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Educating staff to Improve Colorectal Cancer Screening in a Primary Care Setting

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
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Walden University
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Abstract

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MS, Walden University, 2017

BS, Stillman College, 1999

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

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Abstract

The practice problem for this Doctor of Nursing Practice project addresses the lack of education regarding colorectal cancer that is not being routinely screened by nursing staff within the primary care clinic setting. It is important that nursing staff is knowledgeable of current screening guidelines for current health issues within their community in order to decrease prevalence and use preventive measures that can improve population health outcomes. Therefore, the purpose of this project was to conduct a staff education project to increase nursing knowledge about routine colorectal screenings. The model used for evaluation of this staff education project is Kirkpatrick's evaluation model. An eight-item pretest/posttest was administered to eight members of the nursing staff. The mean score of the pretest was 40/100; the mean score for posttest was 95/100 on the eight-item assessment. The use of a paired *t* test to analyze the data showed a significant increase in knowledge between administration of the pretest and posttest ($p < .001$). In addition, Cohen's *d* effect was 0.7, which illustrates a significant increase. Implementing a staff education project increased knowledge and improved routine practices of the nursing staff on colorectal screenings within a primary care setting. By increasing nursing knowledge through staff education about colorectal cancer screenings, this project helped nurses to be able to identify patients at risk and improve health care outcomes. Furthermore, all staff involved agreed that the intervention was helpful, and they supported use of this educational intervention. The staff education project created an atmosphere in nursing practice that can impact health care disparities among at-risk populations to promote a positive social change.

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Section 1: Nature of the Project

Introduction

According to the Center for Disease Control and Prevention (CDC; 2019), millions of people in America are missing the opportunity for early detection of colorectal cancer because they are not being screened. The implementation of this staff education project for the Doctor of Nursing Practice (DNP) degree will assist in educating nursing staff about the importance of routine screenings for colorectal cancer. This DNP project will influence social change by providing an environment in the primary care setting that emphasizes recommended guidelines for colorectal screening and the importance of addressing this issue at every visit. Current guidelines for colorectal screenings are constantly evolving in accord with existing data and trends within a target population. According to the American Cancer Society (2020), current guidelines for colorectal cancer include screening at age 45 for people of average risk. According to discussion with leadership at the primary care clinic where this project was conducted, this recommendation must be reinforced.

The primary care clinic for the DNP project has a high patient volume of adult patients that have multiple comorbidities. Therefore, staff need continuous education about existing and changing guidelines that affect this population. The nursing staff is an essential tool in the health care setting to assist in identification of gaps in nursing practice that require intervention (White et al., 2017). Staff education can help increase knowledge and confidence in daily interactions with patients to improve overall patient

outcomes. This also promotes a positive social change that highlights the necessity of colorectal screenings and adds to the value of nursing care overall.

Problem Statement

Routine colorectal cancer screening in the primary care setting is necessary for early diagnosis and treatment (Center for Disease Control and Prevention, 2019). Colorectal cancer is the second leading cause of cancer in the United States among men and women that causes death. Within the rural community where the clinical practice is located, the majority of patients seen are African American. There exists a cultural stigma associated with participating in routine colon cancer screenings due to medical mistrust among African Americans (Adams et. al., 2017). This leads to higher rates of mortality due to lack of routine screenings for colon cancer. As reported by a primary care provider at this primary clinic, “The quality measures ratings for colorectal screenings at the primary care clinic within the Southern states are below national standard according to yearly reports from the insurance companies” (personal communication, September 3, 2020).

This doctoral project can significantly impact the knowledge of the nursing staff regarding the routine use of screenings for colorectal cancer within this at-risk population. Nursing practice within the clinical setting is a vital component in identifying gaps in practice that affect the overall delivery and quality of care that patients receive (White et al., 2016).

Purpose Statement

Identification of patients needing colorectal cancer screening are not being performed as frequently as they should be on the recommended population during routine visits to the primary care clinic in accordance with current guidelines (Primary care physician provider, personal communication, September 3, 2020). The question for this DNP project is: Within a primary care setting, will staff education increase knowledge of routine colorectal cancer screening toward the ultimate goal of early diagnosis and treatment? Staff education plays a pivotal role in health care settings to help translate evidence into current clinical practice. The use of routine colorectal screenings protocol within the primary care setting by nursing staff can help identify patients at risk earlier in the disease progression. Nurses perform chart assessments of preexisting conditions and chief complaints prior to the patient being seen by the provider. The education of nursing staff facilitates the identification of at risk populations and can be used to cue the provider to needed further assessments. Nursing staff will include pertinent questions to the current checklist to help identify and flag patients at risk for the provider to screen. The translation of evidenced-based guidelines into the clinical setting can improve patient outcomes and quality of care delivered (White et al., 2016). According to the 2018 Behavioral Risk Factor Surveillance System used by the CDC (2019), about one quarter of adults are not screened as recommended. This doctoral project will improve staff education about the importance of colorectal screenings within the primary care setting.

