

Factors Determining Nurse Acceptance of Hospital Information Systems in the Medication Process

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Abstract

A growing interest in implementing Hospital Information Systems to improve the patient safety and nurses' unwillingness to integrate HIS into their workflow, justifies further research into the factors influencing nurses' acceptance of those systems in the medication process. This study recruited practicing nurses from a Malaysian public hospital. A total of 227 questionnaires were sent, and 186 were returned, for a response rate of 82%. Structural equation modelling using the partial least squares method was utilized to evaluate measurement and structural models. The findings showed that nurses' intention to use an HIS was significantly influenced by two factors: trustworthiness of the information and perceived usefulness. Furthermore, these two factors can be predicted by information quality. Consequently, the model explains 72% of the variance in intention to use an HIS. These findings strongly support the proposed model and highlight the important roles of information quality and trust in predicting nurses' intention to use an HIS in the medication process.

Keywords: Medication errors, Hospital information systems, Patient safety, Nursing

1. Introduction

Patient safety is a critical aspect of hospital management with respect to providing high-quality care. The most common threat to patient safety is medication errors, which has been a topic of concern in recent literature (Callen et al., 2010, Chiang et al., 2010, Fahimi et al., 2009). Introducing a hospital information system (HIS) is a way of reducing medication errors (Schumacher and Lee, 2008, Lee and Mcelmurry, 2010) which improves patient safety (Koppel et al., 2005, Menke et al., 2001, Ammenwertha et al., 2003). Nurses are the largest group of healthcare providers in the healthcare delivery system (Abedini et al., 2011). They are responsible for administering medication in their everyday practices. However, many nurses seem unwilling to integrate HIS into their workflow (Mohd and Mohamad, 2005, Abdrbo et al., 2011). Although many healthcare institutions have applied an HIS, relatively few studies have investigated the perceptions of nurses regarding the use of an HIS in the medication process. Therefore, understanding nurses' perspectives on HIS in the medication process is obviously important.

1.1 Background of the study

Today, information technology (IT) interventions have great potential for improving the quality of health care and reducing the risk of human errors (Marin, 2004, Dünnebeil et al., 2012) because the medication administration process is extremely responsive to advances in medicine and technology (Nelson et al., 2005). In this regard, information systems (IS) have emerged in the health industry as a way to facilitate the patient care process, with the goal of enhancing the quality of care and the safety of individual information (Overhage et al., 2005, Koval, 2005, Mäenpää et al., 2009). Information systems are considered an appropriate approach for better and faster documenting and for retrieving information related to patient medication (Heimar, 2004). Several studies have indicated that the use of an HIS not only improved the quality of care (Lee and Mcelmurry, 2010, Mäenpää et al., 2009) but also improved the medication process, which led to safer care and reduced medical errors (Schumacher and Lee, 2008, Lee and Mcelmurry, 2010). This demonstrates that an HIS has the ability to improve patient safety by reducing medication errors (Koppel et al., 2005, Menke et al., 2001,