

2020

Impact of Nurse Education Program on 30-Day Readmissions Among Ischemic Stroke Patients

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Walden University

College of Health Sciences

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Mariana Tsucuneli

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2020

Abstract

Impact of Nurse Education Program on 30-Day Readmissions Among Ischemic
Stroke Patients

by

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MS, Walden University, 2018

BS, Davenport University, 2014

Project Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Nursing Practice

Walden University

August, 2020

Abstract

Unplanned 30-day readmissions among patients diagnosed with ischemic stroke (IS) is a significant public health problem in the United States. The Affordable Healthcare Act introduced financial penalties and incentives for facilities to encourage the adoption of care plans aimed at reducing 30-day readmissions rates for stroke and 5 other illnesses. Therefore, facilities with high rates of 30-day readmissions for IS patients are penalized by the Centers for Medicare and Medicaid services in addition to receiving poor scores on the quality of care they provide. This project was a staff education program aimed to improve postacute stroke transitional care and reduce 30-day readmission rates. The project was guided by a research question about if an educational program focused on active engagement and caring for patients, compared to standard practice increases nurses' knowledge of poststroke transitional care to reduce 30-day readmission rates in discharged patients, within 8 weeks. The project was implemented in a stroke unit of rehabilitation facility where a total of 14 nurses were educated. The evaluation outcomes indicated a 61% improvement in nurses' knowledge of transitional care after the implementation of the educational program. Implementing the nurse education program has the potential to improve clinical practice by preventing and reducing the rates of 30-day readmission rates for postacute stroke patients.

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Section 1: Nature of the Project

Introduction

Patient readmission within 30 days following initial stay and discharge is a common problem in the United States, occurring at an estimated 14% of all hospital admissions (Hughes & Witham, 2018). The 30-day readmission rates in United States hospitals are used as quality measures. The hospital readmission reduction program (HRRP) established in the Affordable Care Act provides financial incentives to healthcare facilities with lowered readmission rates (Centers for Medicare and Medicaid [CMS], 2019). The CMS also fines hospitals with high 30-day readmission rates relative to other healthcare facilities under the HRRP (CMS, 2019). Using 30-day readmission rates as a quality measure also affects facilities with high rehospitalization frequency and is used as an indicator of inadequate care provision (Vahidy et al., 2017). Hospital readmission is also associated with other problems for the facility, including longer stays and a higher risk of complications for the patient (Hughes & Witham, 2018).

Ischemic stroke (IS) is one of the health conditions whose 30-day readmission is monitored by the CMS under the HRRP (CMS, 2019). Approximately 12% of IS patients are readmitted to hospitals within 30 days of discharge in the United States (Vahidy et al., 2017). Readmissions due to IS are considered high risk, and the use of the readmission rates as a measure of quality is prioritized at the national level (Andrews & Freburger, 2015). The type of postacute stroke care has been associated with transitional care outcomes, including 30-day readmissions and recovery (Poston, 2018). Educational interventions for nurses have been associated with improved patient and quality of healthcare outcomes in stroke care (Jones et al., 2018). This

DNP project involved developing a nurse educational program focused on transitional care for IS patients associated with reducing 30-day readmissions. The developed program was implemented to all the nursing staff working at the postacute IS ward in a rehabilitation center in the Northeastern United States. The expected social change is transitional behaviors among the nurses to include checking for risk factors for postacute stroke disorders. The anticipated implications for social change are the reduction of risk of postacute stroke disorders and 30-day readmissions among stroke survivors.

Problem Statement

The target healthcare facility was an inpatient rehabilitation center with a stroke unit, which had prevalent unplanned 30-day readmissions. Up to 60% of the patients admitted at the facility have several comorbidities. Among patients with stroke, comorbidities such as respiratory diseases and urinary tract infections are associated with a high risk of 30-day readmissions (Poston, 2018). Inadequate transitional care, including failure to identify poststroke disorders, risk factors, and lack of social engagement among IS patients, have also been associated with increased rates of 30-day readmissions (Poston, 2018). A brief needs assessment established that there was a gap in transitional care knowledge among the nurses as well as harmonization of the care procedures among all postacute stroke patients.

Stroke is among the leading causes of mortality and long-term disability (Poston, 2018). With the aging population rising, IS prevalence is expected to increase, with projections of up to a 20.5% surge by 2030. Improving the quality of transitional care in healthcare facilities is expected to help prevent the occurrence of poststroke conditions requiring hospital readmissions (Poston, 2018). Additionally,

understanding IS and its risk factors could lead to a more focused quality of care, potentially reducing the risk of readmissions (Andrews & Freburger, 2015). In a facility with high 30-day readmission rates among IS patients, a staff educational intervention aimed to improve the understanding of postacute stroke readmission risk factors can be helpful in reducing the prevalence of rehospitalizations.

The nursing workforce is the most involved of all healthcare providers in patient care (American Association of Colleges of Nursing [AACN], 2019). In the treatment of IS, up to 60% of the survivors require postacute care services in rehabilitation, skilled nursing facilities, and in-home healthcare services that are primarily provided by nurses (Poston, 2018). Therefore, nurses can transform the quality and type of healthcare provided to postacute stroke patients. With improved awareness, the nurses were able to identify posttransition issues early enough and address them to avoid rehospitalizations (Poston, 2018). A nurse educational program on patient engagement and risk factors for poststroke disorders requiring acute care is significant and could improve the prevention of 30-day readmissions (Nakibuuka et al., 2016). Thus, this project contributes to the nursing practice by adding to the existing knowledge regarding evidence-based nursing practices such as patient engagement. The project contributed evidence supporting nursing practices aimed at improving the quality of care as well as patient and facility outcomes. Patients whose risk factors for poststroke readmissions are identified and addressed at an early stage benefit from the prevention strategies by improving their recovery and health outcomes (Poston, 2018).

Purpose

The gap in nursing practice that this staff education doctoral project addressed was the lack of adequate knowledge related to postacute stroke transitional care. The aim of implementing the project was to address the lack of adequate knowledge of the active engagement of patients and the early identification of risk factors for poststroke readmissions. The purpose of the DNP project was to develop and implement a nurse educational program on postacute stroke transitional care to reduce 30-day readmission rates among IS patients. The DNP staff education project was guided by a practice-focused question: Among nurses caring for IS patients (P), does an educational program focused on active engagement and caring for patients (I), compared to standard practice (C), increase nurses' knowledge of poststroke transitional care to reduce 30-day readmission rates in discharged patients (O), within 8 weeks (T)?

The project was a staff education program focusing on active patient engagement and identification of poststroke readmission risk factors with the aim of decreasing 30-day readmission rates at the facility. The quality of care provided during the transitional period from the hospital to a rehabilitation facility has a significant effect on the readmission rates of IS patients (Hudali, Robinson, & Bhattarai, 2017). There is also evidence that poststroke disorders requiring readmissions are preventable (Poston, 2018). Providers who are more knowledgeable of the type of care to offer patients during transition and rehabilitation period are able to identify the predictors of readmissions and address them at an early stage. The staff education project addressed the gap in knowledge of the nurses working at the

rehabilitation facility and enabled them to identify and address risk factors for poststroke disorders that might lead to unplanned hospital readmissions.

Nature of the Doctoral Project

The project involved the development and implementation of a nurse education program on the care of IS patients in an inpatient rehabilitation facility located in the Northeastern United States. The focus of the project was on evaluating the effectiveness of a staff education program on improving nurses' knowledge of postacute stroke transition care. The educational program was developed from the reviewed literature and was validated by an expert panel at the facility of implementation. The transition care plan involved patient engagement focused-care, identification, and addressing preventable poststroke disorders. The nursing staff working at the unit were educated to improve their knowledge on the type of care to provide to IS patients before discharge to prevent unplanned 30-day readmissions. The education program was designed with input from an expert panel and based on the review and synthesis of the literature on the appropriate transitional care for IS patients to avoid 30-day readmissions. The de-identified data to support the effectiveness of the staff education program postimplementation was obtained by administering questionnaires to the nurses to assess their expertise in poststroke transitional care, including the identification of the risk factors for readmissions and patient engagement on postdischarge care.

Project data were organized into pretest and postintervention columns. Preintervention data were the nurses' responses to the questionnaires issued a week before the project implementation. Postintervention data were the nurses' responses to the questionnaire issued 8 weeks after the first training session. I compared the pretest

and posttest data to analyze the outcome to determine the percentage change in the levels of knowledge. Improvements in nurses' knowledge and expertise after the staff training program were an indicator of the effectiveness of the staff education program. The 8-week timeframe for pre- and post-intervention data collection was selected to obtain sufficient population data for evaluating the project outcomes. The outcomes of interest are the knowledge and expertise levels; the staff education program was conducted in two to four sessions, held once a week.