Nature of the Doctoral Project

This DNP project will serve to build an educational foundation based on current guidelines to develop a staff education intervention to promote best practices within the primary care setting. Nursing staff were given pre and post education assessments to evaluate the staff education intervention. This doctoral project will address the gap in practice that was identified by current clinicians within the primary care setting regarding colorectal cancer screenings.

I established and led a project team to plan, develop, implement, and evaluate the project. The team was involved in development of the curriculum and provided formative evaluation throughout the project. Summative evaluation included pre- and post-knowledge assessment and a program satisfaction survey, which was controlled by the project team (leadership) at the primary care clinic.

The purpose of this doctoral project was to improve staff knowledge regarding routine colorectal cancer screening. The implementation of this staff education project helps to address this gap in clinical practice to emphasize the importance of colorectal screenings among staff through education. The findings from this doctoral project include the advancement of staff knowledge to have a positive impact on the at-risk population within this clinical practice. Identifying more patients at risk at earlier stages through this doctoral project can help improve patient outcomes and prevent higher rates of mortality related to colorectal cancer. Nursing staff can help identify and flag at risk patients that may get overlooked on routine primary care visits by completing routine screening checklists prior to patient/provider interaction.

Significance

The stakeholders that will be impacted by this doctoral project include the nursing staff, patients, family members of patients screened, primary care physician, specialist, and administrator of the organization. The nursing staff can gain knowledge and confidence in their assessment skills. The patients and family members can receive a higher quality of care, increase their awareness of risk factors associated with colorectal cancer, and improve health outcomes. The physician and administrator can ultimately see quality measures among at-risk populations being addressed and increase confidence that they are delivering the best care available.

Potential contributions to the nursing practice can impact future screening protocol at this facility as well as other clinics on other issues where there are gaps in clinical practice. Advanced practice nurses have a responsibility to provide excellence in nursing care (American Nurses Association, 2019). Advanced practice nurses aspire daily to deliver the best possible care to improve patient outcomes. Nurses are also advocates for the highest standards of care and seek to identify gaps in care that compromise quality and patient safety.

The potential for transferability of this doctoral project to other areas of practice can be significant for other chronic illnesses. Lack of staff education about recommended routine screenings for breast cancer, prostate cancer, or lung cancer can negatively impact patients within a primary care setting. This is especially true for lung cancer because it has the highest mortality rate for both men and women above all other cancers and should be assessed routinely by nursing staff (American Lung Association, 2020).

There are several potential implications for positive social change that could help impact nursing staff knowledge level and confidence. This DNP project will influence social change by providing an environment in the primary care setting that emphasizes recommended guidelines for colorectal screening and the importance of addressing this issue at every visit. By educating staff on the significance of routine screening and the importance of early identification to prevent mortality, it can potentially promote prevention within the clinical practice setting.

Summary

This DNP project is a staff education project that was used to promote a positive social change within the primary care setting to address colorectal screenings. Colorectal cancer screening can provide awareness and interventions for addressing this gap in nursing practice within this practice setting. The next section will focus on the background and context of this DNP project by providing a nursing framework, showing relevance to practice, and identifying the roles of the participants in the project.

Section 2: Background and Context

Introduction

Routine colorectal cancer screening in the primary care setting is necessary for early diagnosis and treatment. The purpose of the doctoral project was to answer the question: Within a primary care setting, will staff education increase knowledge of routine colorectal cancer screening toward the ultimate goal of early diagnosis and treatment? As previously noted, a primary care provider at this facility reported that the identification of the population at risk of colorectal cancer were not being screened frequently on at-risk patients during routine visits to the primary care clinic in accord with current guidelines. There is a high patient load within this clinical practice, and current protocol relies solely on the provider to identify this population. However, educating nursing staff on conducting a thorough chart review to help flag these patients can help improve screening rates. This doctoral project was used to develop and implement a staff education project within the primary care setting to teach nursing staff the importance of colorectal screening to improve patient outcomes through early detection. Section 2 will include concepts, models and theories, relevance to nursing practice, local background and content, the role of the DNP student, the role of the project team, and a summary.

Concepts, Models, and Theories

This doctoral project used the Knowles adult learning theory to plan, develop, and implement the training program (Knowles, 1970). This theory and model is appropriate for the staff education project that was implemented because Knowles's adult learning

theory focuses on the various ways adults learn in comparison to children. This theory focuses on the way in which adult learners are self-motivated and are able to show responsibility for their decisions. According to Spies et al. (2015), Knowles's adult learning theory uses the concept of andragogy to define how adult learners have traits that internally direct their learning. Spies et al. argued that adult learners are problem focused and seek to apply knowledge quickly as well as having the desire to know the importance of what they are learning. For this educational program, the principles of Knowles's adult learning theory was used to develop the program by integrating the factors affecting adult learning.

