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Implementation of a Fall Prevention Program for the Elderly in a Long-Term Care Facility

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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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Abstract

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MS, Mercy College, 2012

BS, SUNY Downstate University, 2010

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

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Abstract

One out of 4 older people fall each year. By the year 2030, it is estimated that 49 million older adults will fall and that 12 million will incur injuries as a result. A rise in the trend in falls among older adults represents a growing burden; the cost for falls billed to Medicare in the year 2015 was an aggregate of over $31 billion. The purpose of this quality improvement evaluation project was to assess the effectiveness of a fall preventative pilot program to reduce the number of falls among the residents of a rehabilitation and long-term care facility in New York City. Lewin's theory of change was used as a guide for this project. The *Operation No More Falls* initiative included a 10-day interdisciplinary staff educational intervention (N = 57) and a 30-day multifactorial fall prevention program with for residents (N = 68). Sources of evidence were obtained from pre and post secondary data on learner gain and fall rates and were analyzed using descriptive statistics. The findings of the project showed learner gain in pretest score (M = 65.9; SD = 16.13) to posttest score (M = 88.04; SD = 13.26). The fall rate over a 14-month period prior to the initiative indicated a mean rate of falls between 14 and 16 per month with the exception of two months where the rate was lower than 10 falls per month.. In the 30 days following the initiative, there were only 10 falls, which suggests that a consistent fall prevention program may decrease the number of falls. Adhering to an identification protocol and comprehensive fall risk assessment as part of an effective multifactorial fall prevention program can reduce the financial burden of falls on these facilities and society at large.

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Dedication

This proposal is dedicated to my father, Mr. Patrick Eseigbe Igharosa, who taught me that education learnt is never lost and to continue to further my education to the highest level. Also to my mother, Mrs. Cecilia Igharosa, for teaching me that every task, regardless of the length of time, can be accomplished with one step at a time.

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Section 1: Nature of the Project

Introduction

Falls in the elderly population are a national public issue and a major concern because they can lead to issues affecting the elderly holistically. Falls have been identified as a major cause of death and disability in the elderly. For people aged 65 years and above, falling is the most prevalent type of accident and a serious cause of injury-related hospitalization (Gale et al., 2016). In long-term care facilities, falls can lead to serious injuries (e.g., hip fracture) which have an incidence rate of 4% annually, despite the care from qualified healthcare professionals.

According to the New York State Department of Health (NYSDOH, 2017), each day, three older New Yorkers die because of a fall, 143 older New Yorkers are hospitalized, and 304 older New Yorkers are seen in emergency departments. Presently, in the local facility used for this project, there is a minimum of 10 to 12 falls and at most 21 falls monthly that have been documented in the past year, with hospitalization of three to four residents resulting from the fall.

Preventing and reducing the incidence rate of falls in long-term care facilities would reduce the cost of hospitalization and contribute to the longevity of patients. This quality improvement doctoral project promoted positive social change in a local facility that was evident in reduction of falls and improvement of the safety and quality of life of residents by introducing healthcare staff to an evidence-based, cost-effective, realistic, and functional fall prevention program.

Problem Statement

Fall prevention in a rehabilitation center or long-term facility is generally a collaborative effort, but nursing care plays the most important role. Protecting the elderly against falls is imperative because it not only improves quality of life, but also affects reimbursement from Medicare/Medicaid (Fehlberg et al., 2017). Per the Centers for Medicare and Medicaid Services (CMS), there are no longer reimbursements for the costs of additional care required due to facility-acquired injuries, and this has caused major improvements in fall prevention practice (Fehlberg et al., 2017). Educating all staff will promote professional knowledge and skills and assist in the growth of caring attitudes.

