

Factors Influencing Nursing Professionals' Computer-Based Information Systems (CBIS) Use Behavior

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INTRODUCTION

In today's dynamic, information-intensive and result-focused environment, organizations including those in the healthcare sector continue to invest heavily in computer-based information systems (CBIS) (NSHIS, 2005; Kijisanayotin et al., 2009). Examples of CBIS used in the healthcare sector include electronic health record, electronic medical record, clinical decision support, patient care systems, mobile healthcare system, and so forth. The management of healthcare organizations around the world demands that their employees utilize such technologies in their duties (Kaplan & Shaw, 2004). However, a good number of health-based CBIS projects around the world have failed or been abandoned, in part, due to reasons such as reluctance to use such systems due to limitation in information technology (IT) skills (Short et al., 2004), and other individual and environmental factors (Kaplan & Shaw, 2004). Therefore, it is critically important that factors influencing healthcare professionals' acceptance and use behavior of CBIS and related technological be investigated.

As per the variables considered for this study, their inclusion was informed by a desire to incorporate theory-driven and evidence-based factors considered to be relevant to professionals' perceptions (Holden & Karsh, 2010). Computer anxiety, which is a social-cognitive factor that indicates a feeling of anxiety for computer use was included. Kjerulff et al. (1992) found that clinicians who were anxious about using IS in their job generally showed less support for CBIS use. Healthcare researchers have shown that computer self-efficacy, another social-cognitive factor, has a bearing on clinicians' acceptance of CBIS (Ammenwerth et al., 2003; Hsu et al., 2006). In general, a healthcare professional that have favorable attitude toward IS

tends to have positive intention to use implemented IS in their contexts (Lapointe & Rivard, 2006; Holden & Karsh, 2010; Holden, 2010; Vanneste et al., 2013). It has been shown that peer or social influence plays a significant, positive role in the behavioral intention of healthcare workers, including RNs toward accepting and integrating CBIS in their work or practice (Lee et al., 2003; Holden et al., 2013). Facilitating conditions is critical for clinicians' acceptance of IS (Chau and Hu, 2002; Kijisanayotin et al., 2009; Vanneste et al., 2013).

Specifically, this research is designed to answer the question: what factors influence nursing professionals' CBIS use behavior? Information garnered from this current endeavor would be useful in better managing expectations and behaviors of Canadian's nursing professional vis-à-vis technology adoption. It was decided to use the Theory of Planned Behavior (TPB) (Ajzen, 1991) as an initial theoretical frame given its suitability in explicating all behaviors and for the fact that other studies focusing on nurses' adoption of IS have previously used it (Shoham & Gonen, 2008; Leblanc et al., 2012).

BACKGROUND

Research Context

The province of Nova Scotia – this study's setting – has recently implemented CBIS (NSHIS, 2005); to the best of knowledge, no prior empirical studies have investigated healthcare professionals' use behavior of such systems in the province. This research intends to shed some light in that regard; at the same time, it seeks to add to the growing body of knowledge in the area. Nova Scotia was chosen for illustration purposes and for the fact that it apparently lags behind the rest

of the country on a variety of issues, including the use of technological innovations and related infrastructure in organizations (NSHIS, 2005). Admittedly, the health sector has a variety of professions or occupations; however, for illustration purposes, this study will focus on registered nurses (RNs) as we believe that such professionals would have been exposed to the provincial government's implemented CBIS and other computer technologies in their work environments (NSHIS, 2005; Ifinedo, 2012). This study did not include the views of other healthcare professionals such as physicians as prior studies elsewhere in the country have already provided useful insights in that regard (Bergeron et al., 1990; Hayward et al., 1997; Gagnon et al., 2003).

Theoretical Foundations and the Research Model

This research draws from the Theory of Planned Behavior (TPB), which was proposed by Ajzen (1991). It postulates that individual behavior is influenced by attitude, subjective norms, and perceived behavioral control. Attitude is defined as the individual's positive or negative feelings toward engaging in a specified behavior. Subjective norms describe an individual's perception of what people important to them think about a given behavior. Perceived behavioral control is defined as the individual's beliefs regarding the efficacy and resources needed to facilitate a behavior; this construct was accordingly expanded into Computer self-efficacy, Computer anxiety, and Facilitating conditions.

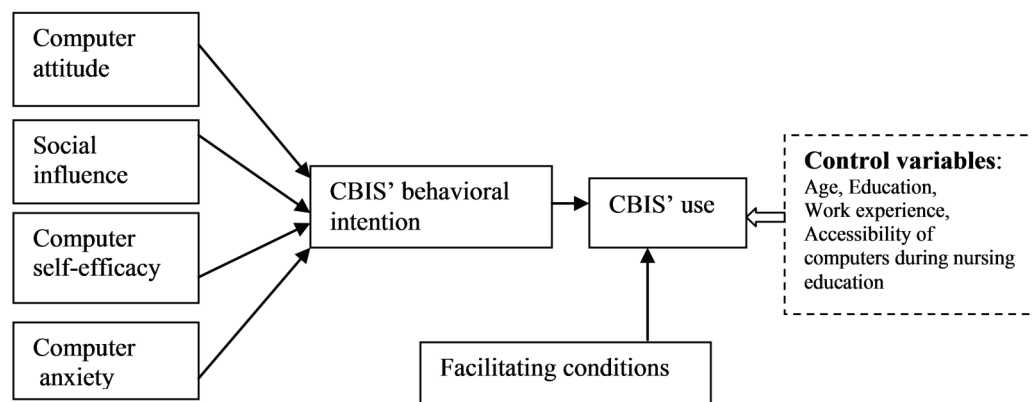
Computer self-efficacy emphasizes the individual's capabilities and competence to cope with computer

technologies (Compeau et al., 1999). Computer anxiety refers to the feeling of anxiety associated with computer use (Jayasuriya, 1998). Facilitating conditions refers to an organizational and technical infrastructure supporting the use of acquired systems (Venkatesh et al., 2003). Others healthcare researchers have used the foregoing variables in prior studies (Aggelidis & Chatzoglou, 2009; Schaper et al., 2007; Ifinedo, 2012). CBIS' use captures the frequently use of such technologies. The study's research model with the aforementioned constructs or variables is shown in Figure 1. Selected control variables – age, education, work experience, and accessibility of computers during nursing education - are included to enhance insight.

RESEARCH HYPOTHESES

The literature suggests that when healthcare professionals have the right attitude toward computers, their intention to use acquired IS in their organizations tends to be positive as well (Kaplan & Shaw, 2004; Shoham & Gonen, 2008; Leblanc et al., 2012). However, other healthcare studies did not confirm the existence of a positive relationship between computer attitude and behavior intention (Schaper & Pervan, 2007). Specifically, studies that investigated the impacts of nursing professionals' attitudes toward computers on behavior intention vis-à-vis IS use indicated that a positive association exists between the two variables (Jayasuriya, 1998; Liu et al., 2000; Shoham & Gonen, 2008; Leblanc et al., 2012). Therefore, it is predicted that:

Figure 1. The research model



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