According to the Knowles adult learning theory, one of the assumptions of learners is the need to know learning. For example, in this doctoral project, the nursing staff learned how the staff education can have a direct impact on their roles. In addition, another assumption of Knowles's theory involves having a problem centered approach. For instance, nursing staff understood the significance of identifying high risk patients for colorectal cancer and the role their nursing assessment serves in improving the rates of the population they serve by early detection. Staff education of nurses increased their depth of understanding and how their role can directly impact early detection and survival rates at this facility.

Kirkpatrick's levels of training evaluation model was used to evaluate this program for adult learners (Kirkpatrick, 1996). Kirkpatrick's levels of training evaluation model is a well-known model used for analysis and evaluation of academic and training program outcomes (Heydari et. al., 2019). Kirkpatrick's evaluation model uses four

levels of criteria to determine the effectiveness of an educational program (Kirkpatrick, 1994). These four levels include reaction, learning, behavior, and results. Only Levels 1 and 2 were used here, as time constraints preclude use of the other two levels. This type of model is an essential tool that can adequately evaluate a staff educational training program.

Level 1 of Kirkpatrick's evaluation model deals with reaction, and it evaluates how participants react by questioning their perception of the learning model established. The participant was asked to rate their experience with the training and decide if it was helpful or not. The Level 2 evaluation of Kirkpatrick's model deals with evaluating learning by the use of formal or informal tests that help assess the participant's knowledge and expertise. For this doctoral project, there was a pre and post assessment given to the nursing staff to evaluate their reaction to the staff education.

Relevance to Nursing Practice

The nursing profession promotes continual advancement of academic and clinical knowledge to promote excellence in care (American Nurses Association, 2020). In order to address gaps in care, advanced practice nurses must be able to identify areas of strengths and weakness in current practice that can benefit from implementation of current guidelines. Within this primary care setting, there were patients who meet the requirements by current guidelines to be considered high risk for colorectal cancer. The lack of nursing staff education about current guidelines directly impacts the rates at which these high risk patients are screened routinely. Higher rates of mortality in

colorectal cancer have been linked to late detection that could have been improved with routine screenings (Parente et al., 2015).

Nursing practice routines for colorectal screening have decreased in many areas through missed opportunities that impact rates of early detection. George et al. (2015) argued that providers who do not offer the recommended guideline screenings have a higher rate of missed opportunities that can improve early detection rates. Therefore, it is important that advanced nurses raise awareness of this missed opportunity in colorectal screening by facilitating the process nursing staff currently uses to highlight these patients during a clinical visit.

According to Stracci et al. (2014), several strategies exist to improve colorectal screening processes such as maintaining physician recommendations, organizing screening procedures, and developing new testing methods that are more accessible. Colorectal screenings have a great significance and benefit; however, they are only implemented with about 70% of the target population (Stracci et al., 2014).

Advanced practice nurses advocate for patient safety and quality of care that improves health care outcomes. The implementation of this staff education project can help increase knowledge of current guidelines to improve early detection rates of colorectal cancer within this primary care setting. This process helps nurses provide excellence in care for this gap in current practice through educational advancement and consistency in colorectal screenings.

Local Background and Context

The issue of colorectal cancer within this primary care setting is significant to the target population. The majority of patients seen in this clinical setting were African American patients ages 50-75. In rural Southern states, there exists a stigma to colorectal screening that creates barriers to early detection. This reluctance is embedded within the African American culture due to lack of trust in health care professionals and awareness of the significant impact this disease can have on the target population. The African American population may not be receptive to messages about health screening due to racial identity variations (Lucas et al., 2018).

Colorectal cancer is the second leading cause of cancer in the United States among men and women that causes death (Center for Disease Control and Prevention, 2019). African Americans have a higher percentage of mortality due to colorectal cancer diagnosis compared to other ethnicities. Within the primary care setting, the vision identified involves providing excellence in care every time. The implementation of the DNP staff education project aligned with the vision and mission through increasing knowledge.

Understanding workflow processes within the primary care setting allows easier implementation of the staff education project. This project enhanced the triage process of patients by identifying patients at risk based on age, race, and preexisting conditions. This staff education project assisted adult learners in understanding the importance of their role in identifying patients at risk as well as the impact of this overall rate of patients being screened at this primary care setting. This implementation also motivated

staff and increased confidence in knowledge level about identifying high risk patients for colorectal screenings.

