6-2017

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ABSTRACT

Linzer et al. (2016) found that 67% reported high stress with 38% informants self-reporting as burnt out. Technostress is defined as stress that is incurred through the use of information technology (Ragu-Nathan et al., 2008; Tams et al., 2014). This study will explore EMR use in healthcare providers and it impacts technostress in the context of SPPs. The goal of this study is to answer the following question: *How does the usage of EMR systems influence the healthcare providers' technostress and therefore their job performance within a small physician practice?* In order to answer this question, we will be collecting qualitative data through the use of semi-structured interviews. At the end of this study, we will provide a better understanding of technostress within EMR usage and the factors that influence technostress and ultimately job performance.

Keywords

Technostress, healthcare, EMR, Social Cognitive Theory.

INTRODUCTION

In a survey with 7,288 subjects, Shanafelt et al. (2012) found that 38% of the surveyed physicians showed at least one symptom of burnout. In a more recent survey of 579 healthcare providers (physicians, physician assistants, and nurse practitioners), Linzer et al. (2016) found that 67% reported high stress with 38% informants self-reporting as burnt out. This study found that 62% of the providers identified high documentation burden and electronic medical records (EMR) use as a cause of high stress. While the authors identified EMR use as one of the culprits, their exploratory study did not examine the reasons why EMR use is found stressful.

Within the information systems literature, there have been several studies on technostress and its effects on various professionals. Technostress is defined as stress that is incurred through the use of information technology (Ragu-Nathan et al., 2008; Tams et al., 2014). Most studies in the IS field have focused on technostress and its effect on job satisfaction, performance, and burnout (Tarafdar et al., 2010; Shih et al., 2013). While these studies have focused on technostress in the context of manufacturing, public sector jobs, and IT professions, IS literature has mostly ignored healthcare providers. This study will focus primarily on healthcare providers within small physician practices.

Small Physician Practices (SPP) are medical practices that consist of a staff of less than 10 physicians (Decker et al., 2012). Despite the fact that there have been multiple studies on EMR usage, those studies have focused on larger health organizations such as hospitals and large practices (Ludwick & Doucette, 2009). Nearly 60% of all US physicians are employed by SPP (Kane & Emmons, 2013). Due to their smaller size, SPP have unique challenges with EMR implementation which include costs, lost productivity, and lack of scale to implement (Reardon & Davidson, 2007; Casalino et al., 2013). Due to these challenges, SPPs provide a unique environment in which to study the relationship between technostress and EMR use.

While most studies on stress have either examined it within healthcare providers (Kummer et al., 2017; Strong et al., 2014) or have examined technostress on other professionals (Tams et al., 2014; Tarafdar et al., 2010), none of the recent studies have focused on technostress on healthcare providers. This study will explore EMR use in healthcare providers and it impacts technostress in the context of SPPs. The goal of this study is to answer the following question: *How does the usage of EMR systems influence the healthcare providers' technostress and therefore their job performance within a small physician practice?*

In order to answer this question, we will be using the multiple case study methodology. We will be collecting qualitative data through the use of semi-structured interviews of healthcare providers that are working in small physician practices. In order to search for a richer understanding of this phenomenon, we will use an interpretive approach (Klein & Myers, 1999). An interpretive analysis will also give us a better understanding of the relationships between technostress and EMR usage and any other constructs that we discover in our research.

We will be using Bandura's (1986) Social Cognitive Theory (SCT) as the framework our research. This theory has been used in past literature to examine behaviors such as anxiety (Compeau et al., 1999) and learning (Hasan and Ali, 2004). We will extend this theory to explain the relationship between technostress, computer self-efficacy, and user expectations by examining other factors such as user satisfaction, EMR characteristics, and any other factors discovered in our analysis.

LITERATURE REVIEW

Technostress

Technostress is stress that has incurred through the use of information technology (Ragu-Nathan et al., 2008). Technostress can arise when users are constantly connected, data is overload, rapid change in technology, or technology not customized for workflow (Ragu-Nathan et al., 2008). Tarafdar et al. (2010) also found that technostress can be caused by the user's sense of insecurity or inadequacy. In this study, we will explore how electronic medical records (EMR) effects a user's technostress level and how that impacts job performance.

