan Faktor Ciri Individu (ICF) dengan pelaksanaan EMRS di hospital di negara Jordan. Soal selidik tadbir sendiri telah digunakan untuk mengumpul data daripada kakitangan profesional penjagaan kesihatan di dua buah hospital utama yang melaksanakan EMRS sepenuhnya. Penemuan menunjukkan bahawa OF mempunyai hubungan signifikan dengan Tanggapan Kemudahan Penggunaan (PEOU) dan Tanggapan Kebergunaan (PU), ICF mempunyai hubungan yang signifikan dengan PEOU, hubungan Pengguna - Pesakit mempunyai kaitan yang signifikan dengan PU kecuali Autonomi pengguna, PEOU pula mempunyai kesan yang signifikan dengan PU, PU mempunyai hubungan yang signifikan dengan Sikap terhadap Penggunaan (ATU) kecuali PEOU, dan ATU mempunyai hubungan yang signifikan dengan Niat Tingkahlaku Penggunaan. Hasil kajian ini menyumbang kepada peningkatan pengetahuan berasaskan teori tentang penggunaan TAM dalam domain informatik kesihatan. Kajian ini telah menambahbaik model TAM yang menggabungkan PEOU dan PU, dengan mempertingkatkan pemboleh ubah OF dan ICF. Maka, dapatan kajian ini boleh membantu pembuat keputusan dalam merangka strategi-strategi pelaksanaan EMRS di Jordan.

Kata kunci: Sistem Rekod Perubatan Elektronik, Model Teknologi Penerimaan, Faktor Organisasi, Faktor Ciri Individu

Abstract

An Electronic Medical Record System (EMRS) is an application that enables access and retrieval of a patient's medical history. Currently EMRS implementation does not encompass more than 50% of the hospitals in Jordan, and limited research has been done in Jordan to identify the main factors affecting the implementation of EMRS. The aim of this study is to explore the factors that affect the EMRS implementation in Jordanian hospitals. A conceptual model, adapted from Technology Acceptance Model (TAM), was built to relate Organizational Factors (OF) and Individual Characteristic Factors (ICF) to EMRS implementation in Jordanian hospitals. Self-administered questionnaires were used to collect the data from healthcare professionals in two major hospitals that have full implementation of EMRS. Findings indicated that OF has significant relationships with Perceived Ease of Use (PEOU) and Perceived Usefulness (PU), ICF has significant relationships with PEOU, User – Patient relationship has significant relationships with PU with exception of User Autonomy, PEOU has a significant effects with PU, PU has significant relationship with Attitude Toward Using (ATU) exception of PEOU, and ATU has a significant relationship with Behavioural Intention to Use. The finding of this study has led to the enhancement of the theoretical knowledge of TAM's application in the health informatics domain. This study has extended the current model comprising PEOU and PU, by adding the OF and ICF. Consequently, the findings can assist decision makers in formulating EMRS implementation strategies in Jordan.

Keywords: Electronic Medical Record System, Technology Acceptance Model, Organizational Factors, Individual Characteristic Factors

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List of Abbreviations

ACR	American College of Rheumatology
ATB	Attitude Toward Behaviour
BI	Behavioural Intention
CBPR	Computer-Based Patient Record
CCD	Continuity of Care Document
CDO	Care Delivery Organization
CDR	Clinical Data Repository
CEO	Chief Executive Officer
CPOE	Computerized Physician Order Entries
CPT	Current Procedural Terminology
DOI	Diffusion of Innovation Theory
DTPB	Decomposed Theory of Planned Behaviour
DV	Dependent Variable
EFA	Exploratory Factor Analysis
EHR	Electronic Health Record
EMRs	Electronic Medical Record System
EPR	Electronic Patient Record
HIT	Healthcare Information Technology
HS	Healthcare System
ICD	International Classification of Diseases

ICT	Information Communication Technology
ICU	Intensive Care Unit
IT	Information Technology
IV	Independent Variable
JH	Jordan Hospital
KAUH	King Abdullah University Hospital
MI	Medical Informatics
MIS	Management Information System
MoH	Ministry of Health
MSA	Measure of Sampling Adequacy
PCB	Perceived Behavioural Control
PE	Performance Expectancy
PEOU	Perceived Ease of Use
PMR	Paper Medical Record
PU	Perceived Usefulness
SCT	Social Cognitive Theory
SN	Subjective Norm
SNOMED	Systematizes Nomenclature of Medicine-Clinical Terms
SPSS	Statistical Package for Social Science
TAM	Technology Acceptance Model
TAM2	Technology Acceptance Model 2
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action

UMHC	University Mississippi Health Care
UI	User Interface
USA	United States of America
UTAUT	Unified Theory of Acceptance and Use of Technology
UUM	Universiti Utara Malaysia
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

This chapter presents the background information of the research, the research motivation, problem statement and the study's objectives. The chapter also presents the scope of the study and the research contributions. Finally, this chapter ends with a discussion on research strategy and the organization of this thesis.

1.1 Background

Traditionally, hospitals keep paper-based profiles of patients to keep track of patients' illness history, their development and their overall general health conditions. Though this traditional technique has long been adopted, it is not without practical problems. One living example of the shortcoming of traditional hospital profiling systems of patients' data was demonstrated by Hurricane Katrina in New Orleans in the United States of America in 2005. Hurricane Katrina destroyed the hardcopies of medical records of untold numbers of people, hence bringing new attention to the need for electronic medical records. Lost medical records expose patients to considerable risk of medical mistakes because physicians were unable to draw connections between the current health conditions of the patients and their medical history namely on diagnosis, drugs, effects and surgery risks assessment (Terry, 2009).

The increasing numbers of hospitals and the number of patients in recent years have posed a burden to the profiling system of patients, rendering it inadequate or precisely

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