A Study of Factors Affecting Acceptance of Hospital Information Systems: A Nursing Perspective

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ABSTRACT

Background: Hospital information systems (HISs) are widely used in Taiwan, and HIS performance must be carefully evaluated. Nursing personnel are the largest group of staff in a hospital and are the center of care delivery; thus, they play an important role in the adoption and evaluation of HISs.

Purpose: The primary objective of this study was to explore the critical factors affecting the acceptance of HISs in Taiwan from a nursing perspective. On the basis of the technology acceptance model, we used six exogenous variables (system quality, information quality, user self-efficacy, compatibility, top management support, and project team competency) as investigation factors.

Methods: Survey research targeted nursing personnel in the selected case hospital as participants. A total of 545 questionnaires were sent out, and 501 were returned, indicating a valid response rate of 91.9%. Collected data were analyzed using multiple regression analysis.

Results: Results indicate that user self-efficacy, top management support, compatibility, and information quality have significant impacts on perceived ease of use. In addition, top management support, compatibility, and information quality were identified as having significant impacts on perceived usefulness. Furthermore, nurses’ perceived ease of use and perceived usefulness on HISs was found to impact significantly on system acceptance, with 45.1% of the total explained variance.

Conclusions/Implications for Practice: Results can help managers understand key considerations affecting HIS development and use and may be applied as a reference for system development and improvement.

Keywords: nurses, hospital information system (HIS), technology acceptance model (TAM).

Introduction

Healthcare is an information-intensive industry in which healthcare and administrative personnel often need real-time and accurate information to implement clinical treatment, care, management, and other activities. Therefore, using healthcare information technologies (ITs) to obtain real-time, accurate, and high-quality care and administrative information represents an urgent need. Hospitals have invested significant resources to improve IT infrastructure and establish hospital information systems (HISs) to enhance clinical nursing care and administration efficiency and effectiveness as well as to meet the challenges of an increasingly competitive business environment and changing healthcare policies.

Haux, Winter, Ammenwerth, and Brigl (2003) defined HIS as the sociotechnical subsystem of a hospital that comprises all information processing as well as associated human or technical actors in their respective information processing role. Hospital information systems are composed of enterprise functions, business processes, application components, and physical data processing components. The HIS aims to enable the execution of patient-care-related hospital functions, which include patient administration, hospital financial affairs, and legal affairs, among other issues. Therefore, an HIS is an integrated information system (IS) that plays a key role in supporting hospital affairs through the use of appropriate healthcare IT.

The operational definition of HIS used in this study follows the definition of Haux et al. (2003). A national survey on the development of electronic medical records reported that 98.7% of Taiwanese hospitals have implemented medical-service-related IT systems and approximately 89.2% of hospitals have adopted computerized medical records to some extent (Department of Health, Executive Yuan, Taiwan, ROC, 2005). Despite the high HIS adoption rate, not all hospitals in Taiwan achieve the full benefits anticipated. A prior study identified that a key factor affecting the successful...