According to the state's Department of Public Health, colon cancer is the second leading cause of cancer in the state (Alabama Public Health.gov, 2020). Within the primary care setting for this clinic, there are approximately 60 to 65 patients seen daily by health care providers. Nurse staffing includes three registered nurses and five LPN daily. All nursing staff required training on colorectal screening. The licensed practical nurses are responsible for triaging patients, identifying the chief complaints, and collecting vital signs. The licensed nurses are responsible for medication reconciliation, assessments, documentation, and performing routine screenings based on specific populations. The health care providers provide leadership to the staff to guide the implement screenings for prevention. In addition, they seek to reduce barriers to screening and facilitate screening within the primary care setting.

Role of the DNP Student

I am currently working as an advanced practice registered nurse with a specialty in Family Practice and Master of Science in Nursing from Walden University. While currently pursuing a higher degree from Walden, I implemented a DNP project at a primary care facility that involves staff education. My role included establishing and leading a team to plan, develop, implement, and evaluate the training program.

The motivation for this doctoral project is the impact on the African American population within this community. There is a lack of understanding about this condition and the higher mortality rates associated with this target population due to cultural

resistance, distrust of healthcare providers, and lack of knowledge. Due to the invasive nature of the colonoscopy, many African Americans may perceive it as a risky procedure. Therefore, providing accurate information to educate nursing staff about high risk populations identified by current guidelines can improve their chart assessment skills for flagging patients who need to be screened by providers.

There were no potential biases of the doctoral project involving my personal perceptions of current guidelines as a DNP student. The use of peer reviewed articles and journals maintained the foundation and focus of this project.

Role of the Project Team

For this staff education project, there was a project team of leaders established to complete the project. I led this project team to plan, develop, implement, and evaluate the training program for this DNP project. This leadership team (content experts) developed a curriculum for staff education to build the knowledge concerning colorectal cancer. Leadership selected the staff members that were involved and assisted in developing an eight-item knowledge-based test that was administered before and after the education program. The team also developed a two-item survey of program satisfaction. Data gained from these tools were provided to me in de-identified format for analysis and synthesis.

Summary

Colorectal cancer screenings are not being performed frequently within at risk populations during routine visits to primary care in accord with current guidelines. The implementation of a staff education project was used to increase knowledge about

colorectal cancer screenings which can benefit the primary care setting. As a DNP student, my role was to lead this project team through this process of implementation to improve the quality of care delivered. In the next section, the topics discussed will include collection and analysis of evidence, practice-focused questions, and sources of evidence.

Section 3: Collection and Analysis of Evidence

Introduction

For this doctoral project, the practice problem is that colorectal cancer screening is not being performed on routine visits to the primary care in accordance with current guidelines (American Cancer Society, 2020). The purpose of this DNP project is to answer the question: Within a primary care setting, will staff education increase knowledge of routine colorectal cancer screening toward the ultimate goal of early diagnosis and treatment? Colorectal cancer adversely affects the African American community and has higher rates of mortality related to late diagnosis. This project aligned with the roles encountered by the DNP prepared nurse on the academic level to improve patient outcomes.

Practice-Focused Question(s)

In rural Southern states, there exists a stigma to colorectal screening that creates barriers to early detection. This reluctance is embedded within the African American culture due to lack of trust in health care professionals and awareness of the significant impact this disease can have on the target population. The gap in practice existed because colorectal cancer screenings were not being performed during routine visits to primary care in accord with current guidelines. The practice-focused question that guided this project is: Within a primary care setting, will staff education increase knowledge of routine colorectal cancer screening toward the ultimate goal of early diagnosis and treatment?

This DNP project was used to improve staff knowledge regarding routine colorectal cancer screening. The use of a staff education project to implement this doctoral project within the primary care setting aligns with the practice focused question. By increasing the knowledge of the staff about the importance of colorectal screenings, it became a part of their normal routine with patients. Routine colorectal screenings within the primary setting will also lead to early detection of disease presence.

Sources of Evidence

According to the American Cancer Society (2019), the estimated number of people affected by colon cancer in 2020 was 104,610 and rectal cancer was 43,340 in 2020. The overall lifetime risk for men to develop colorectal cancer is one out of 23, and the lifetime risk for women is approximately one out of 25. In addition, in men and women combined, it is the second leading cause of death due to cancer within the United States. It is estimated that 53,200 people will died in 2020 from colorectal cancer. Current guidelines for practice recommended by the American Cancer Society (2019) state that average risk of colorectal cancer screening begins at age 45 with the use of a stool test or visual exam of the colon and rectum.

Several articles were reviewed that support the importance of following evidence-based guidelines for colorectal cancer to improve survival rates. George et al. (2017) addressed the role of fecal occult blood test screening for colorectal cancer and missed opportunity by providers to offer this guideline-based recommendation. Lindeberg et al. (2014) provided information about the association of recommended colon cancer screenings with identification of lower stages of cancer and higher survival rates. Parente

et al. (2015) provided information on the use of recommended colon cancer screenings to identify patients early and improve outcomes. Triantafillidis et al. (2017) addressed the role of primary care providers maintaining consistency with recommended colon cancer screening.

