Understanding Patient Engagement in a Primary Care Setting: A Patient Health Portal Quality Improvement Project

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Introduction

To comply with Meaningful Use (MU), Millcreek Primary Care (MCPC), a primary care clinic affiliated with St. Mark’s Hospital in Utah, initiated eClinicalWorks Patient Health Portal (eCW). Stage 2 of MU mandates 5% of patients adopt the electronic health record (EHR) through engagement by secure messaging with providers and viewing their personal health information through the portal (Dalrymple, Rogers, Zach, & Luberti, 2016; Irizarry, De Vito Dabbs, & Curran, 2015; Neuner, Fedders, Caravella, Bradford & Schapira, 2015). MCPC met Stage 2 MU goals, however the providers had concern patients were not experiencing the benefits of portal engagement based on portal use data. Our research question is: What motivating factors influence the patients’ behaviors to use health information technology (HIT)?

Purpose

The purpose of this study was to identify motivating factors influencing patients’ behaviors to engage with eCW for strategic planning to enhance communication between patients and providers.

Methods

We used the Health Information Technology Acceptance Model (HITAM) as a framework to determine what factors played an influential role in HIT use. We conducted a survey developed based on HITAM with the author’s agreement, to assess the motivating factors, demographic data and eCW registration status. The survey was disseminated through REDCap, an online research electronic data capture system, which was active from November 17, 2017 to December 31, 2017 (Harris, 2009). A survey link was sent by mass email to all MCPC patients with a valid email address. In the clinic, participants were offered a paper-based survey or the option of a desktop computer through the REDCap survey link. All data collected was voluntary, anonymous, and confidential. Descriptive statistics was used to describe participant characteristics. Independent t-tests were used to examine different motivating factors between participants who registered for the eCW and those who did not. Pearson’s r was used to assess the correlation between each motivating factor from the HITAM. The statistical analysis was conducted in SPSS 24.0.

Results

In total, there were 103 responses (102 via REDCap, 1 paper-based), with 98 completed surveys. The demographic characteristics of equality between participants registered (n = 64) or not registered (n = 29) for the eCW, revealed no statistical difference (age: p = .06, gender: p = .32, race: p = .32, employment: p = .90, and educational background: p = .08). The independent t-tests for equality of means showed no statistical difference between participants who registered for the eCW and those who did not regarding all the 11 motivating factors from the HITAM (p values ranged from .263. to .886). Reliability to estimate the internal consistency of question items from the HITAM motivating factors/subscales showed Cronbach’s alpha values between .57 and .96. We validated each question item within the subscales for reliability which were comparable with the original HITAM instrument (a= .85) (Kim & Park, 2012). Secondary analysis showed “intention to use” had a significantly strong correlation with attitude, perceived usefulness, HIT reliability, and HIT self-efficacy. All participants’ data were used to assess correlations between “intention to use” and other motivating factors from the HITAM.
The results revealed moderate to strong positive correlations between “intention to use” and these factors \( (p < .001) \): “attitude” \( (r = .81) \), “perceived usefulness” \( (r = .77) \), “HIT reliability” \( (r = .73) \), “HIT self-efficacy” \( (r = .71) \), “perceived ease of use” \( (r = .65) \), “subjective norm” \( (r = .52) \), and “health beliefs/concerns” \( (r = .43) \). Yet the strongest correlation was between perceived usefulness and attitude.

