Measuring Patients’ Perceptions and Social Influence on Home Telecare Management System Acceptance

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ABSTRACT

Successful implementation of a Home Telecare Management System (HTMS) requires acceptance by the users, especially when technical innovation is applied to manage chronic healthcare in elderly patients, who are unaccustomed to using modern technology. Based on the Technology Acceptance Model (TAM) and Social Influence Theory (SIT), a Home Telecare Management System (HTMS) Acceptance Model is proposed and tested to improve the understanding of patients’ acceptance of HTMS and the impact of social influence on patients’ attitude and behavioral intentions in using HTMS. Via empirical research and analysis of 221 patients’ questionnaires, the partial least squares (PLS) technique indicates that most of the model’s hypotheses are significant. Implications for both theory and practice are also provided.

Keyword: Healthcare, Home Telecare Management System (HTMS), Patients, Social Influence Theory (SIT), Technology Acceptance Model (TAM)

1. INTRODUCTION

Home Telecare Management System (HTMS) (Lovell et al., 2002; Celler et al., 2003; Rahimpour, 2006), a kind of new innovative technology, is designed to record clinical indicators of a patient’s health status and provides feedback to patients including medication reminders and measurement scheduling (Celler et al., 2003). Generally, HTMS incorporates an extensive suite of clinical instruments including a wireless weight scale, single lead electrocardiogram, hemodynamometer, spirometer, thermometer, (pulse) oximeter, uricometer, and Internet enabled tools to facilitate patient management long-distance by the healthcare team (Rahimpour, 2006). Although prior studies showed that home telecare could improve outcomes from patients with congestive heart failure and reduce the cost of their care (Jerant et al., 2001); and could facilitate greater “continuity of care” due to improving access and supporting the process of disease management by practitioners (Balas et al., 1997). The implementation of a Home...
Telecare Management System may encounter user resistance, particularly when technical innovation is applied to manage chronic healthcare in elderly patients who are unfamiliar with modern technology (Rahimpour, 2006). Therefore, in order to gain benefit from this technology and successfully implement HTMS program, it is important to understand patients’ perceptions of HTMS from the psychological issues such as what are their concerns, how about their involvement in home telecare services, whether they believe that they can use the system independently, what factors are important in their acceptance, what is the influence of home telecare service on patients’ quality of life and health status. The reason is that patients’ perceptions of home telecare influence its acceptability and diffusion (Demeris, 2000).

According to the research of Rahimpour (2006) and Ramhimpour et al. (2008), Technology Acceptance Model (TAM) (Davis, 1986) can be as an analytical lens to explore patients’ perceptions and acceptance of HTMS. In the TAM, user acceptance is evaluated by assessing users’ beliefs, attitudes, intentions, and actual usage behavior. However, as several IS researchers (Davis, 1986; Davis, 1989; Davis et al., 1989; Hufnagel & Conca, 1994; Melone, 1990) have pointed out, TAM is incomplete in one important respect: it doesn’t account for social influence (SI) in the adoption and utilization of new information systems. Davis (1986) and Davis et al. (1989) noted that it is important to account for subjective norm (SN), the construct denoting social influence. Legris, Ingham, and Collerette (2003) also stated that TAM is a useful model, but must be integrated into a broader model which would include variables related to both human and social change processes. Therefore, Malhotra and Galletta (1999) extend the technology acceptance model to account for social influence. Their study contributes to understanding the role of social influences related to individual acceptance and usage behavior in the implementation of new information technologies.

Since the HTMS is a kind of innovative technology that is used to assist patients in health management, we infer that social influence may also have an importance influence on patients’ perception and acceptance of HTMS. Therefore, we will adopt Kelman’s (1958) processes of social influence (compliance, identification, and internalization) to explore their effects on patients’ attitudes and behavioral intentions toward using HTMS. In light of past and current research on the TAM, Rahimpour’s (2006) conceptual framework of patients’ perceived HTMS, and Kelman’s (1958) social influence processes, the object of this study is intended to develop a completed theoretical model to investigate patients’ perceptions and acceptance of HTMS.

To test the processed model, we adopted a survey method of collecting data and assessing the hypotheses. This is the first empirical study (to the best of our knowledge) to explore how patients’ perception and acceptance of HTMS are affected by both TAM and social influence. Some suggestions on the design and implementation of HTMS are also provided.

2. RESEARCH MODEL AND RESEARCH HYPOTHESES

2.1 Home Telecare Management System (HTMS)

Home telecare management system is the use of information, communication, measurement and monitoring technologies to evaluate health status and deliver healthcare from a distance to patients at home (Celler et al., 1999). HTMS has potential to provide cost-effective care (Allen et al., 1999; Dansky et al., 2001) and may be considered by health organizations as an effective alternative to augment the current health care delivery services. Generally, in the patient’s home, HTMS includes front-end sensors or clinical instruments to measure patient’s blood pressure, heart rate, lung function, body temperature, weight, uric acid, blood sugar, blood oxygen, and data transmission equipment such as PC or Gateway to connect to the Internet. On the hospital or healthcare center side, it comprises database server, application
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