Presently, there is a policy for fall prevention in the facility that addresses the protocol for when a resident falls, which includes creating documentation, carrying out an investigation, conducting root-cause analysis, informing the doctor and family member (if applicable), reassessing the Briggs Fall Risk (Lee et al., 2013), and implementing ways to prevent further falls while updating the care plan. A "quick" means of identifying residents at risk of fall based on the nurse manager's assessment during admission is lacking. There is a fall notice on the door to the resident's room, but there is no indication on the residents that would allow staff members to identify residents at risk for fall outside of the residents' rooms.

According to the Agency for Healthcare Research and Quality (AHRQ, 2015), a patient's fall is defined as an "unplanned descent to the floor with or without injury" (¶ 1). In the National Patient Safety Goals (NPSGs), which were created in 2002 by the Joint Commission, one of the goals is focused on the reduction of harm to patients

resulting from falls (The Joint Commission, 2018). Clinicians are expected to assess patients for risk of falls in order to create and implement interventions to reduce falls based on the patients' assessed risk. There was a need for staff to be able to identify residents at risk of falling at all times. In this nursing home, which is a facility accredited by the Joint Commission, educating the staff on fall prevention and evaluation of all the interventions implemented was necessary to further the safety of all residents. This project addressed this need by using a fall prevention program to reduce the number of falls among residents within a long-term care facility.

Purpose Statement

The purpose of this Doctor of Nursing Practice (DNP) quality improvement project was to assess the effectiveness of a fall prevention program (Operation No More Falls) in a rehabilitation and long-term care facility within a 30-day period by identifying residents at risk of falling and reducing the number of falls. The intent was to quickly identify residents at risk for falls, improve the nursing and rehabilitation staff's knowledge for preventing falls, and performing a concrete fall risk assessment.

The guiding practice-focused question for this doctoral project was the following: Will the implementation of a quality improvement fall prevention program reduce the rate of falling for residents in a rehabilitation and long-term care facility within a 30-day period?

Preventative medicine is growing rapidly in the United States. Preventing falls through early identification was the underlying aim in this project. If staff can identify those residents who should not be walking down the hallway alone, staff members should

be able to prevent injury by redirecting those residents in a safe direction, either by walking with them or by directing them to use their assistive devices.

The objective of this project was to do the following:

- reduce the number of falls in the skilled nursing and long-term care facility with the implementation of Operation No More Falls with multifactorial interventions
- reinforce healthcare staff members' knowledge and skills regarding fall prevention and implementation of this quality improvement project

Nature of the Doctoral Project

The development of science with technology and evidence-based practices pertaining to fall reduction risk factors has been on the rise within healthcare (Quigley, 2015). Evidence-based, peer-reviewed articles have addressed issues regarding fall precautions, including risk factors and protocols. Guidelines on best care practice recommend that health care personnel identify patients who are at higher risk of falling and implement individualized interventions to prevent or reduce the occurrence of falls (Wilbert, 2013).

Sources of evidence for this project were collected from multiple databases using the Google search engine and the Walden University Library. ProQuest, MEDLINE, Cochrane Database of Systematic Reviews, Cumulative Index of Nursing and Allied Health Literature (CINAHL), PubMed journal database, and EBSCO Host were used collecting data for this project. Keywords that were used in searching for information included but were not limited to *fall prevention*, *elderly falls*, *skilled nursing and long-*

term facility, and *evidence-based practice*. All articles used were published within the last 5 years.

A mixed approach was used in this project as a potential means to reduce the number of falls among the residents. Data on the number of falls in the local facility in the last 12 months were reviewed. Then staff education commenced on fall risk assessment and management. Staff members' ability to identify patients at risk for falling and the facility's fall policy and procedure were assessed with a pretest. A new color-coded system was implemented to allow staff to quickly identify residents who were at high risk for fall versus low risk for fall and how to care for them. Several staff education sessions were also conducted to educate staff who worked in the facility on how this new system worked. All departmental heads (physical, occupational, speech therapy, housekeeping, activities, dietary, and maintenance) attended the first meeting to understand the implementation of the Operation No More Falls prevention program. Attendance at this training session was made mandatory so that staff in every department would understand their various roles and the importance of team interrelation. Pre- and posttests were administered for assessment of staff members' knowledge of the training program content, and documentation was collected on the number of falls that occurred after the training sessions.

