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Enhancing Patient Portal Usage

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Enhancing Patient Portal Usage After Patient Education

DNP Project

Presented to the Faculty of the

Department of Nursing

West Chester University

West Chester, Pennsylvania

In Partial Fulfillment of the Requirements for

the Degree of

Doctor of Nursing Practice

By

Patricia Pawling

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Dedication

My doctoral project is dedicated to my husband and family who have supported me throughout my journey.

Acknowledgements

I would like to acknowledge my faculty staff, particularly Dr. Jackie Owens, my external mentor Dr. Michelle Sibel and my advisors, Dr. Cheryl Schlamb and Dr. Cheryl Monturo for their support, friendship, and patience during this process. All of the advisors and nursing faculty at West Chester University have contributed to my education in a significant and truly valued way. I would also like to acknowledge my family for helping and seeing me through this project.

Abstract

The patient portal was created to offer the opportunity for patients to become more involved with their health care outcomes. However, it has been identified that patient portals are not being widely used. The portal can increase a patient's knowledge about their health care and provide significant communication exchanges with their health care providers to help improve and understand their care needs. This quality improvement project was implemented to evaluate whether using an educational intervention of the benefits of the portal would increase usage of the portal and patient-provider communication utilizing the portal. Each patient, upon checking in with the front desk were given education on accessing and using the portal. Pre-intervention data were collected from the portal prior to the educational intervention. The pre-interventional data showed that in 2019 patients were sent 12 messages, 59 people accessed their records and 19 messages were sent to the patient from the provider. The post intervention data showed 190 patients had an educational intervention with an increase to 118 messages being sent by the provider, 113 patients accessed their records, and 85 patients electronically sent patient communication messages to the provider in the office. The framework model used for evaluating the project was Imogene King's goal attainment theory. Through realization of goals, better outcomes in healthcare can be achieved with using the patient portal for guidance.

Keywords: patient portal, patient communication, patient outcomes, quality improvement

Table of Contents

List of Tables

List of Figures

Chapter 1

Introduction and Background

The patient portal is bringing patient-centered information into the hands of the patient where they can participate in their own care and have control of their health information. The portal provides a positive impact on the patient's care by supporting decision making between the patient and the provider, providing personalized tools that the patient can use to improve their health and providing the ability to exchange information between health care professionals. Through the use of an internet connection, the portal is a secure on-line website that permits access to personal health information with a secure username and password. (Ancker et al., 2015). With the patient portal, the patient has access to their health records and is able to makes requests for referrals and medication refills and also ask questions to their health care team. Plus, the portal enables patients to view their lab information, share results with other providers, exchange secure messages, and schedule appointments. (Miller, Latulipe, Melius, Quandt, & Areury, 2016).

Background

Healthy People 2020 discusses patient involvement with the portal in their initiative pertaining to Health Communication and Technology. Government agencies and quality health organizations anticipate that patient portal usage will encourage patients to better manage their health leading to better health outcomes because of the increased interaction between the patient and the health care team. The Centers for Medicare and Medicaid (CMS) is encouraging providers, hospitals and outpatient offices to utilize the patient portal to allow patients to access their health records. ("Merit based incentive payment system," 2019). Clinicians will now be reimbursed under Quality Performance and Compensation which includes two payment pathways, a merit-based incentive system (MIPS) and the

alternative payment model (APM). The CMS vision is that electronic health records would help to improve health outcomes and efficiency all while providing a reduction in disparities and improved patient outcomes. The government payment for provider services is moving towards a value-based payment system where the amount of compensation for a service will be based in part on their quality of service in addition to the type and amount of the service provided.

Outpatient services may be positively or negatively adjusted as evidenced by the provider's performance based on four categories: quality, cost, interoperability promotion and improvement activities. Providers may choose to participate in the alternative payment method (APM) model but would still have their reimbursement derived from the quality and cost categories. These changes came under the Medicare Access and CHIP Reauthorization Act of 2015 otherwise known as MACRA. (Cardona, Myles, 2019). More than 1 million providers will be reimbursed under the merit-based incentive payment system. (Cardona & Myles, 2019).

Providers and their offices are required to provide patients electronic access to their health information through the patient portal. ("Merit based incentive payment system," 2019). This is a 2019 performance improvement measure where patients are to be provided timely access to view their information on-line, download it or transmit their health information. ("2019 MIPS participation and eligibility fact sheet", 2019). If providers do not abide to this rule, they are subject to a fine. Mishuris et al. (2015) indicate that the provided incentives for the patient portal usage increase and for providers to encourage the usage to their patients were put into place so that patients could become stewards of their own healthcare and outcomes.

Barriers to portal use. Literature suggests that patients approve of patient portals and agree that it could improve their care; however, the rate of usage of the patient portal has been low. (Tsai, Bell, Woo, Baldwin, & Pfeffer, 2019). Xerox studied the adoption of patient portals and found that 64% of patients do not use the portal and 35% do not know about them. Further, providers did not tell their patients about the portals and their usefulness in patient care. (Geyer, 2015). The Government Accountability Office (GAO) documented in 2015 that only 30 percent of outpatient Medicare patients were using the portal even though 87 percent of Medicare-eligible practices made the portal available to their patients. (Bendix, 2017). Other barriers noted by patients were perceived lack of usefulness, lack of accessibility and concerns regarding privacy and security. Some patients lack resources such as access to a computer to engage in using the patient portal and others lack computer literacy and understanding the health information reported in the portal.

Time constraints and resources to manage the portal have also been barriers that providers have described when trying to implement the portal. Some providers expressed a negative opinion about using the portal noting that they feel they may receive more phone calls and messages from patients regarding their health information. Providers feel that portals are more time-consuming for the whole medical practice. However, when the patients received management support and positive feedback from their providers, it was accepted more readily by patients. (Kooij, Groen, & Harten, 2018).