The aim of conducting the DNP project was to improve the knowledge of nurses on postacute stroke transitional care. The purpose of the DNP project was to develop and implement a nurse educational program on postacute stroke transitional care to reduce 30-day readmission rates among IS patients. The project's objective was to improve the knowledge of the nursing staff on the care of IS patients to reduce 30-day readmission rates.

Significance

The primary stakeholders for this DNP project are the IS patients, administrative staff, and nurses working at the stroke rehabilitation unit in the healthcare facility. Patients' recovery and postdischarge progress are dependent on the type and quality of care provided to them before leaving the hospital. The quality of care that nurses provide to these patients was affected by the educational intervention presented in the scholarly DNP project. The intervention was the first of the kind to be implemented at this specific facility; thus, it was an update on the current evidence best practice knowledge for the nursing staff. Other stakeholders of the project include the nursing manager and the administrators of the facility. The nursing manager supervises the nurses, and any improvement in the type of care provided

reflected their superior's commitment to quality improvement within the facility. The facility administrators also benefitted from improved IS patient outcomes, reduced rates of 30-day readmissions, thus allowing the hospital to qualify for CMS incentives. Given that the IS 30-day readmission rates are used as quality measures by the CMS, an observed reduction positively reflected on the type of care provided at the facility.

A positive outcome of the project provided evidence on the effectiveness of the staff educational program focused on discharge and transitional care for IS patients. The evidence contributed to available nursing practices, supporting quality improvement in healthcare facilities (see Poston, 2018). Nurses have been urged to embrace evidence-based practices as they pursue their quest to improve healthcare outcomes (ACCN, 2019). Because the staff educational program was found to be effective, a need for regular training programs for the nurses was confirmed in addition to identifying and improving areas in care delivery where they lack current knowledge.

Similar educational programs can contribute to nursing staff working with patients, requiring care bundles for improved health outcomes such as sepsis. Similar programs can be adopted, where a care bundle can be designed and training conducted for the nursing staff to understand and implement the recommended evidence-based practices, thus resulting in early identification of sepsis and improving the overall health outcomes. Other scenarios where nurse educational programs can be adopted include the prevention 30-day readmission rates among patients with the conditions that are monitored by the CMS, such as myocardial infarction, chronic pulmonary disorders, and pneumonia, among others (CMS, 2019). These conditions require

appropriate monitoring and care during the transitional period and before discharge to prevent chances of readmission, thus reducing the financial expenditure.

The potential implications for positive social change involve equipping nurses with evidence-based knowledge and skills to adequately care for IS patients before discharge to prevent readmissions. The hospital should benefit from the reduced rates by gaining relief from previous financial penalties imposed on the facility by CMS for having high rates of 30-day readmissions. If the 30-day readmission rates are reduced compared to the other facilities within the region, the facility will receive financial incentives from CMS. Reduced rates of readmissions are also an indication of the quality of care offered at the hospital, thus attracting more patients.

Summary

Unplanned patient readmission rates are costly for healthcare facilities and negatively impact the rankings of the hospital based on care quality (Hughes & Witham, 2018). High 30-day readmission rates in IS patients are among the most prevalent problems faced by healthcare facilities in the United States. Patients with IS are at a high risk of mortality and long-term disability, which increases significantly with every hospitalization (Poston, 2018). With the population of IS patients expected to increase, it is imperative that the problem of 30-day readmission rates among hospital clients be addressed. The purpose of the DNP project was to develop and implement a nurse educational program on postacute stroke transitional care to reduce 30-day readmission rates among IS patients. In the inpatient rehabilitation facility where the project was implemented, it was established that the nurses lack adequate knowledge on early identification of poststroke disorders symptoms, leading to

frequent unplanned readmissions. The facility has, in the recent past, experienced increased 30-day readmission rates in patients with IS.

The project involved educating all the nursing staff working at the IS unit on the use of a postacute stroke transitional care plan. The care plan focused on patient-engaging care that involves early identification of poststroke disorders associated with possible readmissions. The postimplementation outcome to be evaluated in the project is the improvement in nurses' knowledge and expertise in providing poststroke transitional care for patients to reduce the rates of 30-day readmissions. The data were obtained from questionnaires issued and completed by the participating nurses. In this first section, I introduced the DNP project and its relevance to the facility of implementation and nursing practice. In Section 2, I present the background and contextual information on the project.

Section 2: Background and Context

Introduction

In a healthcare facility located in the northeastern region of the United States, 30-day readmission rates are a concern. The CMS often ranks the facility's performance as below average in its attempts of reducing 30-day readmission rates in IS patients. The project involved developing and implementing an educational program for the nursing staff working at the facility's stroke unit to improve their knowledge on the best evidence-based postacute stroke transitional care. I developed the educational program based on a literature review on nursing practices involving patient engagement and identification of postacute stroke risk factors and comorbidities. The developed educational program was reviewed and validated by an expert panel before implementation. The DNP project was guided by a practice focused question: Among nurses caring for IS patients (P), does an educational program focused on active engagement and caring for patients (I), compared to standard practice (C), increase nurses' knowledge of poststroke transitional care to reduce 30-day readmission rates in discharged patients (O), within 8 weeks (T)? The purpose of the DNP project was to develop and implement a nurse educational program on postacute stroke transitional care to reduce 30-day readmission rates among IS patients.

In this section, I present the background and contextual information on the project. The concepts, theories, or models used in the project are reviewed in the first subsection. The relevance of the project to nursing practice as well as the local background information on the problem and intervention are presented. The role of the DNP student and the project teams are also be reviewed in this section.

Concepts, Model, and Theories

Model

The model used in the project was the competency, outcomes, and performance assessment (COPA) model, which informed the design and implementation of the educational program. The COPA model was developed by Lenburg (1999) in the 1990s, following extensive educational work with the New York Regents College Nursing Program. The COPA is a learning model focused on the integration of interactive learning, practice-based outcomes, and competency assessment (Lenburg, 1999). The COPA model identifies the critical skills needed for practice, the most effective way to integrate those skills, and the most efficient methodology to teach these skills so that staff integrates them into practice (Chianchana & Wichian, 2016). The COPA approach also requires that educators evaluate the relevant environmental needs to identify the content and competencies to be achieved in the teaching program (Lenburg, 1999).

The COPA model is comprehensive and requires the educator and other stakeholders to address the four essential questions: (a) What are the essential competencies and outcomes for contemporary practice? (b) What are the indicators that define those competencies? (c) What are the most effective ways to learn those competencies? (d) What are the most effective ways to document that practitioners have achieved the required competencies? I responded to each of the four questions while designing the evidence-based intervention and the evaluation plan.

The COPA model has been proven as valid in its application in best-evidence nursing practice. According to Lazarte (2016), the COPA model can be used to evaluate a wide range of nursing practice core competencies. The educational

program on the IS care bundle was integrated into the COPA concepts to promote nurses' knowledge gain and its transference to practice. The COPA model has been used in other educational programs for nurses, including the training of novice nurses to gain practice experience. Lin, Wang, and Ye (2015) also used the COPA model to explore various methods of injection and intravenous infusion among animals and how they can be used to improve the core professional nursing competencies. In another study, Manojlovich, Lee, and Lauseng (2016) demonstrated the efficacy of using the COPA model to address core competencies of patient care such as safety and care quality offered by nurses and other healthcare professionals. De Stampa et al. (2014) also evaluated the impact of the COPA model on hospital admissions. They used the COPA model to provide integrated primary care with intensive case management for community-dwelling, frail elderly patients (Den Stampa et al., 2014).

Theory

Lewin (1951) theorized change in three steps: unfreeze, change, refreeze. Lewin theorized the unfreeze-change-refreeze change model as requiring participants to discard their previous knowledge and learn the new one (as cited in Cummings, 2016). The unfreeze-change-refreeze model is focused on identifying the influencing forces to change, hence knowing which ones to strengthen or weaken for new behaviors to be adopted (Ellis & Abbot, 2018). Both driving and restraining forces are responsible for any equilibrium to take effect, and Lewin's theory of change states that when the former is strong and/or the latter weak, then change is guaranteed to occur (Lewin, 1951).

The first step of change, unfreezing, involves individuals rejecting their old behavior and overcoming the resistance and conformity (Cummings, 2016). The

driving and restraining forces for the change are identified at this stage, and the former can be strengthened in preparation for change (Lewin, 1951). In this staff education project, the unfreezing stage involved educating nurses working at the target facility about the current status regarding the preventable readmission rates and the potential benefits of introducing the proposed change in improving the desired patient outcomes. Informing nurses about the high rates of 30-day readmissions helped in increasing the driving force for accepting the proposed change.