CMS requires that fall risk assessment be done for all newly admitted nursing-home residents and for all residents after any type of fall, and various studies done in the past have shown that fall precaution programs can prevent falls in the elderly. A long-

term care facility must meet minimum requirements for fall prevention efforts in order to optimize reimbursement.

At the end of this quality improvement project, the number of falls in this long-term facility was considerably reduced, as the staff members were able to identify the residents who were at higher risk for falling and implemented the new protocol to ensure their safety using the Operation No More Falls program. The goals for this project were in alignment with the practice-focused question and the interventions, and the project demonstrated the educational needs of the staff in reference to their knowledge of fall prevention.

Significance

The stakeholders in this project were the healthcare staff of the local nursing facility, including the administrator; director of nursing; interdisciplinary rehabilitation team—nursing; and physical, occupational, and speech therapists. Other stakeholders included the current members of the facility's quality improvement team, who assisted in staff motivation and staff involvement in the project. These were the day-to-day staff who worked with the residents and who would be using the program; hence, it was very important that they understand the significance of the project.

Creating and implementing evidence-based fall prevention programs in long-term care facilities to reduce falls and fall-related injuries and increase the safety of the residents is very important. Staff at these long-term facilities has a huge role to play in implementing such programs; thus, it is essential that they gain knowledge and understand the program content. Implementing a fall prevention program effectively can

increase quality of life, create peace of mind among the elderly by decreasing anxiety, and ensure that a facility receives higher reimbursement from CMS.

In addition to supporting the provision of optimal care to residents, the successful implementation of a fall prevention program can result in greater staff empowerment and an increase in teamwork. Moreover, safe, evidence-based practice for preventing falls may be transferred to other rehabilitation and nursing homes in the area. As these methods are adopted to reduce falls, scores on nursing home compare will be positively affected locally.

This project has potential implications for positive social change, in that it may provide rehabilitation centers and long-term facilities with a tool to support safe practice, thereby improving quality of life for seniors, helping seniors return to their former state of independence with the goal of returning home and/or returning to loved ones in the community, and reducing the allocation of funds to treat preventable injuries. Rehospitalization rates and hospitalization costs due to falls may be reduced. Lastly, models for educating staff on fall prevention may be affected positively.

Summary

Falls are the leading cause of mortality and morbidity among elderly people. One of three adults will fall each year; 24% of people who fall will suffer serious injuries, and 6% will experience fractures (Lee et al., 2013). The cost of falls in the United States is expected to increase to $54.9 billion by 2020 (Lee et al., 2013). Falls can cause injury, pain, hospitalization, decreased functional level, decreased quality of life, and a fear of falling again (Lee et al., 2013).

Creating and implementing an evidence-based fall prevention program in long-term care facilities in order to reduce falls and fall-related injuries and increase the safety of the residents is very important. Staff at long-term facilities has a huge role to play in implementing such a program; hence, it is essential that they gain knowledge and understand the content of the program. Implementing such a program effectively can increase quality of life, create peace of mind among the elderly by decreasing anxiety, and ensure that facilities receive higher reimbursement.

In the next section, I explain Lewin's theory of change as the guiding theory applied in this project, describe the project's relevance to nursing practice, address the local background and context, and outline my role in this project as a DNP student.

Section 2: Background and Context

Introduction

The need to reduce the number of falls among elderly residents was an issue that a local rehabilitation and long-term care facility in New York was facing. The purpose of this DNP quality improvement project was to assess the effectiveness of a fall prevention program in a rehabilitation and long-term facility within a 30-day period by identifying residents at risk for falling and reducing the number of falls. The practice-focused question was the following: Will the implementation of a quality improvement fall prevention program reduce the rate of falling for residents in a rehabilitation and long-term care facility within a 30-day period?