Organizational problem. The problem with portal use at the DNP project site is resources and time. The family practice is an independent practice which is small in size with only a few support staff. The staff are involved with the day-to-day interactions with patients and processing their records including writing their notes, process referrals and bills. This

leaves little time to manage the patient portal. The practice's providers find limited time to implement the patient portal. The benefit of the patient portal is that patients can become more active in their health care. It is also important to have the patient portal implemented to fulfill the requirement for provider offices to allow patient access to their medical health information through the use of an electronic health record. It helps support patients managing their health issues and is a valuable tool for communication between patients and providers by managing their chronic health concerns and quality of their care. Thus, leading to improved patient health outcomes.

The problem with the portal use at DNP project site is that multiple people are trying to manage the portal and one provider finds it difficult to use and understand the portal. The small office does not have a designated person to oversee the portal. This leaves both the nurse practitioner and the physician involved with seeing patients and also maintaining the portal. This allows little time for enhancements for the portal and for maximizing the use of the portal. The nurse practitioner and the physician have had little time to invest with education for the portal, so the portal has been underutilized since its inception.

The purpose of this project is to provide educational teaching to engage patients to use the patient portal. An educational intervention provided at the beginning of their visit and then reinforced during the visit provides patients with knowledge to enhance usage of the patient portal. As one becomes more comfortable using the portal, usage of the portal will increase. Tavares and Olivera (2016) suggest that habit and behavioral intention have a positive effect on technology use. Patients with skills and confidence to utilize technology become actively involved in their self-care and involved in their health and self-efficacy.

With increased involvement with their care, interventions that improve patient engagement have a potential to improve patient population health. (Ancker et al., 2015).

Significance

In a private family practice in New Jersey, providers find that there is not time to implement the patient portal. It is a problem because the providers need to maximize their reimbursements for the Centers for Medicare and Medicaid. It is also of concern because if the patient portal is not offered and used by patients, the office could be fined by Medicare. The patient portal helps support patients managing their health issues and is a valuable tool for communication between patients and provider by managing their chronic health concerns and quality of their care. If the portal is not offered to patients, it would be a disadvantage to the patient as patient empowerment through participation in their care for positive self-management of their conditions.

Plan

This author used a quantitative study to retrospectively look at the use of the portal pre and post education. The portal use was evaluated during a six-week timeframe to determine if there was an increase in usage from the educational intervention.

Purpose Statement

This purpose of this project was to provide educational teaching to engage patients to use the patient portal. An educational intervention provided at the beginning of their visit and then reinforced during the visit provided patients with knowledge to enhance usage of the patient portal.

This study answered the question of: In male and female patients in a family practice office setting, ages 18-99, does education on portal use impact patient engagement and frequency of usage compared to no education utilizing the portal use over a six-week period.

Clinical Questions

- Will patients use the patient portal to view their healthcare information?

- Will improvement be seen in patients utilizing the portal on their chronic health conditions?

- What will be the disadvantages of the portal that patients will encounter?

DNP Project Objectives

- To provide better care for patients and improve outcomes for their care.

- To have patients engage in usage of the portal for interactions with their healthcare team.

- To have patients use the portal for general questions pertaining to their health care and questions.

Assumptions and Limitations

- This study assumes that patients have access to a computer to be able to access their patient electronic health records.

- The assumption is made that patients are able to use a computer and have an understanding of medical terminology to understand what information is in their records.

- There is the possibility that patients will refuse to access their electronic health records.

- This study also has a time factor as it is only six weeks in length and also assumes that staff will adopt the use of the portal.

Chapter 2

Literature Review and Framework

Patient engagement is encouraged by health care organizations. The introduction of the patient portal to the electronic health record is bringing patient-centered information into the hands of the patient where they can engage in their own care and have control of their health information. Government agencies and quality health organizations are anticipating that patient portal usage will encourage patients to better manage their health and that health care outcomes will improve.

Theoretical Framework

When looking at patient health care engagement, is important to understand what motivates a patient to use a portal. By looking at Imogene King's goal attainment theory, one can understand the process behind the three-part theory for utilizing patient motivational factors and helping them achieve their health care goals. She theorized that using three interacting systems, both the nurse and the patient bring important knowledge and information together to achieve goals. There are three parts to this goal attainment theory: the individual or personal system, the interpersonal system and the social system. (Ancker, et al., 2015).

In the first part, the individual is instrumental in self, growth and development including time and learning. The second part of her theory is the interpersonal system which Imogene King refers to as a dyad meaning the patient and the nurse and how they relate either verbally or nonverbally. Their interactions including communication, stress and coping are an important part of the second part of her theory. The final part is the social system. She theorized that people within a community or society share common goals and maintain values which develops their power over a situation and their decision making. (Ancker, et al., 2015).

The individual. The individual is ultimately responsible for their well-being. They are interested in their growth, development and learning. They are interested in keeping their health and seek health interactions with physicians and advanced care practitioners to help them achieve their goal of good health and well-being. The use of the patient portal is an extension of this interaction and a communication tool between the provider, patient and office staff to keep the patient well informed and allow the ability of the patient to interact with the provider without using too much of their time. (Ancker, et al., 2015).

The interpersonal system. The interpersonal system is where the nurse and patient set goals they mutually agree upon and achieve. Nurses use perception, communication, and interaction to gather data needed for assessment and judgment for diagnosing. As the nurse and patient plan on the goals, they use the transactional process. Evaluation is the feedback loop that begins the transactional process again. (Ancker, et al., 2015).

In applying King's theory to the use of the patient portal, the patient is educated on the use of the portal, and the transactional process implies that the patient will sign up and use the portal. Communication is effective through the portal and the interactions between nurse and patient where the goal is to help patients attain, maintain or regain their health through this transactional process. (Ancker, et al., 2015).

The social system. The social system interaction with a patient and a group is important because the patient is interested in sharing a goal. That goal can be an individual or group goal and is part of Imogene King's relationships within a group. It is important that the patient understand their disease and utilizing a group discussion or group information about a medical condition allows the patient to learn and reach out to others to learn more information that is beneficial for their health. (Ancker, et al., 2015).