The second step, moving or change, involves the process of altering individuals' feelings, thoughts, and behaviors (Lewin, 1951). Change can be facilitated by challenging the status quo and providing a fresh perspective or finding new information to influence the preferred change (Ellis & Abbot, 2018). In the current project, the second step of the change theory involved conducting staff education on the IS care bundle. Educating the nurses on the IS care bundle provided them with a fresh perspective on the type of care to offer to their patients, thus promoting its use and the attainment of the desired patient outcomes.

The final step is the refreezing and involves ensuring the sustainability of the adopted new habit. Lewin (1951) theorized that the refreezing stage is fundamental in ensuring that the change introduced was sustained as the new equilibrium. The final stage in this staff education project involved informing the nurses regarding the evaluation outcome and the facility's reaffirmation that the care bundle was adopted as the new standard of care practice. I provided recommendations for sustaining the IS care bundle in the facility to the nursing manager.

Lewin's change theory has been validated in its application in care practice modifications. Gupta, Boland, and Aron (2017) supported the change theory in their

study findings that clinical practice constantly requires unlearning and learning. Ellis and Abbot (2018) also supported the application of the change model as essential in healthcare because change is inevitable in the practice. Ellis and Abbot (2018) specifically supported the application of the model in implementing change in a kidney care unit. Similarly, Bender (2016) supported the application of the model in nursing practice in introducing and implementing a clinical nurse leader role. Therefore, the change theory can be effectively used to implement practice change in this project.

Concepts

- *Client* is used in this project to represent a patient receiving care at the inpatient rehabilitation unit. The term *resident* may also be used to refer to the patients receiving care at the unit.
- *Caregiver* is used in this project to refer to any healthcare provider providing care to the patients/residents at the rehabilitation unit or at home after discharge. Caregiver may also be used to refer to the patient's family or any other person caring for them at home after discharge.
- The term *care bundle* is used to refer to the type of care nurses were educated on to offer to IS patients. The care bundle will involve active engagement of patients in their care and communication with their caregivers and family on their care needs after discharge.
- *Active engagement* in patient care is used to refer to the type of care where the patient is involved, such as asking about how they feel and talking to them about their symptoms. Active engagement is a type of care advocated in the care

bundle, and it was expected to help providers to identify and address stroke risk factors at an early stage before adverse events occur.

- *30-day readmissions* in this project refer to the unplanned cases where patients have to be sent back to the hospital for acute care, 30 days after discharge at the rehabilitation unit. Unplanned readmission cases may be due to sudden illness requiring in acute care or stroke reoccurrence within 30 days of admission in the rehabilitation unit. All occurrences where residents have to be sent back to the hospital either for acute care or for scheduled check-up are recorded. All readmissions requiring acute-care within 30-days of prior hospitalization was referred as 30-day readmission rates.

Relevance to Nursing Practice

A hospital's ability to reduce adverse effects likely to cause unplanned admissions after initial diagnosis is used as the quality indicator of its providers (Kim et al., 2015). Hospitals unable to reduce its 30-day readmissions pay financial penalties to the CMS in addition to scoring poor quality rankings (Kim et al., 2015). Stroke, a leading cause of mortality, is one of the health conditions associated with a high prevalence of unplanned 30-day readmissions (Lichtman, Leifheit-Limson, & Goldstein, 2015). A recent study found that up to 12.4% of IS patients are rehospitalized within 30-days of initial discharge in the United States (Vahidy et al., 2017).

The goal of primary care providers is to provide quality care to their patients (Hudali et al., 2017). Primary care providers are focused on addressing the issues that reduce the quality of care they aspire to provide to their patients (Hudali et al., 2017). With stroke certified as a significant public health problem, the focus on reducing

adverse effects that cause unplanned 30-day readmissions in IS patients has shifted to primary healthcare providers (Lichtman et al., 2015). Through evidence-based practices, research has established that the most prevalent causes of 30-day readmission of IS patients include infection, falls, electrolyte abnormalities, cardiovascular events, and recurrent stroke (Mittal, Rabinstein, Mandrekar, Brown, & Flemming, 2017). This staff education focused on preventable and controllable causes, such as electrolyte imbalance, infections, and cardiovascular events. Electrolyte imbalance can be prevented with attentive caregivers, and infections can be controlled if detected early; similarly, the risk factors for recurrent stroke and cardiovascular events can be identified in some cases, and measures put in place to reduce likelihoods of unplanned readmissions (Mittal et al., 2017). In addition, 30-day readmission rates can be prevented with adequate discharge planning, effective communication, and efficient follow-up of the patients' condition (Andrews, Li, & Freburger, 2015). With the causes of 30-day readmissions identified, the focus of improving the quality of care is now on the prevention of these adverse events before occurrence.

The identification of risk factors associated with infections or cardiovascular events is important and ensures that the symptoms are addressed before they occur (Poston 2018). Nurses and other primary care providers striving to improve the quality of care offered to their clients can utilize the findings of evidence-based research to understand the role they have to play. For example, improving communication and discharge planning has been found to promote positive health outcomes of discharged patients, which is likely to reduce 30-day readmissions (see Andrews et al., 2015). Providing patient-engaging care also allows nurses to identify

the symptoms of infections before they occur and address them accordingly, reducing the likelihood of 30-day readmission rates (Poston, 2018). Actively engaging IS patients will also help in the prevention of falls and management of electrolyte abnormalities and cardiovascular events before they advance to adverse events, also reducing the likelihood of unplanned 30-day readmission (Mittal et al., 2017).

Nurse's knowledge of the appropriate care to offer is an important indicator of patient outcomes (Wu et al., 2018). According to Poston (2018), the first step to improving health outcomes for stroke survivors is the knowledge gain among nurses on the appropriate level of care they need to offer. Educational interventions for nurses have been found effective in improving their knowledge regarding the type of care they have to offer (Jones et al., 2018). Educational programs for nurses have also been associated with their improved adoption of evidence-based practices (Melender Mattila, & Häggman-Laitila, 2016). Nurse targeted education interventions on evidence-based practices have also shown promising results in regards to direct improvement of patient outcomes (Jones et al., 2018; Wu et al., 2018).

Local Background and Context

Hospitalizations related to stroke are expensive for both the hospitals and the CMS, whereby, it is estimated to cost between \$18,963 and \$21,454 per patient (Poston, 2018). Unplanned readmissions have been known to result in more adverse health outcomes than the initial hospitalization (Hughes & Witham, 2018). The cost of treatment as a result of readmission is expected to be more expensive compared to the initial hospitalization. Patient outcomes also decrease considerably, lowering their quality of life (Poston, 2018). The hospitals also face financial consequences as the CMS declines to reimburse for preventable readmissions (Hughes & Witham, 2018).

Unplanned 30-day readmissions due to IS are considered to be preventable.

Therefore, financial penalties are inflicted on hospitals with relatively higher than average rates (CMS, 2019). The HRRP launched in the Affordable Care Act insists on the penalization of hospitals with high rates of 30-day readmission rates as an attempt to reduce public spending related to rehospitalizations and improve the quality of care patients receive.

At the target facility, there is a need to conduct staff education on patient engagement and early identification of the risk factor of acute poststroke disorders to minimize the 30-day readmission rates among IS patients. The hospital's scores for 30-day readmission rates related to stroke were higher than the national average. According to the Agency for Healthcare Research and Quality [AHRQ] (2019), providing ongoing patient-engaging care for IS clients would ensure that they understand their diagnoses, follow-up needs, and the person to contact in the occurrence of the problem after being discharged. Patient-engaging care would reduce the occurrence of adverse events requiring unplanned hospitalizations within 30 days of discharge. Therefore, the objective of the DNP project was to improve the knowledge of nurses regarding the transitional care requirements of postacute stroke patients. The project involved developing and implementing a nurse educational program on postacute stroke transitional care for nurses to reduce 30-day readmission rates among IS patients. Nurses were expected to provide patient-engaging transitional care for their patients following the implementation of the educational program.

The target facility was a rehabilitation unit within a larger healthcare system. The unit serves stroke and cancer patients, among others. The unit has a poststroke

rehabilitation department, which is where the project was implemented. Readmissions at the facility are classified as either planned or unplanned. The focus of the project was on unplanned 30-day readmission rates. In the local context, readmissions refer to the events where patients have to leave the rehabilitation unit for acute care services at a hospital or emergency care department.