Gaertner et al. (2015) argued that there needs to be a multidisciplinary approach to the management of colorectal cancer in order to maximize survival rates. They also noted that colorectal cancer is the third leading cause of non-cutaneous malignancy within the United States and the second most common cause of mortality due to cancer. Increasing staff knowledge about colorectal screens will improve early detection rates and decrease mortality among the target population.

Colorectal cancer screening can identify any abnormal growths in the colon or rectum that could lead to possible malignancy. Early detection of colorectal cancer improves treatment rates and can decrease the number of deaths associated with this disease. However, according to the 2018 Behavioral Risk Factor Surveillance System used by the CDC, about one quarter of adults are not screened as recommended (CDC, 2019). Current guidelines for colorectal screening from the U. S. Preventive Services Task Force recommended screening begin at age 50 and continue through age 75 using fecal occult blood testing, sigmoidoscopy, and colonoscopy with a grade of "A" for ratings. The literature used to support this practice focused question included current and relevant peer-reviewed articles from published literature. The search terms used included *colon cancer, colorectal, colorectal screening,* and *colon cancer guidelines*. The articles used came from within a 5 year time frame from 2015 until 2020. It included journals

and articles that include randomized controlled trials (RCT), quantitative, qualitative, meta analysis, and systematic reviews found using three search engines within the Walden Library database. These search engines included Pubmed, CINAHL Plus with full text, and Medline. The level of evidence included Level 1 and Level 2 for this doctoral project. However, lower levels of evidence such as case studies and expert opinions were not included. In addition, the guidelines came from the American Cancer Society to outline risk factors for staff education.

Evidence Generated for the Doctoral Project

The evidence for this doctoral project was collected by the project team at the clinical site through the use of pre and post knowledge based evaluation. The team was involved in the development of the curriculum and provided formative evaluation throughout the project. Summative evaluation included pre- and post- knowledge assessment and program satisfaction survey. This assessment was developed with the project team to highlight areas of strengths and weaknesses within the primary care setting to educate nursing staff. Assessments are an effective tool to evaluate a doctoral project because they are easy to use and cost effective (White et al., 2017).

This doctoral project obtained IRB approval prior to initiation within the clinical primary care setting. This project provided human protections by meeting the current requirements of the Institutional Review Board at Walden University. In addition, I ensured that the project was within the parameters of the Walden Education Manual and all data collected remained the property and in the control of the primary care leadership who determined participation by staff (Walden University, 2019).

Analysis and Synthesis

The practice-focused question that guided this project is: Within a primary care setting, will staff education increase knowledge of routine colorectal cancer screening toward the ultimate goal of early diagnosis and treatment? The analysis of the data for this doctoral project included the analysis of preprinted assessments for pre and post knowledge. These simple knowledge-based tests contained a set of questions to assess current staff knowledge about colorectal screenings using Knowles's theory of learning. Then, the same questions in a posttest assessment were administered to staff to evaluate the significance of the training received. These de-identified data were synthesized by the use of descriptive statistics and the use of a t test to determine significance with the use of SPSS software for calculation. Kirkpatrick's evaluation model uses four levels of criteria to determine the effectiveness of an educational program (Kirkpatrick, 1994). These four levels include reaction, learning, behavior, and results. Only Levels 1 and 2 were used here, as time constraints precluded use of the other two levels. The satisfaction survey was also used to analyze and synthesize data using simple descriptive statistics. This survey was used to assess the perception of knowledge based on the information learned from this DNP project.

Summary

In summary, the collection and analysis of evidence for this doctoral project involved a cumulative process of evaluation and strict adherence to ethical principles. Leading a project team through the collection process and conducting a thorough literature review to support the practice focused question was an essential part of this

project. For the next section, the findings and implications, recommendations, contributions of the doctoral project team, and strengths and limitations of project are discussed.

Section 4: Findings and Recommendations

Introduction

Routine colorectal cancer screenings can help improve early detection rates and patient outcomes within a primary care setting. Staff education that is based on current guidelines in clinical practice provides a template for best practices that can improve health care outcomes. Routine screenings for colorectal cancer are not being performed as frequently as they should in the primary care setting. The practice focused question for this project was: Within a primary care setting, will staff education increase knowledge of routine colorectal cancer screening toward the ultimate goal of early diagnosis and treatment? This DNP project was driven by the problem that identification of patients needing colorectal cancer screening are not being performed as frequently as they should be on the recommended population during routine visits to the primary care clinic in accordance with current guidelines.