They can also reach their health care goals through interactions with use of the patient portal. (See figure 1 & 2). Patients who are motivated and actively engaged with using their portal have been reported to have better health outcomes. Interventions that support patient health have the potential to improve the health of a population. (Ancker et al., 2015).

Terms and Concepts

Key terms used throughout this paper are Centers for Medicaid and Medicare Services (CMS). This government agency is part of the Department of Health and Human Services whose responsibility is to oversee the incentive program for electronic health records. ("Centers for Medicare and Medicaid Services," 2019). A second definition is MIPS. MIPS is a merit-based incentive payment system which rewards value and outcomes through the merit-based incentive payment system. ("MIPS Overview Program," 2019). Patient Portal is also a term used throughout. A patient portal is defined as a secure online website that permits access to personal health information with a secure sign on, password and use of an internet connection. ("What is a patient portal? ," 2019).

Search Strategy

The literature search included searching CINAHL, Google Scholar, and Cochrane databases. The search terms used were personal health record, patient portal, patient centered home care, merit-based incentive payment system and Center for Medicare and Medicaid Services. The search yielded 23 studies. Studies that addressed the specific patient portal usage question were included. The studies that were excluded were those that did not address the patient portal usage information.

Review of Literature

The literature review identified common themes and terms. The Merit Based Incentive Payment System (MIPS) is a key driver to patient portal use. In addition, patient and provider barriers were discovered along with interventions to remove these barriers.

Merit-Based Incentive Payment System. The American Recovery and Reinvestment Act of 2009 otherwise known as the Health Information Technology for Economic and Clinical Health (HITECH) Act has been expanded in 2019 to include the MIPS. The Center for Medicare Services is required to implement a quality payment incentive program which rewards value and outcomes for patients. The MIPS program includes incentives for physicians and advanced practice clinicians to provide patients electronic access to their health information through the patient portal. ("Merit based incentive payment system," 2019). This is a 2019 performance improvement measure whereby the patient is to be provided timely access to view their information on-line, download or transmit their health information. ("2019 MIPS participation and eligibility fact sheet," 2019).

Barriers to patient portal use. Many authors suggested that the use of patient portals provided important benefits for patients. Patients can utilize this tool for important health care information; however, even though patients believe that the use of the portal is important, their use of the portal has been low. It also was suggested that providers with a higher percentage of Black, Hispanic, or Medicaid patients are less likely to adopt the technology. (Turner, Young-Rock, Yadav, Huo, & Mainous, 2019). Measuring health literacy and utilizing a patient portal also has provided some challenges. Participants who were not computer savvy experienced basic computer barriers, reading and writing barriers

while those participants who were computer savvy reported less problems. They concluded that there was a strong need for education specific to the use of portals. (Tieu et al., 2017).

Other authors suggested that contributing factors to the patient's low adoption of patient portals included knowledge deficit, not knowing how to engage with the portal, and/or access to a computer or internet.   Studies have indicated that the although the patient portal usage has been low, the desire from patients has been high. Providing patients access to their health records may potentially help to improve patient outcomes, patient satisfaction and improve the patient experience. Education is a key factor for improvement in patient portal usage. (Woollen et al., 2016).

Barriers to use for the provider. Providers often do not promote their portals enough to patients. Twiddy (2015) discusses barriers for providers using patient portals. (1) Physicians are not always convinced of the value of the portal, stating they need to invest valuable time into learning about the portal before being able to understand how it will benefit them. (2) Portals are expensive to implement with all the fees and they do not receive much in the way of reimbursement for using them. (3) Providers need to emphasize the portal to staff and patients to gain their interest to engage with the portal usage. The patient and staff must be invested in making the portal work, they must invest time and efforts to change work flows and work within the portal to make it beneficial for everyone. Education about the portal did help patients and staff become more involved with the portal. (4) Providers also find that some patients would rather talk face to face.   While situations such as a language barrier or age may warrant a face to face conversation, providers should still encourage the use of the portal. There are benefits to using the portal such as regulatory need

for the provider and providing timely communication with patients instead of multiple calls trying to get in touch with patients. (Twiddy, 2015).

Patient portal education. As one becomes more comfortable using the portal, usage of the portal will increase. Tavares and Olivera suggest that habit and behavioral intention had a positive effect on technology use. (Tavares & Oliveira, 2016). Motivated patients with skills and confidence to utilize technology become actively involved in their self-care and involved in their health and self-efficacy. With increased involvement with their care, interventions that improve patient engagement have a potential to improve patient population health. (Ancker et al., 2015). A tool such as a patient portal can help reduce costs and improve health outcomes and patient experiences with health care. (Nahm et al., 2017). Research has shown that access for patients to their records and interaction with their providers supports their health wellness and management of their medical conditions. (Wildenbos, et al, 2018).

Research Gaps

The literature review provides evidence of the use of education to enhance the patient portal usage. There are other areas though that need further research. (Apter et al., 2016). Socio-economic factors impacting the ability to have the technology for usage is a concern and needs further investigation. Other areas of concern were on what type of education is best to encourage patient use of the portal. Meaningful use implementation was a major factor in implementing the portal. Providers implemented the portal to avoid fines that could be imposed if the portal was not implemented. Correlations with patients using the portal and improving their health are still being studied. There is not a framework in place to track the success of portals and improvement in a patient's health. Other areas of study needed

include the behavioral changes for the patient to want to use the portal, cost containment and expenses of the portal for both the patient and the providers and patient satisfaction with the portal. These are all areas which are still under research and need more study. The use of the portal is an evolving process of change through utilization by the patient and education from the physicians.