Some of the terms used in the project included client, transitional care, and patient engagement. The term client was used to refer to the patient seeking healthcare services at the rehabilitation center. *Transitional care* referred to coordination and continuity of care in patients as they are moved from the hospital postacute stroke ward to the rehabilitation center or to home settings. *Patient engagement* was used to refer to the process of including patients in their own care plan and decision-making.

Role of the DNP Student

As a DNP nursing student, my role in the facility was to serve as a team leader for the project. I work as a patient care coordinator at the facility, which allows me to have firsthand knowledge of the systems and the type of care provided. However, I have no personal relationships with any of the nurses and patients at the facility. I was directly involved in the data collection process but had help from a staff member from the facility in administering questionnaires to the nurses and collecting them once completed.

My role in the project was to develop the educational program under guidance from an expert panel and to direct its implementation. I developed the educational intervention based on evidence-based literature regarding transitional care for IS patients to prevent adverse events leading to readmissions (Mittal et al., 2017). I also developed a questionnaire (Appendix C) using the educational materials in the

program that were also reviewed by the experts for its validity of evaluating the intervention (Appendix E). I submitted the developed educational program to the facility for implementation and the questionnaires for data collection. My roles were to develop the educational program utilizing an expert panel from the facility for review and validation, provide guidance on its presentation and collection of de-identified data using questionnaires, and analyze the collected data to determine its effectiveness on reducing 30-day readmissions.

My motivation to conduct this project is the low rankings the facility has continually received from CMS regarding its inability to reduce 30-day readmissions. As a nurse practitioner, I observe and understand the hard work other nurses put in caring for patients. Low rankings and frequent unplanned patient readmissions tend to demoralize nurses who often feel they are not doing enough. I hope I provided the nurses here with additional evidence-based knowledge on transitional care for stroke survivors. I do not believe that I had any biases that could affect the project outcome.

Summary

Unplanned 30-day readmissions in IS patients are a significant public health problem (Kim et al., 2015). However, research has established that the adverse events associated with readmissions in patients with IS can be prevented (Mittal et al., 2017). The project focused on educating nurses on offering active patient engagement care, allowing for the symptoms of such adverse events to be identified and addressed in advance. The COPA model, which is focused on the integration of interactive learning, practice-based outcomes, and competency assessment, was utilized in the design, implementation, and evaluation of the project outcomes (Lenburg, 1999). Lewin's theory guided the practice change among the nurses to adopt the care bundle

for the IS patients. The healthcare facility where the project was implemented has frequently featured in below-average rankings regarding 30-day readmission reduction and quality of care. The motivation for the project was the high prevalence of 30-day readmissions in IS patients at the rehabilitation facility. My role was to develop the educational program and data collection questionnaire, and present them for review and implementation. In the next section, the methods used in implementing and evaluating the project will be presented.

Section 3: Collection and Analysis of Evidence

Introduction

Frequent patient readmission after initial diagnosis and treatment is a common problem in the United States (Hughes & Witham, 2018). Unplanned 30-day readmission rates in patients diagnosed with IS is an indicator of the quality of care provided in a healthcare facility (Vahidy et al., 2017). The CMS monitors the readmission rates of IS, among other fatal health conditions, penalizing and offering financial incentives to the hospitals with relatively high and low rates, respectively (CMS, 2019). Many of the poststroke disorders responsible for 30-day readmission rates are preventable when identified and addressed early enough. In this doctoral project, I focussed on educating nurses on how to identify and address poststroke disorders and implement pre-discharge patient-engaging care. The purpose of the DNP project was to develop and implement a nurse educational program on postacute stroke transitional care to reduce 30-day readmission rates among IS patients. My objective was to improve the knowledge of the nursing staff caring for IS patients to reduce 30-day readmission rates. The project implementation was guided by the COPA model from design to evaluation.

In this section, I present the methodology used to design, implement, and evaluate the educational intervention. An in-depth discussion on the practice-focused question, sources of evidence, implementation, and the evaluation stages are presented. The steps for analyzing and synthesizing the evidence collected are also discussed.

Practice-Focused Question

The specific problem addressed was the high rates of 30-day readmission in IS patients. The facility where the project was implemented was found to have poor transitional care before and during IS patients' discharge to either go home or continue rehabilitative care. Communication between nurses and caregivers, patients, and their families was found to be inadequate. The gap in practice addressed by the project was lack of adequate knowledge related to postacute stroke transitional care, including identification of the risk factors of poststroke disorders leading to 30-day readmissions. The high rate of 30-day readmissions among these patient populations is the problem to be addressed by the project. The DNP student sought to determine whether among nurses caring for IS patients, the implementation of an educational program focused on active engagement and caring for patients, compared to standard practice, increased nurses' knowledge of post-stroke transitional care to reduce 30-day readmission rates in discharged patients within 8 weeks. The purpose of the DNP project was to develop and implement a nurse educational program for nurses to improve the quality of transitional care provided and reduce 30-day readmission rates among IS patients. The postacute stroke care was patient involving, including routinely discussing patient symptoms and feelings regarding the care approach taken compared to the current practice where the patients are not engaged regarding their condition and care.

Based on the practice-focused question, nurses were educated to follow new protocols in caring for IS patients during rehabilitative care and the transition to recovery from acute stroke. The content of the educational program was derived from empirical research on nurse-targeted interventions for improving poststroke

transitional care health outcomes. The care plan involved an active engagement in patient care, including identifying and addressing the risk factors for poststroke conditions that could lead to 30-day readmissions. Thirty-day readmissions were used to refer to unplanned rehospitalizations in patients diagnosed with IS due to stroke-related conditions within 30 days after initial discharge. The educational program referred to the intervention that involved teaching nurses on how to care for IS patients.

Sources of Evidence

This research was designed to assess the effectiveness of educating nurses about postacute stroke transitional care and early identification of risk factors in reducing the incidences of 30-day readmissions. The research was completed by assessing the impact of implementing an educational program on the care providers' level of knowledge and care practices. I used a quantitative methodology involving the use of inferential statistics to explain why things happen in a particular manner (see Creswell & Creswell, 2017). A representative sample was assessed, and the findings generalized to the overall population (see Esperón, 2017). There were two types of evidence for this project. The first type of evidence comprised of scores of the reviewers when rating the intervention and the pre/posteducation questionnaire issued to the nursing staff. The reviews were conducted in the form of questionnaires, scoring how the educational plan addresses the healthcare facility needs in terms of improving poststroke transitional care to reduce 30-day readmission rates. The experts also reviewed how well the nurses' pre/posteducation questionnaire examines their knowledge and expertise level of providing quality transitional care to patients.

The second type of evidence comprised the nurses' scores on the questionnaires administered before and after the implementation of the educational program to assess for their level of knowledge (see Appendix C). The nurses' responses to the questions were collected twice, before and after the education program. A comparison of the nurse scores determined if the education intervention was effective. The pre- and post-implementation datasets were compared for significant differences. Lichtman et al. (2015) established that 11.9% of IS readmissions among Medicare patients were as a result of preventable causes. A 20% increment in the nurses' knowledge of transitional care in the data collected 8 weeks after the educational intervention was anticipated in this project. Comparing the pre- and post-implementation data was useful for establishing the effectiveness of the educational program. The data collected before the implementation of the educational program were representative of the outcome of usual care practices. The data collected after implementing the education program were an indicator of the impact of the intervention on poststroke transitional care practices. Comparing the data aligned with the practice-focused question in regards to the comparison between usual care and a patient-engaged poststroke transitional care.

Nature of the Data

The first type of data collected for the project were the experts scoring of the intervention and evaluation questionnaire. Two types of questionnaires were used in this stage: the Content Expert Evaluation of the Education Curriculum and the content validity index (CVI-IV) for questionnaires (Appendices C and D; Polit, Beck, & Owen, 2007). The content experts assessed the suitability of the education program provided for the facility needs as well as whether the learning objectives were met.

The responses were in a binary form, representing the suitability and contents added in case there was a need for improvement.

The CVI-IV assessed the relevance of each of the questions in the pre/post questionnaire using a 4-point Likert scale. The scale used was 1 = *not relevant*, 2 = *somewhat relevant*, 3 = *relevant*, and 4 = *highly relevant* (Polit et al., 2007). For each item, the item content validity index (I-CVI) was computed as the number of experts giving a rating of either 3 or 4, divided by the number of experts: The proportion in agreement about relevance.