There have been several IS studies on this phenomenon. Strong et al. (2014) studied the adoption of EMR through the use of affordance theory. Kummer et al. (2017) examined the impact of anxiety and culture on system acceptance. Ragu-Nathan et al. (2008) studied technostress factors and its negative impact on job satisfaction focusing on white-collar workers in manufacturing, financial, and government. Tarafdar et al. (2010) ran a survey of public sector employees. While these studies examined technostress in various contexts, they did not account for varying levels of computer competency. In the next subsection, we will provide a summary of Social Cognitive Theory and how it can be leveraged as a way to explore this phenomenon.

Social Cognitive Theory

Social Cognitive Theory (SCT) (Bandura, 1986) argues that Behavior, Environment, and Personal Characteristics equally interact with one another and is mostly used to examine individual behavior. This theory has been for various IS studies (Compeau et al., 1999; Hasan & Ali, 2004). Compeau et al. (1999) used SCT to study the impact of computer self-efficacy on job performance. Found that computer self-efficacy can lessen the effects of anxiety which can increase the usage of technology. Hasan and Ali (2004) used SCT to examine learning performance in computer training. They found that computer self-efficacy and computer experience can have a positive influence on learning performance.

We will be using SCT as a foundation for our study's framework as we attempt to explain a provider's behavior within HIT environment. Below, Figure 1 provides an overview of the technostress framework.
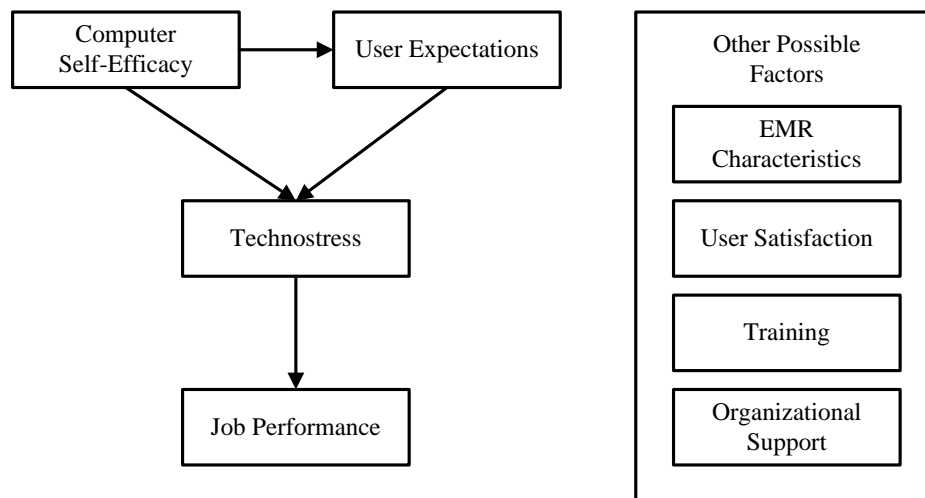

Figure 1: Technostress Framework

Past studies have found relationships between computer self-efficacy, user expectations, technostress, and job performance (Compeau et al., 1999; Tarafdar et al., 2010). Our study will extend those studies by exploring the mechanics behind those relationships. In addition, there are other factors from literature that will be examined in our study. Those factors hare listed in Figure 1. In the next section, we will provide an overview of our proposed research design.

MULTIPLE CASE STUDY

We will use a multiple case study design to answer the research question: *How does the usage of EMR systems influence the healthcare providers' technostress and therefore their job performance within a small physician practice?* We will use the case study methodology outlined by Yin (2003) for this research. We will search for a richer understanding of the phenomenon under study through the use of an interpretive approach (Klein & Myers, 1999). We will use SCT and our framework described in the above section to help guide us in our interview question selection and data analysis (Walsham, 2006). Case study is an excellent method to both test and generate theory (Eisenhardt, 1989).

CONCLUSION

The purpose of this study is to explore technostress within the context of electronic medical records and small physician practices. We are proposing to use Bandura's (1986) Social Cognitive Theory as a framework to explore the phenomenon of technostress and provide a starting point for future research into technostress, EMR, and healthcare providers. At the end of this study, we will provide a better understanding of technostress within EMR usage and the factors that influence technostress and ultimately job performance. We will also deliver a set of guidelines to healthcare administrators on how best to alleviate technostress and make the conditions less stressful for practitioners within small physician practices.

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