In this section of the project, I address the theoretical framework that I used to guide this project as it relates to nursing practice; the project's relevance to nursing practice, including the current state of nursing practice; strategies that have been used before to address the current problem; and my role in the project as a DNP student.

Literature Review

Falls

CMS (2017) defines a *fall* as an unpremeditated coming down to the floor with or without injury. Falling is the second most common adverse event when seniors are hospitalized after infection (Baek et al., 2014). Falls are the most prevalent events that are reported in older adults who are hospitalized, with the elderly in rehabilitation settings having the highest incidence rate (Costa-Dias & Ferreira, 2014). Falling is preventable, but unfortunately, fall incidence increases in seniors from 60 years of age onward, with

potentially deadly consequences including fractures, declines in mobility, increased levels of anxiety, and loss of confidence (Godlock, 2016).

In addition to life-threatening conditions and long-term consequences related to falls, fall among the elderly lead to increased costs in the health care system (Bechdel, 2014). Hence, Medicare incorporated falls among preventable conditions that affect reimbursement in both acute and long-term care settings. Changes in mental status, pain, surgery, impaired mobility, and medications are among the issues that can contribute to falls in the elderly in various settings (Huey-Ming, 2015). Patients who fall in acute care settings tend to stay longer on an inpatient basis and are vulnerable to frequent readmissions and poor outcomes (Slade et al., 2017). Per Huey-Ming (2015), these patients stay in the hospital more than 6 days longer than patients without falls, at an additional cost of $13,000.

In 2014, fall-related injuries were estimated at $31 billion in annual Medicare costs (Slade et al., 2017). Rates of falling and fall-related injuries increase with age and are higher in patients with chronic diseases such as dementia and Parkinson's disease (Slade et al., 2017). In the coming decade, the number of adults older than 65 years is expected to rise, increasing from 11 million in 2010 to 18 million in 2030, with the expectation that 10,000 adults will become 65 years daily until the year 2029 (Bragg & Hansen, 2015). In this population, about 70% of individuals will require long-term care service. The average rate of falls among older adults is 2.6 falls per person per year, and roughly 1,800 long-term care residents die from falls yearly (Betty & Osterberg, 2014). In nursing homes, 50% to 70% of residents fall annually; this rate is 2 times higher than

the rate of falls among the elderly in the community (Betty & Osterberg, 2014). Given these statistics, it is imperative that an effective fall prevention program be created in long-term care facilities that involve all interdisciplinary team members in order to reduce the rate of falls while providing a safe environment for the elderly within the facility.

Fall Risk Assessment and Tools

Fall assessment is required as part of the admission assessment in all Medicare-paid facilities (Phelan et al., 2015). Regardless of the healthcare setting, a facility can receive reimbursement in incentive payments for fall assessments being performed for all patients. In light of the statistics on falling, an appropriate fall assessment is appropriate to determine every resident's fall risk. Fall risk assessment tools are scales that allocate mathematical or numerical figures to calculated risk factors when assessing a resident's probability of falling (Costa-Dias et al., 2014). The Joint Commission (2015) has recommended the use of a standardized and validated fall risk assessment tool. Hence, facility administrators considered embedding the tool into the electronic medical record.

A Cochrane Systematic Review done in 2012 indicated that clinical assessment performed by a clinician in addition to individualized treatment based on identified risk assessment and follow-up reduced the rate of falls by 24% (Phelan et al., 2015). A comprehensive and individualized assessment of all residents for fall risk is instrumental in preventing falls in the elderly in long-term care facilities. The Briggs Fall Risk Assessment tool (FRA; Briggs Healthcare, 2009) is a reliable tool that was used by the facility for this project.

As I read peer-reviewed articles for this project, I noted that the most commonly used fall assessment tools in clinical trials were the Hendrich Fall Risk Model, Morse Fall Scale (MFS), and the St. Thomas Risk Assessment Tool (Costa-Dias et al., 2014). Of these, the MFS was known to have higher validity and reliability scores (Baek et al., 2014). The Briggs FRA is used as part of an evidence-based fall prevention program that has reduced hospitalization and fall rates (Briggs Healthcare, 2009).