For the pre/post data collection, a questionnaire was issued to the participating nurses before and after the educational program to assess their knowledge and expertise levels in providing poststroke transitional care (Appendix C). The questionnaire also addressed how well the nurses know the type of risk factors to assess and the information to avail to patients and their at-home caregivers to prevent the likelihood of stroke recurrence and possible readmissions at the hospital.

Participants

The project sample included all the 18 nursing staff working at the inpatient stroke rehabilitation unit at the healthcare facility located in the Northeastern United States. The nursing staff comprises eight registered nurses, six licensed vocational nurses, and four nurse practitioners. All the nursing staff at the unit was targeted to attend the educational program. Having all the nurses trained was helpful, making the outcome a reflection of the impact of the training. Training all the nursing staff at the unit eased the process of evaluating the effectiveness of the educational intervention on patient outcomes for the ward.

Procedures

The first step involved a comprehensive literature synthesis on post IS care to guide the development of a proposal for research. The research proposal was presented to the institutional review board (IRB) for the evaluation of the suitability of implementing the proposed project. Upon receiving approval, I wrote a letter to the administration of the health facility where the intervention was implemented to request permission to conduct the project. Once the request was approved, the creation of awareness about the project to the staff in the facility was done through verbal communication. The developed intervention program and the pre/posttest questionnaire was presented to the nursing manager and an expert panel at the facility for review. The expert panel comprised of the nurse manager, a senior nurse practitioner, and the unit chief. The senior nurse practitioner, the IS unit chief, interacted with the nurse practitioner to convey their reviews of the educational intervention and comments for improvement.

A meeting was scheduled with the staff, where I elaborated on the rationale for the project and the proposed activities. Willing nursing staff members were evaluated for eligibility to comprise the project sample based on the criterion that they served in the wards for stroke patients and were available during the period when the project was implemented. I expected that all nurses working in the stroke unit would volunteer to participate in the implementation of the project activities. I assigned the sample unique code identifiers and then provided participants with consent forms to read and sign as confirmation for their desire to be involved in the project.

Upon signing of consent forms, the nurse staff comprising the sample was provided with a questionnaire to assess their level of knowledge of the transition care

for stroke patients and early identification of risk factors. On average, it took a participant approximately 15 minutes to complete the questionnaire. The responses were scored, and the established values recorded in a Microsoft Excel spreadsheet. Educational sessions were scheduled with the staff to teach them about postacute stroke transition care and early identification of risk factors. The nurse manager at the facility determined the suitable number of sessions to be held at specified intervals to ensure that all nurses working at the stroke unit were educated. I recommended at least one 20-minute session for each nurse. After 8 weeks of implementing the proposed intervention, the questionnaire was administered again to assess for the level of knowledge of the sample. I scored the responses and recorded the obtained values in MS Excel spreadsheets.

Ethical Considerations

The proposed project adhered to all requirements for the protection of human subjects. The research proposal was submitted to Walden's IRB for review and to uphold the safety of the participants before implementing the activities. Authorization from the target setting to use patient data from the facility's EHR database was also sought. After getting approval, the student will provide assurances for confidentiality and anonymity of patient data. Confidentiality was addressed by storing the provided data on a password-protected laptop. Anonymity was addressed by de-identifying all patient data.

Analysis and Synthesis

Two sets of data were presented for analysis; the review scores by the experts for the content validity of the questionnaire/educational content and the pre-/post-test nurse scores for the questionnaire. The data were stored and analyzed using

Microsoft Excel software. The analysis included calculation of mean scores and percentages for the number of questions with correct responses. The evaluation was conducted using both frequencies and percentage changes. The content validity of the pre/post-test questionnaire was evaluated by calculating the average scores given by the team of expert reviewers. Each expert rated the items in the questionnaire between 1 for *not relevant* and 4 for *highly relevant*. The validity of each item was obtained by calculating the percentage of experts who gave a score of 3 or 4. The items that scored a validity index of less than 0.75 were discarded.

For the participant data, identifiable information was not collected. The only information of interest was the nurses' responses to the questions listed in the questionnaire. The responses were presented using a binary response system of either yes or no.

Summary

The purpose of the proposed project was to evaluate the impact of the staff education program on their level of knowledge and 30-day readmission rates in patients with IS. The project was implemented in an actual health setting. The researcher submitted the developed proposal to the university's IRB to seek approval to proceed to implement the proposed intervention. Upon approval, a letter requesting to conduct the project was sent to the facility's administrative unit. The researcher then proceeded to develop an educational program to be presented to the nurses. In addition, a pre/post-intervention questionnaire was also developed to evaluate the impact of the educational program. Both the education program and evaluation questionnaire were reviewed for their content validity, and the need and sustainability by a team of experts in the facility. With approval, the creation of awareness about the

project was followed by the recruitment of participants. The participants signed consent forms and completed pre-intervention questionnaires to assess their level of knowledge. The intervention was implemented for eight weeks before evaluating the sample for their level of knowledge using the same questionnaire. The collected information was recorded and analyzed in an MS Excel spreadsheet. The analysis procedures included computing the frequency of the participants who provided the correct response and the percentage change after the educational program. The next section presents the results obtained from the analysis.

Section 4: Findings and Recommendations

Introduction

Up to 14% of all discharged patients in the United States are readmitted within 30 days (Hughes & Witham, 2018). Patient readmissions have negative impacts on patient outcomes and hospital costs; thus, the CMS (2019) monitors the rates per facility for the top five high-mortality conditions as an outcome measure. One of the conditions monitored by the CMS is IS, where 12% of the patients nationwide are admitted to hospitals within 30 days after discharge (Vahidy et al., 2017). The main factors associated with 30-day readmission of IS patients include postacute stroke transitional care and prevalence of comorbidities (Poston, 2018).

In the inpatient rehabilitation center, with recorded high rates of 30-day readmissions, the stroke unit has a 60% prevalence of comorbidities. A brief observation of the discharge procedures established that there were no standard procedures for transitional and continuity of care for the patients. Additionally, the nurses admitted that they lack adequate knowledge on postacute stroke and transitional care, especially on the identification of readmission risk factors and engagement of patients and caregivers to ensure continuity of care upon discharge.

The purpose of the DNP project was to develop and implement a nurse education program on postacute stroke transitional care to reduce 30-day readmission rates among IS patients. The DNP student sought to determine whether among nurses caring for IS patients, the implementation of an educational program focused on active engagement and caring for patients, compared to standard practice, increased nurses' knowledge of post-stroke transitional care to reduce 30-day readmission rates in discharged patients within 8 weeks.

The sources of evidence for evaluating the educational program included an expert evaluation form and a pre- and post-intervention assessment of the nurses' knowledge levels. A team of experts led by the nursing manager at the rehabilitation facility reviewed the educational program based on the content, ability to solve the problem, and sustainability. The reviewers provided their input regarding the validity of the program and any changes they would want to be made, which I incorporated in the final program. Before implementation, the nurses' knowledge of transitional care of patients after acute stroke was assessed using a questionnaire validated by the experts. The nurse assessment process was repeated after 8 weeks of the education program and the data were compiled for analysis. The analysis procedures included the use of descriptive measurements, such as frequency for the expert evaluation results and percentage differences in the nurses' knowledge.

Findings and Implications

The goal of the capstone project was to develop an educational program for improving nurses' knowledge of transitioning postacute stroke patients and to avoid 30-day readmissions. The developed education program was reviewed and evaluated by three experts from the rehabilitation facility where implementation was scheduled. Evaluation of the program was focused on the definition of learning outcomes for the nurses, the suitability to the facility and the target audience, and the potential for sustainability. Table 1 presents the evaluation outcomes of the educational program.

The reviewers provided binary responses regarding whether each of the validation features was met. The numeric values 1 and 0 were used to represent *met* and *not met* responses, respectively. The evaluation results of the learning outcomes indicated that they were well defined, aligned with the objectives of the facility, and

addressed in the educational program content. Based on the reviews, there were no changes made on the learning outcomes before the program was administered to the nurses.

Reviews for the suitability of the program were mixed for the three experts. Unanimous responses were made regarding the suitability of the program for the target audience, where the three experts agreed that it was appropriate for nurses working at the facility. Reviews on whether the content of the educational program addressed the current needs of the facility regarding rehabilitation of stroke patients and transitional care were unanimous and similar to those regarding if the nurses will adhere to the guidelines provided. One of the reviewers felt that the educational content, as it was, did not address all the needs in the facility. The reviewer believed that although education may help, it will not necessarily address all the needs in the facility but recommended implementation of the program. Similarly, one of the reviewers did not believe that all the nurses would adhere to the knowledge they gain from the educational program, especially in regards to assuming responsibility for managing comorbid conditions.