The evidence for this doctoral project was collected using pre and post assessment questionnaires and an evaluation assessment of the project. The training content for this project was reviewed by three expert panelists and deemed relevant to this clinical practice. There were eight nurses that voluntarily participated in this DNP project and three expert panelists on the project team. These eight nurses were given pre-printed pretest eight item assessments as part of this staff education project in the form of a Lickert scale. Then, the nurses were present for a 20-minute oral presentation about colorectal screening guidelines in their conference room the next day. After, the nurses were given the same eight item posttest assessment. This educational intervention was

developed using Knowles's adult learning theory. This assessment questionnaire was based on Levels 1 and 2 of Kirkpatrick's evaluation model. The analysis of these data was performed using descriptive statistics and a paired t-test in SPSS. This section discusses the findings and implications, recommendations, contribution of the doctoral project team, and the strength and limitations of this doctoral project.

Findings and Implications

With this staff education project, I sought to determine if nursing staff knowledge concerning colorectal cancer screenings would increase regarding current evidence-based guidelines in order to implement early detection. The doctoral project involved four stages: Stage 1: Administrator, nurse supervisor and physician evaluation; Stage 2: Pretest assessment administration (Appendix A); Stage 3: Oral presentation administered to nursing staff; and Stage 4: Administration of posttest assessment to nursing staff (Appendix A).

Stage 1: Panel Assessment

For Stage 1, the three panelists consisted of the physician, registered nurse supervisor, and physician. They were presented with the educational material for review. The three panelists were in consensus regarding the applicability of the information to the clinical practice. The panelist deemed the information for the project to be relevant to current clinical practice and that it would assist in increasing staff knowledge about colorectal cancer screenings. They also concluded that the presentation met the criteria for clinical objectives of nursing staff continued education and training. Table 1 illustrates the results of the assessment by the clinical panelist.

Stage 2: Pretest Assessment

In Stage 2 of this doctoral project, the panelist deemed the pretest assessment was appropriate with the clinical objectives of the nursing staff. It was decided by the panelist that the pretest assessments would be done in the conference room and a time was selected. There were eight nurses present for the pretest assessment to assess the current knowledge of colorectal cancer screenings guidelines by the CDC. Each pretest assessment contained directions for completion and a box was provided to ensure anonymity. The pretest was an eight item Lickert scale that focused on current clinical perception of colorectal screenings and current guidelines based on the CDC (Appendix A). Based on the data collected, all eight nurses were *completely unaware* of knowledge for Questions 3 and 8. However, all eight nurses reported being *somewhat aware* of information regarding Question 5. One nurse reported being *completely unaware* of the current guidelines for colonoscopy screens every 10 years; however, they all felt the information was relevant to current clinical practice.

Stage 3: Staff Education Presentation

In Stage 3 of this doctoral project, the panelist deemed the educational presentation was appropriate with the clinical objectives of the nursing staff. This staff education project was an oral Powerpoint presentation that lasted approximately 20 minutes with a post question and answer session immediately after. The nursing staff also received a handout with the information printed on it to help them follow the presentation. This presentation included information about current CDC guidelines for colorectal screenings, risk factors, symptoms, and a summary of the disease. In addition,

this presentation gave a brief overview of all possible diagnostic tests and procedures for screenings according to current guidelines. Another aspect of the presentation included identified risk factors such as age, race, physical exam, lifestyle, and pre-existing conditions that nursing staff should be knowledgeable about.

Stage 4: Posttest Assessment

During the final stage of this staff education project, the nursing staff was given instructions on completion of the pretest. The posttest was a collection of the same questions presented on the pretest (Appendix A). There was also a two-question evaluation survey regarding the presentation. The wording of the posttest was identical to the pretest assessment questionnaire. The posttest was anonymous, and participants were allowed to place their questionnaire within an unmarked box. It was an eight-question assessment in the form of a Likert scale with the same eight nurses participating. Of the eight nurses participating in the posttest, the results showed increased awareness from all reported being *completely aware*.

One of the major limitations of this project was the limited number of participants available within the facility. The lack of a large number of participants could impact the transferability of project study to other clinical areas. In addition, this particular clinic treats a large majority of geriatric patients that are 65 years old or above; therefore, early detection in this population may not be optimal. In addition, one of the eight was a new graduate about 6 months out of school compared to the other nurses with 15-20 years of experience in primary care.