A descriptive cross-sectional study was conducted in 2011 by Chapman et al. to determine the most reliable, sensitive, and specific tool for assessing the fall risk factors of hospitalized patients. Four fall risk scales were compared, and the result indicated that an inadequate risk assessment education was given to the nurses and the data were inconsistent and unreliable due to misinterpretation of the scoring criteria, as well as scoring and documentation errors (Chapman et al., 2011).

The initial and most important stage of an effective fall intervention program is a comprehensive risk assessment (Costa-Dias et al., 2014). Therefore, it is imperative to use a standardized fall risk assessment tool in all healthcare settings and uniform operations in a given organization. Uniformity among staff in using a standard approach for the assessment will provide positive outcomes and increased quality in patient care and safety.

The Briggs Fall Risk Assessment Scale

The FRA from Briggs Healthcare is mainly used in long-term care settings. The FRA is a comprehensive assessment tool that is used to determine the risk of falls (Park et al., 2019). In 2018, a prospective observational study was done in Turkey to compare

psychometric properties of three fall risk assessment tools (FRA, MFS, and Hendrich Fall Risk Model II [HFRM-II]) in nursing home residents. The results of the study indicated that the FRA had the most satisfactory validity and was most appropriate for residents in long-term settings (Baran & Gunes, 2018).

The FRA is completed by conducting an interview, as well as by reviewing the resident's record. With a very short completion time, the FRA assesses a patient's fall risk through assessment of eight clinical parameters:

- mental status (score of 0-4)
- history of fall in the past 3 months (score of 0-4)
- ambulation/elimination status (score of 0-4)
- vision status (score of 0-4)
- gait/balance/ambulation (score of 0-1)
- systolic blood pressure/orthostatic changes (score of 0-4)
- medications (score of 0 to 4)
- predisposing disease (score of 0 to 4)

A resident with a total score above 10 is considered to be at "high" risk of falling (Baran & Gunes, 2018).

Devrim et al. (2007, as cited in Tekin et al., 2013) completed a methodological study in a hospital in Turkey to determine the validity and reliability of the Turkish version of the FRA scale. Validity and reliability were calculated with Kappa analysis interobservers. Validity for the RA showed 0.89 for sensitivity and 0.69 for specificity (Tekin et al., 2013). The FRA scale was chosen for this quality improvement project

because it is a tool whose validity has been tested in various countries by different researchers, and it has been established to have a high level of reliability and validity in determining the fall risk factors of residents in long-term settings. Hence, the creation of standardized care plans with individualized interventions is warranted.

Resident Interventions

Using standardized care plans in a long-term care facility is very important, but optimal service will be achieved if the care plans are based on individual residents' needs. Implementing best-quality fall prevention programs can enhance the quality of life, general health, and well-being of residents (Jackson, 2016). Evidence-based practice contributes to producing the best outcomes for every resident, which are very important to all care providers. In doing such, standard of care will prevent residents' falls and support good outcomes.

Frequent toileting, hourly rounds, staff education, bed and chair alarms, status-post-fall assessments, consideration of medication side effects, and effective fall risk assessment are all elements of effective plans of action to prevent falls among the elderly (Godlock, 2016). Care plans are created based on individualized interventions and changed as needed as residents' status changes. For instance, specific interventions are put in place when a resident is assessed using the FRA tool, but if, after some time, the resident falls, the plan of care will have to be updated to fit the resident's needs. The law requires that residents and family members are involved and able to participate in residents' care plans. Residents' participation and involvement in their care has been

shown to improve residents' safety and health outcomes, in addition to improving overall health and reducing costs (Huey-Ming, 2015).