Table 1

Experts Evaluation of the Educational Program

| Learning outcomes | Average |
|--|---------|
| 1: Learning outcomes are defined | 1 |
| 2: Learning outcomes align with the objectives of the facility. | 1 |
| 3: The learning outcomes are addressed in the content of the education program. | 1 |
| Suitability of the program | |
| 4: The content in the educational program addresses the current needs of the facility regarding the rehabilitation of stroke patients and transitional care. | 0.67 |
| 5: The educational program is appropriate for the target audience? | 1 |
| 6: The target audience will adhere to what they learn from the educational program. | 0.67 |
| Implementation and sustainability | |
| 7: The program is ready for implementation in the facility. | 0.67 |
| 8: Regular implementation of the educational program is appropriate and helpful for the facility. | 1 |
| 9: The educational program was beneficial to the facility and staff. | 1 |

In regards to the educational program, one of the reviewers recommended that additional information on discharge protocol be included in the content before implementation. I included discharge protocol for patient/caregiver education by the nurses during discharge. The reviewer who felt that the program was not ready for implementation suggested additional information on why it is important to prevent 30-day readmissions. The recommendations were included in the final program presented to the nurses. All the reviewers agreed that the educational program would benefit the facility, patients, and the staff and that regular implementation at the facility to update the nurses' knowledge was appropriate.

The effectiveness of the educational program on improving nurses' knowledge was measured using a pre- and post-test questionnaire that I developed. The questionnaire was developed from the content of the educational program and aimed

to assess the nurses' understanding of transitional care as learned through the intervention. The content validity of the questionnaire was established using Lynn's model, where the number of experts endorsing each question was divided by the total number of experts. Based on the model, a 0.67 is the accepted CVI for three expert reviewers (Lyn, 1986). The reviewers read the questions and rated how well they could measure the concepts in the educational program.

One of the 14 items in the pretest/posttest questionnaire was only endorsed by one reviewer, receiving a CVI score of 0.33; this was not included in the nurses' assessment. The question assessed nurses' knowledge regarding the financial penalties by the Centers of Medicare and Medicaid on 30-day readmission rates for stroke. The final questionnaire comprised 13 items that assessed the nurses' knowledge of the risk factors for stroke and their care practices regarding patient discharge.

Table 2 presents the pre- and post-intervention participant scores of the questionnaire. The participants responded with either a *yes* or *no* to each of the questions. The number of participants who answered yes to each question at baseline and after the educational program is presented in the pretest and posttest columns of the table.

Table 2

Questionnaire Validity and the Frequency of Correct Answers Pre- and Post-Intervention

| Question | Pretest | Posttest | Change (%) |
|---|---------|----------|------------|
| It is my responsibility to offer the optimum care necessary to ensure a patient isn't readmitted after stroke management | 10 | 14 | 4 (40%) |
| Age is a risk factor for stroke recurrence | 13 | 14 | 1 (7.7%) |
| Previous stroke cases is a risk factor for stroke recurrence | 9 | 14 | 5 (56%) |
| Managing chronic conditions such as diabetes falls under my responsibility as a poststroke care nurse | 8 | 14 | 6 (75%) |
| Patients with a history of heart failure, atrial fibrillation need special care and poststroke | 10 | 14 | 4 (40%) |
| There is a need to put in place measures to ensure medication adherence after the patient is discharged. | 8 | 14 | 6 (76%) |
| There is a need to follow-up on patients' social support before discharge | 9 | 14 | 5 (56%) |
| I give special attention to patients with chronic respiratory issues before discharge and provide them with the risk factors to look out for. | 7 | 14 | 7 (100%) |
| I give special attention to patients with recurrent urinary tract infections before discharge and provide them with the risk factors to look out for. | 6 | 14 | 8 (133%) |
| I give special attention to patients with gastrointestinal complications before discharge and provide them with the risk factors to look out for. | 7 | 14 | 7 (100%) |
| I ensure that the patients with high cholesterol levels are managed including statin use. | 9 | 14 | 5 (56%) |
| I look out for patients' emotional needs. | 11 | 14 | 3 (36%) |
| I engage a family or friend of the patient on the patients' care needs after discharge. | 6 | 14 | 8 (133%) |
| | 8.7 | | |
| Average | (62%) | 14 | 5.3 (61%) |

Fourteen nurses (78%) out of a possible 18 participated in the evaluation of the educational program. Nine of the 14 nurses gave the correct responses to all the 13 questions at the baseline evaluation. All the nurses provided the correct answers to the posteducation survey. The change in the nurses' knowledge after the educational

program was thus obtained as 56%. The percentage increase in the number of participants who gave the correct response per question ranged from 36% to 133%.

Questions regarding the participants' practices to transition patients from hospital to home care had the highest increase in the frequency of nurses who adopted the recommended measures after the education program. For example, the number of nurses who started giving special attention to the patients with recurrent urinary tract infections as well as those who chose to engage a family member, friend, or designated caregiver rose from 6 to 14, recording a 133% increase. Respiratory and urinary tract infections are among the risk factors for 30-day readmission rates along with discharge without advice, cardiovascular disease, diabetes, obesity, and high cholesterol (Poston, 2018; Wen et al., 2018). The increase in the frequency of nurses who paid attention to these risk factors by ensuring they provide advice and management strategies indicate an increase in knowledge of the risk factors for 30-day readmission rates for stroke patients.

The change in nurses' knowledge was also noted by the increase in the frequency of nurses who acknowledged the risk factors of stroke relapse such as lack of medication adherence, unmanaged cholesterol, as well as agreeing that it was their responsibility to manage or ensure the patients' comorbid conditions are controlled. The findings support earlier studies on the use of nurse education programs to improve their patient engagement practices and care for the risk factors for poststroke disorders to prevent 30-day readmissions (Nakibuuka et al., 2016).

The staff education project had some unanticipated limitations, which included (a) lack of evaluation of the effect of the program on 30-day readmission rates, (b) sample size and nurse rotations, and (c) fewer educational sessions. When planning

the project, the focus was on 30-day readmission rates while assessing nurse's knowledge. However, the IRB approval for assessing the patients' records was denied; thus, the effect of the program on the 30-day readmission rates was not assessed. The sample size used for the evaluation was 14 nurses, which is considerably small for any statistical inferences to be made. Another problem with the sample was that the nurses at the facility are at times rotated to different units. The project could also not target all the nurses at the facility due to scheduling challenges and the fact that they were working in different units. Targeting the nurses working in the stroke unit may have improved the health outcomes in the department, but if they are transferred, these effects may not be sustained. The number of sessions was scheduled as a session per week to target as many nurses as possible. The nurse manager, however, recommended fewer sessions after predicting low attendance; thus, the entire intervention comprised of two sessions—the first session was held during a shift change to target all the nurses just leaving their shift. The second session was scheduled to target the nurses who did not attend the first one because of their shift. However, about 30% of the nurses working at the unit did not attend the sessions and may, therefore, lack adequate knowledge to provide transitional care to postacute stroke patients.

The implications of the capstone findings on IS clients are the addition of transitional care strategies such as the adoption of patient-engaging care by their primary care providers in addition to managing comorbidities and identifying poststroke syndrome risk factors, thus preventing relapses and rehospitalizations. The implication on healthcare facilities is that the frequent implementation of the educational program will improve and sustain the nurses' knowledge of postacute

stroke transitional care, thus preventing 30-day readmission rates and improving their outcomes and rankings by the CMS. For the healthcare system, the reduction of 30-day readmission rates will reduce the cost of healthcare significantly. The project is beneficial for the community because of the emphasis on patient engagement and continuity of care after discharge improves their knowledge of poststroke syndrome and rehospitalization risk factors, which, when adhered to, improves their health outcomes and reduces the financial burden associated with the condition. The potential positive social changes include the prevention of relapses and hospitalizations, thus reducing the adverse effects and the direct and indirect costs of stroke, including mortality and loss of productivity.

Recommendations

The identified gap in practice was the lack of adequate knowledge related to postacute stroke transitional care, including identification of the risk factors of poststroke disorders leading to 30-day readmissions among the nurses working at the stroke unit. The educational program has been established as effective for increasing nurses' knowledge of postacute transitional care by 61%. The DNP student recommends the frequent implementation of the educational programs for all the nurses working at the facility to ensure sustained transitional care knowledge. The DNP student discussed with the nursing manager about the inclusion of the program in the annual curricula implemented for nurses. The program can also be included in the documentation presented to nurses who have been newly hired or transferred to the unit.