The increased usage of the portal is beneficial for improved self-management of patient's health, communication between patient, physicians and care coordinators as a means to improve patient access to personal electronic health information. Literature shows that patients are more likely to use the portal when education is provided on how to use it. The purpose of this quality improvement project is to provide educational teaching for patient engagement with the patient portal.

Chapter 3

Methods

This study used a quantitative retrospective approach to measure patients using the portal to review and engage electronically in their health care. The patient was encouraged by the staff to use the portal and educated by the staff and providers on how to use the portal through verbal education as well as written information to assist in utilizing the portal.

Setting

The setting for the practice change took place in a small family practice office in Hainesport, New Jersey. The family practice offers services for general health, prevention, wellness, immunizations, physicals, and wellness exams. They also offer well woman exams, minor ambulatory procedures and urgent and sick care visits.   There is a family physician and a nurse practitioner. The number of patients seen by the practice is 1900 per year. Of that number, there are 329 that are age 65 or older, 1411 are ages 18 to 65 and 77 are under age 18. There are approximately 125 patient visits per week. The people involved in the study will be the administrator of the practice, the front desk staff, the patient care techs, the nurse practitioner and doctor at the site. A portal champion was selected from the office staff. This champion had the skills and time to operate and troubleshoot the portal.

Sample, Access and Recruitment Methods

The population involved with this study was patients aged 18-99 in a family practice with a board-certified physician in family medicine and an advanced practice, Doctor of Nursing Practice prepared nurse practitioner. The family practice is in Burlington County, Hainesport, New Jersey. The population of the city is 6075 people. Hainesport is 6.5 square miles, with 53% males, 47% female residents and 45.5 is the average age of its inhabitants. 80% of the

residents are white with 10% black, 6% Asian, and 3% Hispanic. 93% of its residents completed a high school education with 36.9% having attained a bachelor's degree from college. The median household income is $97,420 with 7.5% of the residents below the poverty line. (Census Reporter, 2019).

Demographic data, patient portal usage and the health care utilization of the accessed part of the record were examined. Patient names and identifying information were eliminated from the data collection. Inclusion criteria was all patients who received the education for the portal accounts during January 24, 2020 to April 3, 2020, a six-week study period. Exclusion criteria was information that was not within the study window and those not within the data demographics identified. Patients without internet access were excluded. Patients had the option to decline to participate in the study.

Since this was a quantitative retrospective study, there was not a predetermined sample size. (Rousch, 2015). Participants can be added until there is data saturation or not finding new information with additional participants being added. Participants were recruited upon presentation to the front desk staff for their appointment.

Ethical Concerns

IRB approval was received from West Chester University (See Appendix). The research presents no more than minimal risk to subjects. The research data that was collected was solely for the purposes of the study and was only available from the portal which is password protected. The investigator provided educational videos from the electronic medical record vendor, eClinicalWorks, for the staff to watch and learn about the portal so that they were prepared to educate the patients. There was no financial incentive nor was any patient be penalized for nonparticipation.

Data Collection

The data was collected from the electronic health record reports which are de-identified for patient information. The data was collected by the front desk staff who inquired for patient participation and collected their email address. Other patient demographics were available in the patient record. The portal generated a report based on portal use. The only staff who had access to the information were the office manager, the DNP student, the physician and nurse practitioner. The data collected in the report was the number of patients who logged into the patient portal, their ages and compare the data to the number of people who logged into the patient portal the previous year to determine if an education intervention increased knowledge for the patient about using the patient portal.

Data Analysis

A categorical two-sample t test was conducted to ensure pre and post implementation groups were statistically equivalent. To identify a change in utilizing the patient portal, a two-tailed sequential likelihood test was used. The Alpha of 0.05 was used.

The data information was collected by the front desk staff and the medical assistants upon arrival and interviewing the patient. An instructional educational sheet on how to use the patient portal was discussed with the patient. The patient was then brought back with the medical assistant who collected patient data and then continued with reinforcement of the patient education form for the portal. If there were no questions, the patient could engage in patient portal site.

Data was gathered from the portal. The portal counted each time a patient used the portal. Data was examined through a report to determine how many patients currently used the portal. The data was separated by demographics, how many females and how many males

used the portal. Next the data was separated by the age demographics of the portal, how many used the portal by age categories of up to age 18, age 19-34, age 35-44, and age 45-65. The data was calculated using the number of patients who signed into the portal.   The key stakeholders were the providers from the family practice including one medical doctor, an advanced practice doctorate nurse practitioner, the support staff including the portal champion, and the front desk personnel engaging with patients from the office.

Rigor

Trustworthiness and credibility were maintained throughout the study process. All data was de-identified for patient information. Credibility was maintained for the truth of the study data. Validity accurately reflected the ideas being investigated. Both validity and credibility were used to ensure there are no biases in the study. The study information was validated by the mentor for the project, portal champion and the office manager who supervised the process of collection within the staff. This helped overcome the issues that can occur with a single-observer study. (Roush, 2015).

Timeline

The study started on February 24, 2020 and ends on April 3, 2020. Of note, during this data collection period, Covid-19 played a part in how society managed daily activities. States enforced lockdowns for people who lived in them. People stopped traveling. Commuting and social distancing became the new normal. This influenced the data and study. The practice stopped seeing patients in their office and transitioned to virtual visits for patient care. The reminder alerts for general health follow ups were not generated as office visits were not being scheduled. Education for the portal stopped on March 17, 2020 when patient visits went to a virtual format. However, patients were still utilizing the portal.

Education did continue with virtual visits and also with any communication the staff had with the patients whether it was telephone calls or emails.

Budget

The budget for this study was minimal. There were minimal costs incurred for the printing of the forms for the collection of data, that were less than $100.00.

Chapter 4

Results

The data collection started on February 24, 2020 and continued for six weeks, ending on April 3, 2020. The patients were given information about the patient portal upon visiting the family practice. There was a follow up email or message sent to the patient following their visit for them to sign up for the patient portal. The portal champion and front desk staff along with the providers, helped manage the patients and ensured patients received the patient portal information.