The findings of this study could positively impact the community by increasing the knowledge of the nurses within the primary care regarding early identification of patients at risk for colorectal cancer. Early detection leads to improved survival rates among this community's population as well as a higher awareness of the serious complications associated with a late diagnosis. In addition, the results show a potential for positive social change within the health care setting by providing staff education to the nursing staff that improves the quality of the care delivered. This staff education project set a foundation for the importance of implementation of current guidelines within the primary care setting and continuous education of the nursing staff. One important aspect of this staff education was that the project met clinical objectives and approval from the current administration to help increase nursing knowledge of colorectal cancer screening. In addition, the nursing staff agreed that the information provided helped increase their knowledge base and was applicable to current practice within the primary care setting. There was a paired t test performed that correlated an increase in staff knowledge regarding colorectal cancer screenings. According to the results of the paired t test, the test statistics is $t = -17.8$, with 7 degrees of freedom and $p < 0.0001$. Because the p value is less than $a = 0.05$, with 95% confidence limits (61.6, 41.2), there is a significant increase in nursing knowledge. The average test score increased 54.4 points from pretest to posttest. In addition, the effect size = (M1-M2)/ SD, ES =0.7, therefore Cohen's d effect size is large and has statistical significance. The descriptive statistics and paired t test results are illustrated in Table 1 below.

Table 1

Pretest Posttest Results

	Means	Std deviation	Std error	95% CI Lower	95% CI Upper	t	df	Sig 2-tailed
Pretest-Posttest	-54.375	8.63444.	3.0527	-61.5936	-47.1564	-17.81	7	< .001

Recommendations

Within this primary care setting, there was a gap in practice noticed by administration regarding colorectal cancer screenings among high risk patients among nursing staff. The nursing staff was unaware of the current guidelines by the CDC about early detection and mortality from colorectal cancer that could be impacted by early detection. The patient population at this facility are consistent with the CDC guidelines for screenings to identify patients at early stages of the disease. Therefore, it is the recommendation that administration should implement continuous education within current protocols for nursing staff regarding colorectal screens. It would be useful to implement a clinical policy and protocol for nursing staff to update their knowledge and apply this information to care delivery on routine visits in the primary care clinic. In order to address this gap in practice, it is important that administration maintains consistency in following current guidelines from the CDC.

Contribution of the Doctoral Project Team

Working with the doctoral project team involved administration and nursing staff to help identify, develop, and modify appropriate material for presentation based on the gap identified in clinical practice. The doctoral project team included the physician,

administrator, and nursing supervisor. The doctoral team was responsible for selecting an appropriate time and place to conduct the meetings, selecting the length of time required to complete each task, and identifying any information missed based on clinical experiences. Then we collaborated to determine specific learning objectives for the nursing staff as well as the appropriate way to deliver the information, the topics to focus on, and the type of survey that would be user friendly for the nursing staff.

The doctoral team assessed the process used to determine how the results impacted the knowledge of the nursing staff and the impact of that knowledge on the clinical practice. In addition, this project initiated a discussion among the doctoral team to determine if this type of project could be used within other areas of the primary care practice. The nursing staff evaluated the time and resources needed to complete the doctoral project. Based on this discussion, the doctoral team planned to create an action plan for the facility to expand this type of project to other areas where gaps were identified in the practice.

In addition, this project initiated a discussion among the doctoral team to determine if this type of project could be used in other areas of the primary care practice. The nursing staff evaluated the time and resources needed to complete the doctoral project. Based on this discussion, the doctoral team planned to create an action plan for the facility to expand this type of project to other areas where gaps were identified in the practice.

Strengths and Limitations of the Project

One of the strengths of the project was the positive attitudes and willingness of the members of the doctoral team to participate fully. Many times, during any change, regardless of the setting, there is some form of resistance during the process. However, there was no resistance noted by the administration or staff, and there seemed to be a consensus from all for the need for improvement in current practice. In addition, the team consisted of members from various backgrounds, experience, length of time at facility, and educational level. This helped to diversify the results and provide a perspective at different levels as opposed to a group that was similar.

One limitation of the project was the small sample size found at this facility for the doctoral project. The use of a smaller sample size can impact the ability to generalize the results of this study to larger clinics. However, this was a good template for addressing future gaps in practice at this particular facility as well as other small clinics with similar staff. This type of project could be useful in addressing gaps in patients with type II diabetes as well by introducing clinical based guidelines to nursing staff.

Summary

This staff education project illustrates the effectiveness of including clinical based guidelines into clinical practice. In addition, the advancement of nursing staff education helped increase the knowledge and confidence in daily clinical practice to improve clinical outcomes. The pre and post assessments results supported the recommendations for this project. In Section 5, the dissemination, analysis of self and summary are discussed.

Section 5: Dissemination Plan

These doctoral project results were favorable for the inclusion of clinical guidelines in primary care settings regarding colorectal cancer screenings at this facility. As leader of this doctoral project and a DNP student, my next step is institutional approval and publication. It would be appropriate to continue dissemination of this project to sister clinics in the area through staff training online or in person. The optimal audiences for further dissemination would include nursing staff, administration, and health care providers.