Contribution of the Doctoral Project Team

The doctoral project team was comprised of me, the DNP student, and the nursing manager at the stroke unit in the rehabilitation facility where the educational program was implemented. The roles of the nurse manager included acting as a liaison between the facility and I. The nurse manager organized the expert reviews for validating the educational content and questionnaire, the nurses' assessment using the questionnaires, and conducted the presentations. My roles were to develop the educational program, the questionnaires, the consent and recruitment criteria, and conduct the evaluation. For the consent and recruitment criteria and evaluation, I met with the participating nurses, sought their signed consent, and issued the baseline questionnaires. I also issued and collected the questionnaires after the education program. Currently, there are no plans to extend the project beyond the DNP project. However, I encouraged the nurse manager to compare the readmission rates for the months following the intervention with those recorded before the educational program.

Strengths and Limitations of the Project

A main strength of the DNP project is the generalization of the procedures and outcomes to other healthcare facilities. The intervention can also be implemented in all types of healthcare facilities that cater to stroke patients. Nurse educational interventions are versatile and can be implemented at any healthcare facility with a few changes to fit the structure of the institutions (Wu et al., 2018). The nurse educational program can be adapted for different healthcare facilities with expectations of similar outcomes. The program is short and can be implemented in 20 minutes or less; thus, it is generalizable to different situations and settings. The focus

on reducing 30-days readmission rates was also a strength for the project because it addresses one of the current major public health problems. The structure of the DNP project to involve stakeholders and facility leadership helped to promote the ease of access to the participants and the evaluation criteria. The other strength of the project was the face validation of the educational program and questionnaire by experts who hold various positions in the facility and thus understand the challenges, problems, and needs of the institution.

The main limitation of the project was the duration allocated for evaluation. The short duration, 8 weeks, did not allow for the evaluation of the sustainability of the gained knowledge. The post-assessments were conducted the same day of the last session; thus, it is unknown if the learned knowledge can be sustained for more than a few hours. Recommendations are made for evaluation of the long-term efficacy of the project.

Section 5: Dissemination Plan

The findings of the project will be disseminated to the leadership and other stakeholders of the rehabilitation center using a poster. The poster will contain the project objectives, the educational program, and the findings. The inclusion of the educational in the dissemination poster will ensure a broad outreach to the healthcare professionals, further informing them of the practice change. The capstone manuscript will also be submitted to a nursing journal for publishing upon approval by the university. Publishing the project results will add to the available evidence-based practices for reducing 30-day readmission rates.

Considering the project is a nurse education program, the appropriate audiences for dissemination are nurses working with stroke patients. Dissemination to the target audience can be achieved through publishing peer-reviewed nursing journals or the use of a poster on nurse stations. The use of group discussions to disseminate the project findings was explored. Holding interactive small group discussions with other nurses on the field can enable the exchange of ideas/ opinions and may be more effective in inducing changes in care practice behavior (Ousley et al., 2010).

Analysis of Self

The journey of developing and conducting this DNP project challenged my existing professional and personal skills while providing me opportunities to develop and explore new abilities I did not know I was capable of. As a practitioner, my roles have always been centered on caring for my patients and ensuring they have the best outcomes possible. As a result of conducting this project, my focus has widened to not just my specific patients, but to the hospital, communities, and the entire healthcare

system. I can evaluate the more profound implications of a patient's health problem and explore how it affects the hospital, the community, and the healthcare system.

As a scholar, I can synthesize evidence to determine the best patient-centered approach to address health concerns. By adhering to the AACN (2006) DNP essentials, my role as a scholar enables me to develop, implement, and evaluate practice changes for quality improvement to provide valid and unbiased findings. Being a scholar, I have learned to consider all types of evidence and analyze its strength, applicability, and sustainability in solving patient problems.

The ability to analyze, synthesize, implement, and evaluate evidence to address patient needs cannot be achieved without taking on a leadership role. As a project manager, I have had to hone my clinical and communication skills while leading a team of nurses towards change. As a leader, I have gained the confidence to present my plans for change, approach management with ideas for quality improvement, and persuade other healthcare professionals of the need and importance of practice change.

As a trained registered nurse who wants to improve the care outcomes for my patients, I embraced the role of a scholar increased my responsibilities and desire for improving the quality of my patients, their community, and my healthcare facility. Under the guidance of the DNP competencies, I can identify areas where change was needed and decided to pursue the issue of 30-day readmission rates, thus taking on a leadership role in establishing that change. With the findings indicating an improvement in nurses' knowledge and practices for patient-engaging transitional care, I would like to establish if the goal of reducing 30-day readmission was achieved. In the future, I will focus on improving patient and hospital outcomes at the

rehabilitation facility through practice changes. I will continue my roles as a practitioner-scholar and nurse leader by identifying the problem areas and evidence for synthesizing practice guidelines and leading the practice changes.

With the completion of the project, the change in nurses' and knowledge was promising. Although the impact on 30-day readmission rates was not evaluated, it is expected that there will be improved the facility outcomes. I experienced a few challenges in the development and implementation of the project. First, there is a lot of evidence on approaches for reducing 30-day readmission rates. Synthesizing and choosing the practice guidelines to include in the educational program was challenging. To solve the problem, the suitability of every guideline presented in the literature was evaluated, thus selecting those that addressed the needs of the setting. Another challenge experienced was time for nurses to attend the educational sessions. Although every nurse I spoke to accepted that there was a need for change, very few attended the educational sessions, and time was stated as a factor. The observation posed a challenge on whether nurses may have adequate time to engage their patients during their routine care practices and discharge procedures. There is a need for further exploration of how time affects the type of care provided at the facility, a role I will take as a transformative nurse leader. I also developed insights regarding the lack of low levels of consistency among nurses. Although the regular implementation of the educational program was recommended, there is a need to further understand how consistency affects nursing practice in terms of patient care.

Summary

The rates of 30-day readmissions in IS patients are a concern for many healthcare facilities in the country. The reasons for 30-day readmissions may vary for

different hospitals, but poor health outcomes are a universal risk factor. Among the risk factors for readmission include poststroke syndrome, comorbid conditions that may cause relapse, lack of adherence to medication, and lack of medical advice after discharge. The DNP project was implemented in a rehabilitation facility with high rates of 30-day readmissions, comorbid conditions, and lack of adequate transitional care knowledge among the nurses. An educational program covering the identification of risk factors, patient engagement, and transitional care was developed and implemented for nurses at the rehabilitation facility. Nurses' knowledge of postacute stroke transitional care improved by 60% after the educational program. There is potential for reduction of 30-day readmission rates if nurses have adequate transitional care knowledge.

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Appendix A: Educational Program

Learning Objectives

1. Nurses should be able to list the major risk factors for 30-day readmissions in poststroke patients
2. Nurses should be able to list the causes of unplanned 30-day hospital readmissions postacute stroke.
3. Nurses should be able to list strategies for reducing 30-day readmission rates in ischemic stroke patients
4. Nurses should be able to describe sample approaches for addressing the risk factors for poststroke disorders

Educational Content

Up to 12.1% of ischemic stroke patients are readmitted within 30 days of discharge, were 89.6% of the readmission cases are unplanned (Poston, 2018; Vahidy et al., 2017). Rates for 30-day readmissions are used as quality measures, and the hospital readmission reduction program (HRRP) established in the Affordable Care Act provides financial incentives to healthcare facilities with lowered readmission rates (Centers for Medicare and Medicaid [CMS], 2019). The CMS also fines hospitals with high 30-day readmission rates relative to other healthcare facilities under the HRRP (CMS, 2019).

Risk Factors for Readmissions

- High comorbidity score (Fehnel et al., 2015; Nouh, McCormick, Modak, Fortunato, & Staff, 2017; Okere, Renier, & Frye, 2016).
- Age 75 years and above (Fehnel et al., 2015; Nouh et al., 2017; Okere et al., 2016).

- Living in a nursing facility prior to stroke (Okere et al., 2017)
- Some comorbidities, such as previous stroke, diabetes, renal failure, heart failure, hypertension, and atrial fibrillation (Condon, Lycan, Duncan, & Bushnell, 2016; Fehnel et al., 2015; Nouh et al., 2017).
- Admission to a non-neurology service (Okere et al., 2016).
- Untreated high cholesterol (Fehnel et al., 2015).
- Low social engagement in the rehabilitation facility (Okere et al., 2017).
- Poor social support (Condon et al., 2016).

Identified Cause of Readmissions

- Respiratory diseases such as pneumonia and influenza (Fehnel et al., 2015).
- Urinary tract or respiratory infections (Nouh et al., 2017).
- Recurrent stroke or transient ischemic attack (Nouh et al., 2017).
- Gastrointestinal complications (Okere et al., 2017)
- Injuries such as those originating from falls (Okere et al., 2017).