A descriptive feasibility study conducted by Potter et al. (2012, as cited in Kim et al., 2019) found that educating family members who lived together with patients at home via educational DVD on how to prevent hip fracture led to lower fall risk for the patients. Previous studies have also shown that nursing home staff members' knowledge of falls is not enough to prevent accidental falls and that reeducating staff is necessary (Kim & Eun, 2014). Fall prevention programs are only effective if staff is educated. Only then will adherence to the program occur. Ensuring that everyone involved in resident care (including the resident and family members) is aware and knowledgeable of interventions in place is beneficial in preventing falls among residents of long-term care facilities. Fall risk education was an integral part of this pilot study.

Concepts, Models, and Theories

Lewin's Theory of Change

The most appropriate theory for this project was the change theory that German-American psychologist Kurt Lewin developed in the 1950s. Cummings et al. (2016) recognized Lewin as the founding father of change management and the intellectual father of contemporary theories, noting Lewin's belief that change occurs in three steps.

The first stage of Lewin's change theory (Bridges, 2019) is the *unfreeze* stage. Lewin explained that a system needs to unfreeze in order for successful organizational change to occur. This change requires diversion from the present position or equilibrium to a new direction (Hussain et al., 2016). Hussain et al. (2016) further explained that the

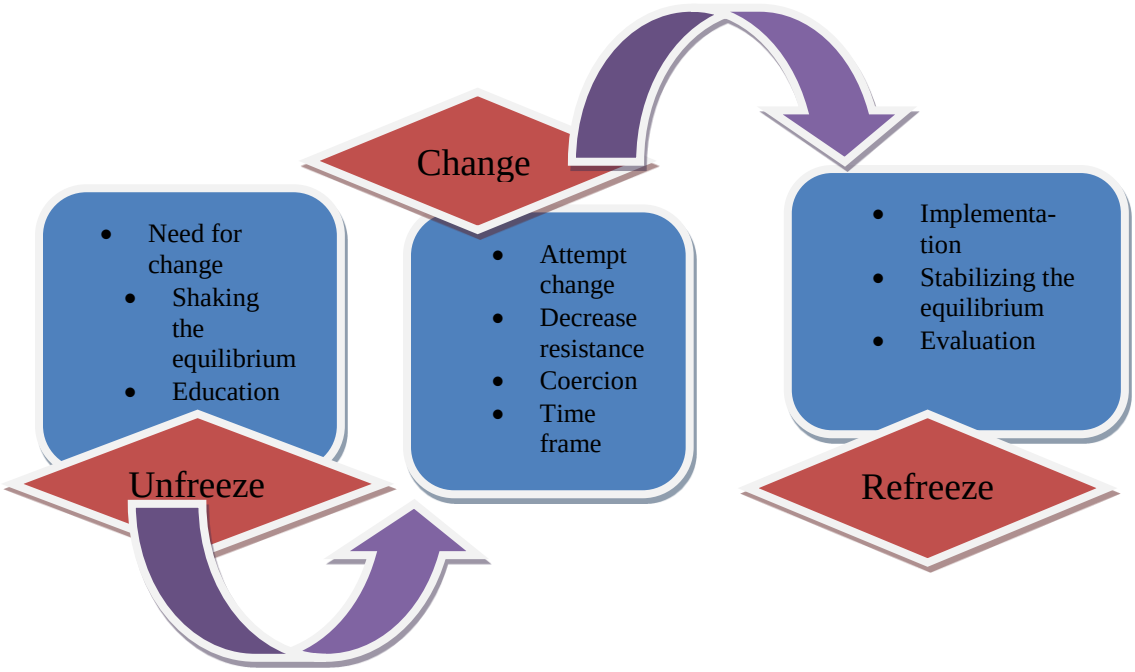
unfreeze process requires a change in staff behavior wherein staff discard their old behavior or management increases the pressure on staff for change and new behaviors are learned. It is necessary for the staff to want the change in order to reduce resistance and increase collaborative effort toward effective change.