Patient Demographics

There were 2430 patients in the practice during the study timeframe. A total of 673 patients were enabled for the web portal. 1757 patients were not web enabled. 462 females were enabled, and 211 males were enabled.

Response Rate

Of the patient's actively engaged, the age group of 45-65 years old were the most active with 100 patients accessing their records during this timeframe. Appointment reminders and confirmations, lab results, statement views, medication refills, and messages were the most used features of the patient portal. Drilling down to the communication aspect of the patient portal there were currently 12 communications with patients regarding their care in 2019 and 86 messages sent in 2020 to patients (See Figure 3). Results show that 59 patients viewed their own health records in 2019. In 2020 there were 113 patients who viewed their records (See Figure 4).

In looking at the patients who use the portal subtracted from those engaged in the use of the portal, there were 673 web-enabled to use the portal. Of that group in 2020, 544 were using the portal. Of the 2430 patients in the practice, only 673 were web enabled to use the portal for the study period.

Analysis

The number of patients who accessed the portal (test 1). A one-tailed *t*-test was used to determine the number of people who accessed the portal pre and post education intervention. The rate of participants was 31.6% lower in the post-intervention group, with a *p* value of 0.028. This is likely due to the pandemic and decreased appointments, cancelled well visit appointments and the change to sick only virtual visits being utilized. The *p* value was less than the chosen Alpha (0.05), therefore the null hypothesis was rejected and the difference in the pre and post intervention groups was significant. In other terms, the pre and post groups were different by virtue of interaction, behavior and appointment situations with the pandemic.

The usage rate/number of times portal was accessed per patient (test 2). A chi-square test was conducted to identify if there was a change in the frequency of portal access between the pre and post intervention groups. The null hypothesis assumed the frequency of access was similar in the pre and post intervention groups. In the pre intervention group, the portal was accessed an average of 2.7 times per participant and in the post intervention group 2.9 times per participant. The chi-square test had a *p* value of 0.38. The *p* value was greater than the Alpha of 0.05, meaning the null hypothesis could not be rejected and therefore the change in frequency of portal usage from the pre intervention to the post intervention group was not statistically significant.

Chapter 5

Discussion

In summarizing the review of the problem of engaging patients with the use of the patient portal, it was found that education did improve engagement with using the portal. The goal of the improvement project was to increase patient portal usage. Analysis of the data indicated that patients were more likely to use the portal after education and encouragement from their providers. This chapter will discuss the findings of the quantitative improvement project and what implications it has in practice and education. Future research will be discussed as well as any limitations of the project**.**

Patient engagement with the patient portal can lead to improved health outcomes in patients. Studies find patients have a strong sense of ownership of their health when direct access to their medical information was available to them. A study goal was to make patients aware of the test results and by keeping patients aware of their test results along with their health concerns, patients were more likely to come back for follow up with the providers. (Pillemer, Price et al, 2016). The key findings in this study indicated that with education and encouragement, patients were engaged with their patient portal and usage increased.

The findings fit within the theoretical framework by Imogene King. The framework inspired indicate with the use of action, reaction and problem discovery, mutual goal setting and exploration of the means to achieve the goal result in a mutual agreement between the providers, nurses and patients on how to reach their goal. The action of utilizing the portal for discovering their test results achieves a reaction from the patient. Once the problem is discovered, goals can be set between the patient and provider on how to address the concerns.

Through a team effort of provider, nurse and patient, goals for improvement in their health can be discussed and achieved. (Ancker, et al., 2015).

The implications for practice for providers are that education for the patient portal needs to be provided so that patients can understand the benefits of using the patient portal. By providing education throughout the patient visit, reinforcement of the portal value along with steps on how to engage the portal as well as how it can be useful for the patient need to be discussed. Only then can changes be made to improve a patient's health. By using Imogene King's framework of engaging the patient and making a commitment to make changes can significant health changes be achieved. A change to practice is education. Education is important for patient understanding.

This study only had a small group of patients and was only a study of one family practice setting with a small set of participants. Since it was only one setting, this may not represent all practices. Another factor was that not all patients were able to participate as all patients were not seen during this short six-week period. During this time, the Covid-19 pandemic changed the way patients were seen. The office changed their practice to virtual visits only during this time. Office visits were also changed to only virtual sick visits, routine and other types of visits were cancelled. Some of these factors may have produced bias within the study. An unintended consequence of the study was that there was limited face to face interaction with providers. This limitation required that patient's use the patient portal as a means of communication with their providers.

Additional findings during the study was that one of the providers was not tech savvy at the beginning, although throughout the study and in part due to the Covid-19 response, she became more adept with handling the portal. There was a champion in the office that was the

resource for concerns from patients and providers, but during this time, there was not as much interaction due to social distancing. The champion was the one who was the resource and helped to troubleshoot any issues or concerns.

Future implications for this study were addressing diversity issues. This practice had the smallest portion of patients under age 18, most patients being between 18-65 and a small number of patients over age 65. The city also is not as diverse with 80% of inhabitants being white, with the rest mixed races of Black, Asian and Hispanic. An underrepresented ethnic group can hinder the results of a study. (Terry, A., 2018). Healthcare literacy is another implication for study. Anxiety was noted in studies with patients who did not understand their test results posted in the portal and this could lead to an increase in provider workload answering additional questions about the portal. (Pillemer, Price, et al., 2016). Three suggestions for health literacy and portal education were that a self-guided learning was beneficial, a brochure with the highlights would be helpful and finally an in-person training would be of benefit. It was felt that a human interaction would help to decrease the anxiety felt when patients were using the portal technology. (Walker, Menser, et al., 2018). Further study is indicated on measures to prevent these circumstances.