Analysis of Self

I took on many roles that posed challenges and rewards during this staff education project. As a scholar, I found this experience working as a change agent to be a difficult process from beginning to end . The process of conducting literature research and review to create and develop a project that was significant to current practice was challenging. As a project leader, it was a great experience collaborating with this facility's staff and administration to address gaps in practice that were significant to everyone. This helps to build personal experience and confidence as a change agent to address gaps in practice in the future at other facilities. One long term professional goal of mine is to teach at a university or college in the nursing profession to promote excellence in nursing.

One important insight acquired during this scholarly journey was maintaining inclusion of everyone is a key component to success of the project. Within a work environment, everyone needs to understand that their role is significant to overall patient care. Including all nursing staff, administration, and health care providers provides a

clearer view of the big picture of providing quality care to all patients. This scholarly journey has helped refine my research and interpretation skills of data and results. As a DNP student, these skills are necessary to become an effective change agent to address gaps in practice using evidence-based guidelines to improve patient care.

Summary

This staff education project was developed to increase the knowledge among the nursing staff regarding the importance of colorectal cancer screenings within the primary care setting. There was a gap in practice noted within this setting regarding identification of high risk patients among this population. In an effort to improve early detection rates in high risk patients in this facility for colorectal cancer screenings, this DNP project was developed and implemented through a collaborative effort. There was a pre and post assessment conducted to assess staff knowledge during this project. The data show an increase in staff knowledge after the information was disseminated for this doctoral project. The implementation of this DNP project created an opportunity for nursing advancement to improve the quality of patient care through the use of evidenced based guidelines in clinical practice.

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Appendix A: Title of Appendix

Appendix A: Pretest & Posttest Questionnaire

Based on your current knowledge of current guidelines for colon cancer screenings, please read carefully and select the appropriate box that represents your level of understanding.
Please utilize the following scale to record your responses to each question:
1=Completely Unaware, 2= Somewhat Unaware, 3=Neither Aware nor Unaware, 4=Somewhat Aware, 5= Completely Aware.

Questions	1	2	3	4	5
Colon cancer screening is recommended for adults starting at age 45 to 75 yo					
Colon cancer screening can be used to detect polyps or cancer					
There are several different types of colon cancer screenings that have been recommended by the U. S. Preventive Task Force					
Colonoscopy screening is recommended every 10 years for people without increased risk					
Multiple colon cancer screening tests are available					
Recommended stool tests for colon cancer screening include the Fit-DNA, fecal immunochemical test (FIT), guaiac-based fecal occult Blood test (gFOBT)					
Flexible sigmoidoscopy is also a recommended screening test for colon cancer					
Risk factors identified include family history, obesity, Inflammatory bowel syndrome, low fiber diet, tobacco use and alcohol consumption					

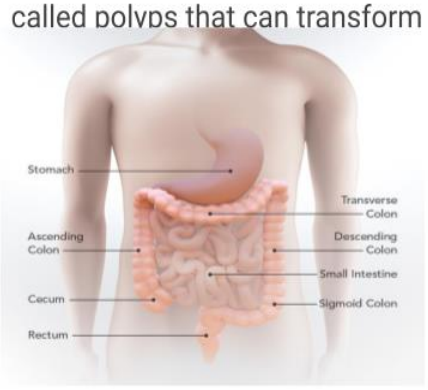
Appendix B: PowerPoint Presentation

Colon Cancer Screening for Primary Care

By Angela Rayborn, MSN, CRNP, DNP student

About Colon Cancer

Colon cancer can occur in the colon or the rectum. There can be abnormal growth called polyps that can transform into cancer (CDC, 2021).



Recommended guidelines for colon cancer screens

Colon cancer screening can detect polyps and help identify colorectal cancer at early stages. Most people with polyps or colon cancer do not have any symptoms. It is recommended by the U. S. Preventive Task force to begin screening for colon cancer starting at age 45 to 75 years of age (CDC, 2021).

Risk Factors for Colon Cancer

1. Inflammatory bowel syndrome such as Ulcerative Colitis or Crohn's
2. Family history
3. Decreased physical activity
4. Low fiber diet
5. Overweight or obesity
6. Alcohol use
7. Tobacco use

Possible symptoms of colon cancer

1. Change in bowel movement
2. Blood in stool
3. Chronic abdominal pain or cramps that don't go away
4. Chronic constipation
5. Chronic diarrhea

Types of colon cancer screens available

Stool Tests

1. FIT-fecal immunochemical test (yearly)
2. Guaiac-based fecal occult blood test (gFOBT) (yearly)
3. FIT-DNA (every 3 years)

Flexible Sigmoidoscopy (every 5 years)

Colonoscopy (every 10 years for low risk patients)

Virtual colonography (every 5 years)

Summary

Colon cancer is a predominantly asymptomatic disease that when detected early can improve survival rates among high risk populations. Implementing current guidelines for colorectal screening is an important tool in the primary care setting to provide quality of care and decrease deaths related to colopn cancer diagnosis.

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