Preventing 30-day Readmissions

Involving patients in decisions on care and treatment and having health services needs met in areas such as falls, fatigue, emotion, memory, speaking, and reading (Kristensen, Tistad, Koch, & Ytterberg, 2016). Frequent contact and communication with patients will help identify and address needs such as poor medication adherence, and risk of infections (Poston, 2018). Identify and stratify patients depending on the risks they have for 30-day readmissions, then address each risk separately (Condor et al., 2016; Kristensen et al., 2016; Poston, 2018).

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Care Plan for Post-Stroke Patients

Mariana Tsucuneli

Education Presentation

11-05-2019

30-day Readmission in Ischemic Stroke Patients

- ❖ Up to 12.1% of patients treated for ischemic stroke (IS) are readmitted within 30 days; 89.6% of the readmissions are unplanned (Poston, 2018; Vahidy et al., 2017).
- ❖ 30-day readmission rates in stroke patients is considered a quality measure by the centers for Medicare and Medicaid (CMS). Penalties apply for high rates (CMS, 2019).

Risk Factors for 30-day Readmission in Ischemic Stroke Patients

- ❖ **Age.** Patients older than 75 years have higher risk of **readmission** (Fehnel et al., 2015; Nouh, McCormick, Modak, Fortunato, & Staff, 2017; Okere, Renier, & Frye, 2016).
- ❖ **High comorbidity scores** (Fehnel et al., 2015; Nouh et al., 2017; Okere et al., 2016).
- ❖ **Some comorbidities such as previous stroke, diabetes, heart failure, and atrial fibrillation** (Condon, Lycan, Duncan, & Bushnell, 2016; Fehnel et al., 2015; Nouh et al., 2017).
- ❖ **Admission to a non-neurology service** (Okere et al., 2016).

Causes of 30-day Readmission in Ischemic Stroke Patients

- ❖ **Respiratory diseases such as Pneumonia and influenza** (Fehnel et al., 2015).
- ❖ **Urinary tract infections** (Nouh et al., 2017).
- ❖ **Gastro intestinal complications** (Okere et al., 2016).
- ❖ **Injuries such as those originating from falls** (Okere et al., 2016).
- ❖ **Recurrent stroke or transient ischemic attack** (Nouh et al., 2017).

Risk Factors for 30-day Readmission in Ischemic Stroke Patients Cont'd

- ❖ **Poor medication adherence** (Fehnel et al., 2015).
- ❖ **Untreated high cholesterol/Failure to take statins** (Fehnel et al., 2015).
- ❖ **Living in a facility prior to stroke** (Okere et al., 2016).
- ❖ **Low levels of social engagement** (Condon et al., 2016).
- ❖ **Poor social support** (Condon et al., 2016).

Lower Odds of 30-day Readmission in Ischemic Stroke Patients

- ❖ **Recanalization therapy** (Fehnel et al., 2015; Okere et al., 2016).
- ❖ **Statin use** (Fehnel et al., 2015).
- ❖ **High levels of social engagement in post-discharge treatment** (Condon et al., 2016).
- ❖ **Low comorbidity scores** (Fehnel et al., 2015; Nouh et al., 2017; Okere et al., 2016).

Preventing Unplanned 30-day Readmission in Ischemic Stroke Patients

- ❖ Patient involving care will help build a relationship between the patient and practitioner (Kristensen, Tistad, Koch, & Ytterberg, 2016).
 - A relationship will help identify the emotional and social needs of the patients.
- ❖ Involve patients in decisions on care and treatment (Kristensen et al., 2016; Poston, 2018).
 - ❖ This will ensure that health services needs are met in areas such as falls, fatigue, emotion, memory, speaking, and reading

Preventing Unplanned 30-day Readmission in Ischemic Stroke Patients cont'd

- ❖ Identify and stratify patients at higher risks of readmissions (Poston, 2018).
- ❖ Cater for each patient depending on their risk factor (Condor et al., 2016; Poston, 2018).
 - ❖ For example statin treatment for high lipid levels (Fehnel et al., 2015).
 - ❖ Address risk of respiratory infections (Fehnel et al., 2015; Nough et al., 2017).

Preventing Unplanned 30-day Readmission in Ischemic Stroke Patients cont'd

- ❖ **Prevent causes of 30-day readmissions if risk is apparent** (Fehnel et al., 2015; Kristensen et al., 2016; Nouh et al., 2017; Okere et al., 2016; Poston, 2018).
 - ❖ Monitor patient vitals in depending on comorbidity.
 - ❖ Check whether patients are in update with required vaccination such as influenza.
- ❖ **Address risk of respiratory infections** (Fehnel et al., 2015; Nouh et al., 2017; Okere et al., 2016).
 - ❖ By prevention and frequent patient monitoring to ensure early detection and treatment.

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Appendix C: Pre/Post-Education Questionnaire

**Poststroke Transitional Care Evaluation
Pre/Post –Test Form**

Employee Initials: _____

Date: _____

Trainer Name: _____

Please answer the questions below regarding accurate blood pressure measurement. After an educational session, you will take the post-test.

Indicate a number to represent your response, depending on your level of agreement with the given statement. (1: strongly disagree, 2: disagree 3: Neutral, 4: Agree, 5: Strongly Agree)

1. We can be penalized by Medicare when we have patients being readmitted 30 days after discharge for stroke management.
2. As a nurse, it is my responsibility to offer the optimum care necessary to ensure a patient isn't readmitted after stroke management
3. Age is a risk factor for stroke recurrence
4. Previous stroke cases is a risk factor for stroke recurrence
5. Managing chronic conditions such as diabetes falls under my responsibility as a poststroke care nurse
6. Patients with a history of heart failure, atrial fibrillation need special care and poststroke
7. There is a need to put in place measures to ensure medication adherence after the patient is discharged.
8. There is a need to follow-up on patients' social support before discharge
Practices
9. I give special attention to patients with chronic respiratory issues before discharge and provide them with the risk factors to look out for.
10. I give special attention to patients with recurrent urinary tract infections before discharge and provide them with the risk factors to look out for.
11. I give special attention to patients with gastro-intestinal complications before discharge and provide them with the risk factors to look out for.
12. I ensure that the patients with high cholesterol levels are managed including statin use.
13. I look out for patients' emotional needs.

14. I engage a family or friend of the patient on the patients' care needs after discharge.

Appendix D: Content Expert Evaluation of the Curriculum Plan

Title of Project:

Student:

Date:

Name of Reviewer:

Products for review: Education program, Suitability of Educational program, Implementation of Educational Content.

Instructions Please review each objective related to the curriculum plan, content and matrix. The answer will be a “yes” or “no” with comments if there is a problem understanding the content or if the content does not speak to the objective.

Learning Outcomes

1: Learning outcomes are defined

Met Not Met

Comments:

2: Learning outcomes align with the objectives of the facility.

Met Not Met

Comments:

3: The learning outcomes are addressed in the consent of the education program.

Met Not Met

Comments:

Suitability of the Educational Plan

4: The content in the educational program addresses the current needs of the facility regarding rehabilitation of stroke patients and transitional care.

Met Not Met

Comments:

5: The educational program is appropriate for the target audience?

Met Not Met

Comments:

6: The target audience will ill adhere to what they learn from the educational program?

Met Not Met

Comments:

Implementation of the Educational Plan

7: The program is ready for implementation in the facility.

Met Not Met

Comments:

8: Regular implementation of the educational program is appropriate and helpful for the facility.

Met Not Met

Comments:

9: The educational program will be beneficial to the facility and staff.

Met Not Met

Comments:

Appendix E: Pretest/Posttest Calculating the Content Validity Index

To calculate an I-CVI, experts are asked to rate the relevance of each item, usually on a 4-point scale. The scale most often used is: 1=not relevant, 2=somewhat relevant, 3=relevant, 4=highly relevant (Davis, 2012). Then, for each item, the I-CVI is computed as the number of experts giving a rating of either 3 or 4, divided by the number of experts: the proportion in agreement about relevance.

To compute item CVIs (I-CVIs) for all items and place in the I-CVI column. Sum the I-CVIs and divide by the number of items to obtain the scale CVI (S-CVI).

For a five-item scale:

| <u>Item</u> | <u>Expert 1</u> | <u>Expert 2</u> | <u>Expert 3</u> | <u>I-CVI</u> |
|-------------|-----------------|-----------------|-----------------|--------------|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |

Each cell contains a rating (1, 2, 3, or 4) of the item defining that row by the expert defining that column.