In conclusion, the outcomes of this study indicate that education for patient portals is important. Once education was introduced to patients, they utilized the patient portal more often. There are complexities to this education. Diversity, patient populations, educational level of understanding, health literacy, language barriers and age can be factors that need more study. There are solutions to improving a patient's health and utilizing the patient portal with education for the patient is part of the solution. Education provides a comfort level with the patient portal as a tool to assist health care consumers to become better users of the health

system. They feel they have more control over their own health issues with knowledge to become more aware of the patient portal and utilize its benefits incorporating the provider and staff to share in the collaboration of health improvements.

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Table 1

Patient Data Collected for Utilization of the Patient Portal

Year	2019	2020
Messages per patients	12	86
Messages sent to office	19	118
Patient portal log ins	255	544

Note: In 2019, 12 messages per patient were received; 19 messages were sent to the office from patients to communicate and 255 patients logged into the portal. In contrast, in 2020 there were 86 messages per patient, 118 patients communicated with the office through messages in the portal and 544 patients logged into the patient portal, representing an increase in usage.

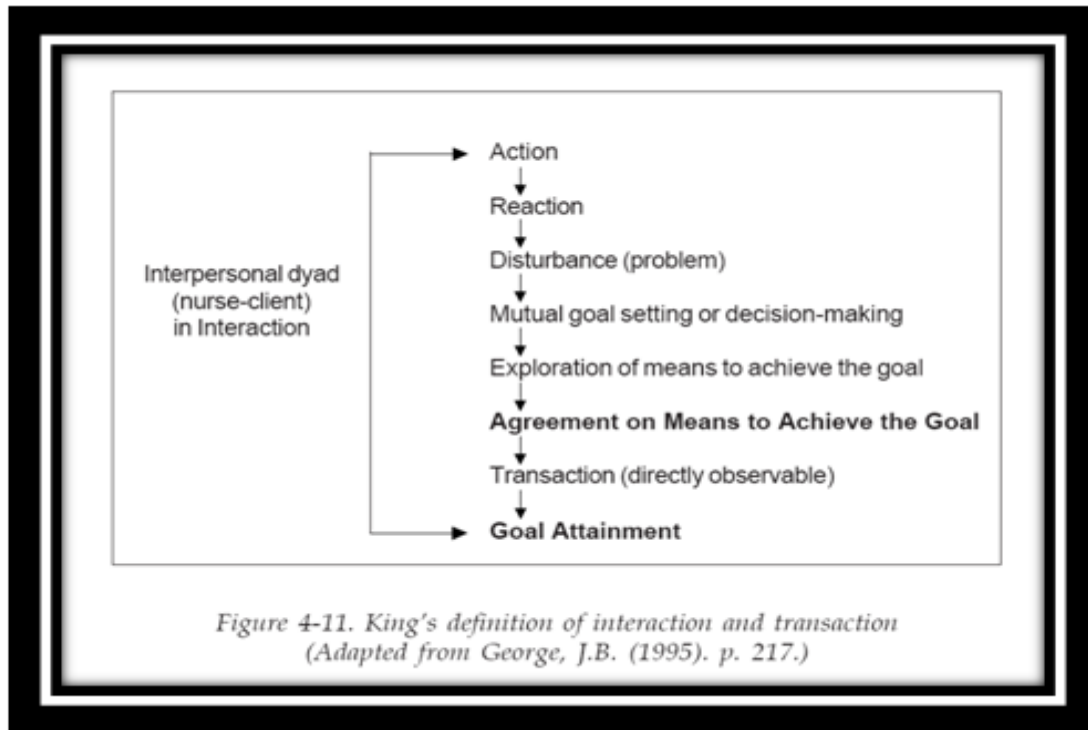King's Interpersonal Dyad (Nurse-Client in Interaction)

Action
↓
Reaction
↓
Disturbance (problem)
↓
Mutual goal setting or decision-making
↓
Exploration of means to achieve the goal
↓
Agreement on Means to Achieve the Goal
↓
Transaction (directly observable)
↓
Goal Attainment

Interpersonal dyad (nurse-client) in Interaction

Figure 4-11. King's definition of interaction and transaction (Adapted from George, J.B. (1995). p. 217.)

Figure 1. Ancker, et al., 2015.

Note: In the Interpersonal dyad, an action causes a reaction. A problem is discovered and with mutual goals set by exploring the ways to achieve the goal, an agreement from a provider and patient are used to accomplish the goal.

Goal Attainment Theory.


Figure 4-9. Elements of goal attainment theory
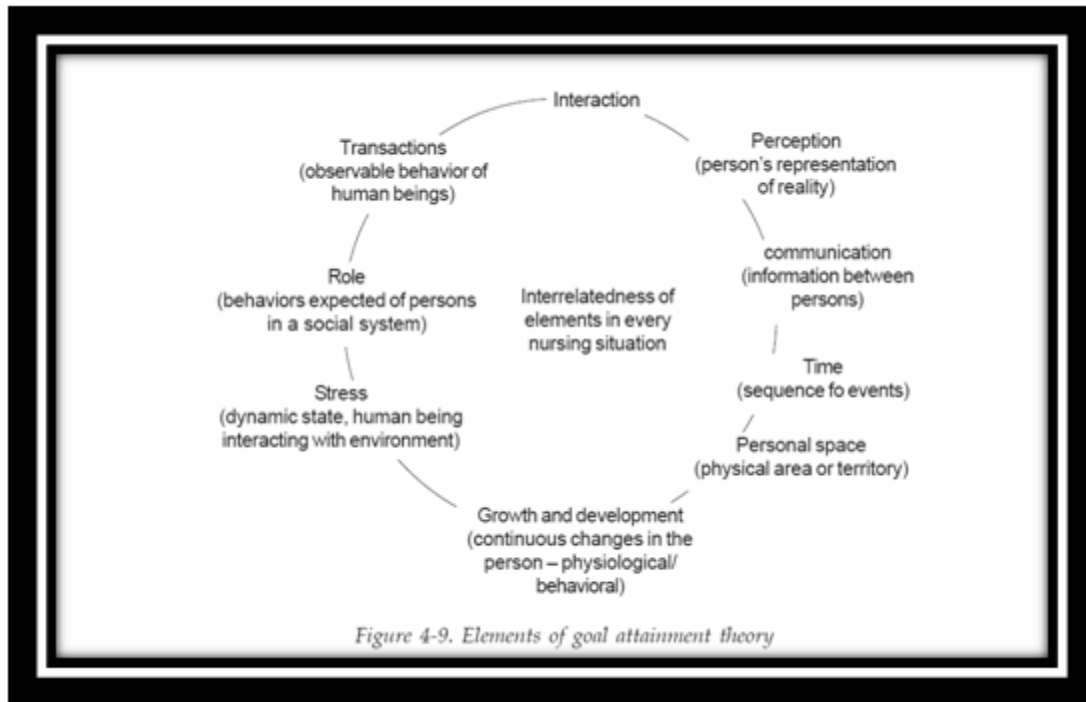
Figure 2. Ancker, et al., 2015

