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Social Influence on Health IT Adoption Patterns of the Elderly: An Institutional Theory Based Use Behavior Approach

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Abstract

This study aims to investigate and improve understanding of the social forces that influence patient portal use behavior among the elderly. Underpinned by institutional theory and using the Unified Theory of Acceptance and Use of Technology, our proposed model examines the three social environmental factors of normative, mimetic, and coercive forces within the health Information Technology (HIT) context. The proposed model was tested using an empirical study of 117 subjects in the United States. Using the partial least squares method, the study found that coercive and mimetic pressures significantly influence patient portal use behavior. These findings signal that older people follow their providers' advice and follow the behavior of a respected, higher-status peer from their network. Normative pressure was found to be an insignificant force, which indicated that older people do not follow the bandwagon effect.

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1. Introduction

Improving patient outcomes through better provider-patient communication^{1,2} is gaining attention in the healthcare industry. Healthcare providers are increasingly relying on patient portals, secure online websites that give

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patients access to their personal health information from anywhere with an Internet connection.³ Patient portals are designed to communicate summaries of recent visits, medications, immunizations, allergies, and lab results (HealthIT.gov). Some patient portals are also capable of handling prescription refills, scheduling non-urgent appointments, accepting payments, downloading and completing forms, and viewing educational material.⁴ These uses of technology are critical in addressing the problem of rapidly aging populations in most countries.⁵

Electronic health records (EHR) use is on the rise. About 80% of office-based physicians make use of EHRs,⁶ and most of them (70%) are committed to participate in the “meaningful use” based monetary incentives offered in the United States.⁷ One of the Stage 2 Core Set objectives for meaningful use is to “provide patients the ability to view online, download, and transmit their health information”. Therefore, providers with EHR systems are mandated to provide their patients with access to their own health information over the Internet through a secure online portal. Similar initiatives are being introduced in several other countries as they try to both improve health outcomes and strive for efficiencies in their health systems.⁸

Patient portal acceptance and use has been the basis of numerous studies.^{4,9-14} The existence of chronic conditions was found to be one of the factors that potentially affected the rate of acceptance and use of patient portals.^{4,9,15} Contrary to this, patient age is found to be negatively correlated with patient portal adoption and use, especially among older patients.¹²⁻¹⁴ Approximately 20% of the US population will be over the age of 65 years in the next decade due to an increase in average lifespan. It is also known that doctor visits and medical spending increase during the final years of life¹⁶; some studies find a quarter of an individual’s medical spending happens in the last-year-of-life.¹⁷ Therefore the older patient population is the group who would get the most use out of patient portals, yet they are less likely to use them.

Although a number of empirical studies examined the factors to better understand consumer health information technology (CHIT) acceptance and use, they rely primarily on technology acceptance theories.¹⁸ The variety of antecedents in the competing models concluded that older patients are less likely to accept CHIT and make use of online health information due to less comfort, efficacy, and control.^{10,19} However, one of these antecedents is social influence, also called subjective norm,²⁰⁻²² and has not been explored in regards to older patients. Elderly patients are likely to conform to the attitudes, norms, and beliefs those around them.²³ Therefore social influence, which may motivate the elderly to adopt and use a patient portal, should be studied in more detail beyond the technology acceptance theories.

In this empirical study, we argue that elderly patients form a belief about patient portal acceptance and use based on the influence of those peers they respect. We propose a conceptual model based on institutional theory’s driving forces as a precursor of the driving forces of behavioral intention and use behavior within the Unified Theory of Acceptance and Use of Technology (UTAUT) Model. Data collected from the elderly in different social settings provides the basis of our empirical evidence that normative, coercive, and mimetic forces significantly impact older patients’ use behavior toward a patient portal.

In the next section we provide an overview of the theoretical background and the conceptual model development, followed by the methodology and data analysis. Finally, the results are discussed and managerial and theoretical implications are presented, followed by limitations, further directions, and conclusions.

2. Theoretical background and conceptual model

2.1. Theoretical background

An individual’s beliefs about technology acceptance and use are driven by two major determinants: individual beliefs and social factors. The social pressure to engage in an activity is referred to as subjective norm.²⁴ Driven by the motivation to comply, an individual develops beliefs about the extent to which other people who are important to them think they should or should not perform.²⁵ In the technology domain, influence of peers and superiors is found to be a strong determinant of this belief.^{26,27} This study is not exploring or hypothesizing any relationship among the individual beliefs or social factors; rather it is approaching the social factors from the basis of institutional theory.

Technology use among individuals has been explored through the characteristics of individuals and organizations. These studies found that institutional characteristics show strong influence on technology use.²⁸⁻³⁰ Institutional theory has been developed and applied in the organizational context.³¹⁻³³ However, organizations

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