During the second stage, *change,* the staff has moved out of equilibrium and is expected to support management in the advancement of the change (Hussain et al., 2018). Every staff member involved in the implementation plan must identify the course of action, implementation strategies, motivation toward the change, and restrictive forces affecting the change. The role of management at this stage is to encourage the staff and provide various types of support, along with coercion and motivation. This, in turn, will reduce the level of resistance within the organization through teamwork. Staff resistance to change is customary and can be attributed to psychological, environmental, and societal factors (Schriner et al., 2010). Eventually, with time and gradually addressing of restrictive forces, change will occur, but a timeline for achieving targets and objectives must be established (Schriner et al., 2010).

The next stage of Lewin's theory of change (Hussain et al., 2018) commences with a shift in behavior of the organization from the second level. *Refreeze* is the third and final stage of Lewin's theory, and it consists of the implementation, incorporation, and evaluation of the organizational change, which is a continual process. At this stage, stabilization of equilibrium is very important, and this is achievable through commitment and motivation of all staff toward a successful change.

Figure 1

Lewin's Three Stages of Change



Application of Lewin's Theory to the DNP Project

In implementing a fall prevention improvement project, a change in the behavior and mindset of all stakeholders, including upper management and the members of the interdisciplinary team, was expected. In the unfreezing stage, the suggested goals, timeline, expected barriers, and educational sessions to be conducted for this project were discussed with management. Communicating with, educating, and interacting with staff and management about the current fall data, the importance of reducing falls within the facility, and implementation were part of the unfreezing stage. During these sessions, concerns and various barriers were discussed and addressed accordingly by the facility management and the DNP student.

In the change stage, education on falls and the proposed fall prevention pilot study was done with all of the interdisciplinary staff, and all staff members were made aware of their responsibilities in implementing the fall program and identify with the course of action. The facility management and I provided all support needed by staff, including coercion and motivation. Staff monitoring was also very important in this stage to ensure that there was a change from previous habits related to how fall risk assessment would be done and how the implementation would be carried out.

The last stage, which was the refreezing stage, required continuous support from me and the management in ensuring that everyone was carried along, including non-direct-care staff such as housekeeping, dietary, and maintenance staff. Re-education was done as needed so that all staff would be comfortable and fluent in implementing the quality improvement project. In this stage, the pilot program was evaluated for success, and stabilization was encouraged.

Definition of Terms

Change: To make or to become different.

Rehabilitation: The act of trying to reinstitute previous privileges and level of independence after a period of time.

Theory: A set of view or principles that is intended to explain ideas that are based on general principles or a way of life independent of the thing to be explained.

Equilibrium: A state in which conflicting forces or impacts are balanced.

Management: Individuals in charge of controlling others and the facility.

Relevance to Nursing Practice

Nurses use formal and informal reasoning strategies in their day to day practice in evaluating patient's condition, developing nursing process and interventions, and in communicating information. Nurses cultivate these strategies to select appropriate option of care that will influence patient's outcome positively. Organizational culture plays a crucial role for there to be any form of change within an organization, because of the common norm that each staff might exhibit or are used to having (White & Dudley-Brown, 2012). Nurses tend to stick with routine if it produces results.

Changes in the behavior and the mindset of the interdisciplinary team in implementing a fall prevention quality improvement plan that will involve change in the organization culture is inevitable and this might prove to be difficult as the zeal to change might not be there. As a project manager, it is imperative that a suitable model or theory is chosen to provide a framework for implementing, conducting and evaluating change (Mitchell, 2013).

Falls are continually being considered an issue to the residents and also to the facility if not addressed properly. Falls are prevalent and affect about 30% of adults over 65 years old and this risk increases with age (Stubbs, Brefka & Denkinger, 2015). The cost of fall related health care services is also on the rise with the estimate of about $30 billion in 2010, hence creation of national and international guidelines in preventing falls (Stubbs et al, 2015). Medicare spending on services from skilled nursing facilities (SNF) has increased from $13.6 billion in 2001 to $28.7 billion in 2012, with about 1.7 million

recipients in nearly 15, 000 SNF annually (Hye-Young, Trivedi, Grabowski, & Mor, 2016).