   In goal attainment theory there is an interrelatedness of elements in each nursing situation.
Through an interaction, a patient's perception is formed through communication, time spent
and personal space within the context of an office visit. Growth and development are
undertaken. The stress felt by the patient examined and the role of the person in the social
system is used to form a transaction whereby a patient and provider understand the what is
needed to create change to their health care needs and reinforce good health.

Graph of Number of Messages Sent to Patients

Number of Messages Sent to Patients
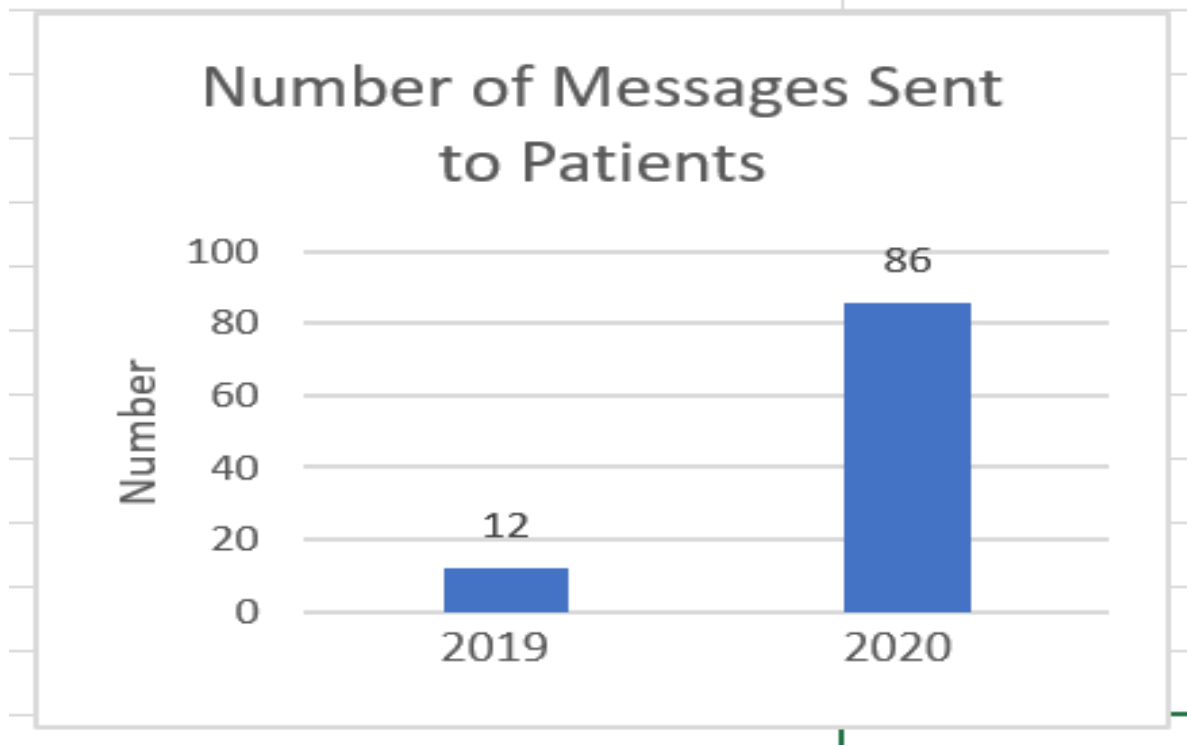
Figure 3. In 2019 there were 12 messages sent to patients. In 2020 there were 86 messages sent to patients from the providers. This measurement was from February 24, 2019 to April 3, 2019. Comparison was made to the same time frame from February 24, 2020 to April 3, 2020.