Discussion

To solve MCPC’s dilemma of less than stellar patient engagement with eCW, we sought to understand the motivating factors that influence patients to engage with the portal. The HITAM is an effective model that provides insight into patients’ behavioral intent to engage with HIT (Kim & Park, 2012). Initially we thought, patients who register for eCW would likely be more engaged technology than patients who do not. Our project focused on MCPC patients classified as registered or not registered for the eCW portal. Despite assumptions that demographics or the HITAM subscales would explain the differences in motivating factors, our analysis proved there are no statistical differences between the two groups. Like a ripple effect, having a positive attitude about HIT builds a patient's confidence in their ability to seek health information online, which we understand increases intention to use (Kim & Park, 2012; Tavares & Oliveira, 2016). As online health resources are perceived to be useful and reliable, patients’ may be inclined to use HIT. According to Kim and Park, perceived usefulness shifts attitudes, which is a direct consequence of the behavioral intention (Kim & Park, 2012). According to the HITAM, patients’ behavior to use HIT is influenced by “intention to use” (Kim & Park, 2012). Interestingly, the original HITAM describes behavioral intention and attitude as consequential outcome drivers of HIT motivating factors, influenced by perceived ease of use, perceived usefulness, HIT self-efficacy, and HIT reliability. Similar to our findings, subjective feelings of one’s competency levels using HIT is significant to the perceived effort to gain access online for health information and health management, therefore empirically supporting the reliability and usefulness of HIT (Kim & Park, 2012).

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References:


Abstract Summary:
To investigate motivating factors influencing patients’ use of health information technology (HIT), we conducted a survey based on the Health Information Technology Acceptance Model (HITAM) in a primary care clinic. By enhancing patients’ positive attitude, creating useful, reliable HIT for patients’ self-efficacy, we suggest developing strategies for improved patient engagement.

Content Outline:
Introduction
- In an effort to comply with Meaningful Use (MU), Millcreek Primary Care (MCPC), a primary care clinic affiliated with St. Mark’s Hospital in Utah, initiated eClinicalWorks Patient Health Portal (eCW).
- Stage 2 of MU mandates that 5% of patients adopt the electronic health record (EHR) through engagement by:
  - Secure messaging with providers and
  - Viewing their personal health information through the portal
- MCPC met Stage 2 MU goals, however the providers had concern patients were not experiencing the benefits of portal engagement based on portal use data.
- Our research question is:
  What motivating factors influence patients’ behaviors to use Health Information Technology (HIT)?

Purpose
The purpose of this study was to identify motivating factors influencing patients’ behaviors to engage with eCW for strategic planning to enhance communication between patients and providers.

Methods
• Framework: Health Information Technology Acceptance Model (HITAM)
  o Determine what factors played an influential role in HIT use.
• Survey developed based on HITAM
  o Assess motivating factors
  o Demographic data
  o eCW registration status
• Survey disseminated through REDCap
  o Active from November 17, 2017 to December 31, 2017
• Survey availability:
  o Mass email to all MCPC patients with a valid web-enabled email address
  o Paper-based survey
  o Desktop computer via REDCap survey link
• Participant recruitment incentive: one $100 gift card via random raffle selection.
• Descriptive statistics described participant characteristics.
• Independent t-Tests examined different motivating factors between participants who registered for eCW and those who did not.
• Pearson’s r was used to assess the correlation between each motivating factor from the HITAM.
• The statistical analysis was conducted in SPSS 24.0.

Results

• The demographic characteristics of equality revealed no statistical difference between participants registered (n = 64) or not registered (n = 29) for the eCW portal.
• The independent t-Tests showed no statistical difference between participants who registered for eCW and those who did not regarding all eleven motivating factors from the HITAM (p values ranged from .263 to .886).
• The Cronbach’s alpha values for the subscales from the HITAM survey were between .57 and .96.
• “Intention to use” had significant and strong correlations with attitude, perceived usefulness, HIT reliability, and HIT self-efficacy.

Discussion

• To solve MCPC’s dilemma of less than stellar patient engagement with eCW, we sought to understand the motivating factors that influence patient engagement with the portal.
• This project provided an understanding analogous to Kim & Park’s study, “intention to use” the portal is correlated with patients’ attitude, perceived usefulness, HIT reliability, HIT self-efficacy, perceived ease of use, subjective norm, and health beliefs and concerns.
• According to the HITAM, patients’ behavior to use HIT is guided by “intention to use”.
• To improve utilization of eCW, we suggest MCPC develop strategies focusing on enhancing patients’ positive attitude about eCW, emphasizing the usefulness, reliability and increasing patients’ self-efficacy when using eCW.

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