Graph of Provider Messages

Messages from Providers
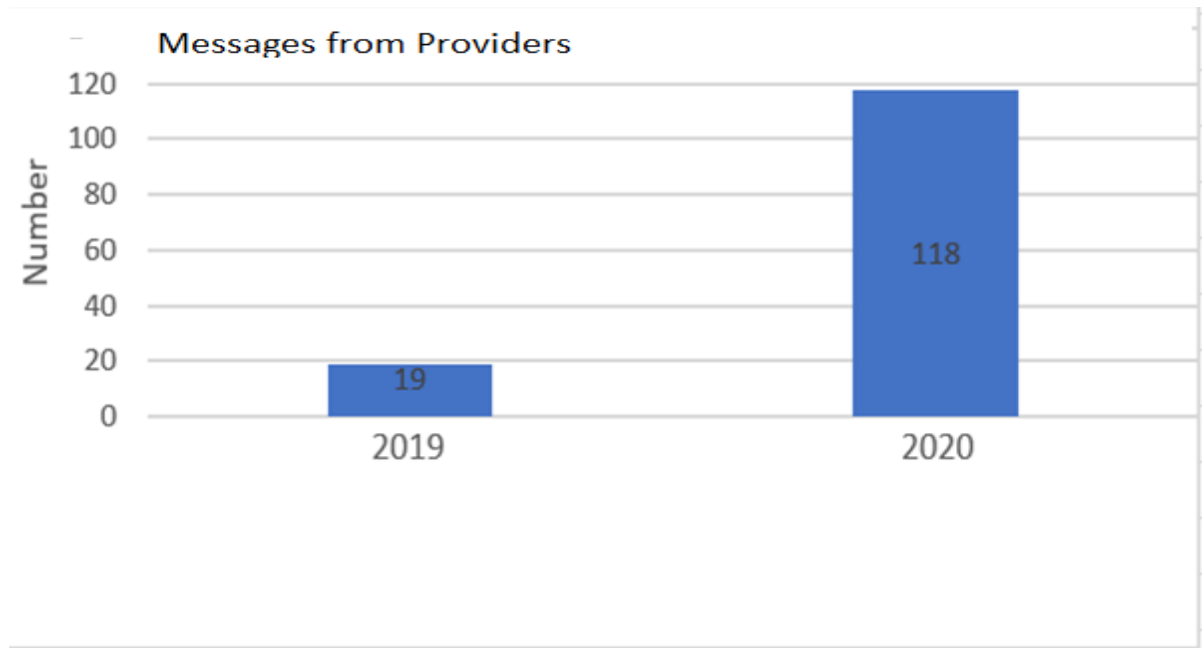
Figure 4. In 2019 there were 19 messages sent from the providers to the patients. After education in 2020, 118 messages were sent to the patients from the providers in the practice in comparison during the same six-week time from February 24, 2019 to April 3, 2019 when comparing to February 24, 2020 to April 3, 2020. This figure includes messages from providers to single patients, although patients could have received multiple messages.

Graph of Number of Portal Records Accessed Compared to Number of Patients Receiving Education
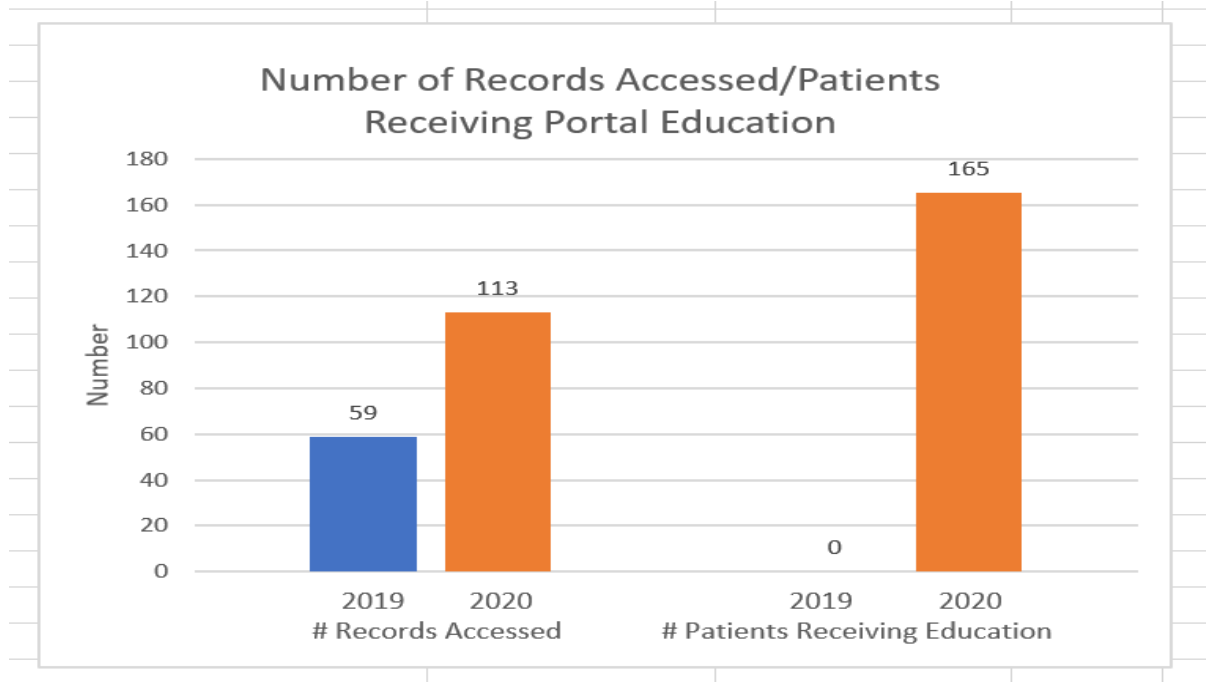

Figure 5. Prior to education being given to patients during the period of February 24, 2019 to April 3, 2019 there were 59 patient portal records that were accessed on the patient portal site. After education in 2020, during the same time period February 24, 2020 to April 3, 2020, there were 165 records accessed via the patient portal.

Appendix

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> **Protocol ID #   20200204A**
> *This Protocol ID number must be used in all communications about this project with the IRB.*

TO: Patricia Pawling, Dr. Cheryl Monturo

FROM: Nicole M. Cattano, Ph.D.
        Co-Chair, WCU Institutional Review Board (IRB)
DATE: 2/2/2020

Project Title: Improving Patient Portal Use After Patient Education
Date of Approval: 2/2/2020

☒**Expedited Approval**
    This protocol has been approved under the new updated 45 CFR 46 common rule that went in to effect January 21, 2019. As a result, this project will not require continuing review. Any revisions to this protocol that are needed will require approval by the WCU IRB. Upon completion of the project, you are expected to submit appropriate closure documentation. Please see www.wcupa.edu/research/irb.aspx for more information.

*Any adverse reaction by a research subject is to be reported immediately through the Office of Research and Sponsored Programs via email at **irb@wcupa.edu**.*

Signature:

[signature]

Co-Chair of WCU IRB

WCU Institutional Review Board (IRB)
IORG#: IORG0004242
IRB#: IRB00005030
FWA#: FWA00014155