There are numerous consequences for falls among the elderly including decrease mobility and decline in activities of Daily Livings (ADLs) and over 18 million will be placed in long term facility (Barker, 2014). The need for nursing personnel to have fall prevention as a priority in all health care settings is very important; hence the need to provide evidence based practice in all long term facilities, not just for monetary reasons but for the wellbeing of the residents. This project will help in the gap in nursing practice in relations to practice change by contributing to patient and staff education, safe patient environment and the implementation of nursing protocols (Kiyoshi-Teo, Carter, & Rose, 2017).

Local Background and Context

The long-term facility for this project is a senior living facility and healthcare center located in the easternmost section in New York City. The facility is a sub-acute rehabilitation center and a long-term facility that specializes in Tracheotomy/Respiratory Care, Infusion Therapy, respite care, specialized wound care program/ Wound Vac, Individualized Physical, Occupational and speech therapy. The facility has a little over 100 beds and their belief is to provide interdisciplinary elderly care helping to maintain and enhance quality of life in addition to love and care.

Residents are transferred to the facility from acute settings with different diagnoses for either short term rehabilitation/skilled services or for long term stay. Sometimes, short term-stay residents end up staying longer and become long term

residents. Based on health insurance and certain diagnoses, each of the short-term resident's stay could be from 30 day to 100 days with the goal for them to get to their optimal dependent level prior to coming to the facility. Due to loss of independence, falling is imminent in the day to day activities of the residents.

Falls in older adults are attributed to external factors like medications and internal factors such as age, gender and cognitive impairment (Calderon, Bowles, Marshall, & Andrew, 2018). Falls will continue to be an important problem among long term care residents. According to the Centers for Disease Control and Prevention (CDC, 2017), fall death rates in the US among older adults have increased by 30% in the last ten years, and the climb will continue with an anticipated estimate of seven fall deaths every hour by 2030. Administrators in rehabilitation and long-term facilities strive tirelessly to provide quality services with focus on knowledge and skills improvement, with the intent to produce a high standard of quality of care for all the residents, hence reducing fall is very important financially and in increasing the quality of life in the elderly.

Presently in the facility to be used for this pilot study, there have been more than 15 falls occurring monthly. Various methods including increased documentations, meetings and in service training are been devised daily by the administrator and the nursing director to reduce fall incidence. Among the number of accidental falls in this facility, about 3 of the falls results in hospitalization, hence affecting reimbursement and loss of beds which indicates loss of financial resources for the facility due to empty beds.

Role of the DNP Student

The role of the DNP student included but not limited to writing a proposal in creating a quality improvement program on fall prevention in a long-term facility. I was responsible for collecting and analyzing literatures including peer reviewed articles on fall prevention in long term facilities. I was responsible for making positive changes with new approaches by looking at the facility current fall prevention process and determining which of the process was effective and non-effective in preventing fall. The facility's current fall prevention policy including implemented interventions was reviewed. Evidence based practice (EBP) is important in the nursing profession. Professional standard for nursing practice is available on best researched evidence (ANA, 2004a). Organizational culture and management support of change are critical factors in the adoption of good practice (Moore & Watters, 2013). I created a fall prevention program for the facility.

I organized an in-service in the conference room with the staff where background information on the proposed project was provided, opportunities for asking questions about the project and staff interaction occurred to encourage staff motivation. The implementation of the proposed intervention was carried out by me. The proposed intervention occurred in a 30-day period. I also analyzed the data and reevaluated the effectiveness of the new strategies.

Lastly, changes on the current facility's fall prevention program were implemented in the facility. The motivation behind this doctorate project was personal from losing a loved one from complication of a preventable fall. I hoped that the pilot

program assisted in educating the staff with knowledge on how to prevent future falls by identifying residents at risk. . These roles performed align with the DNP Essential II, III, IV, VI, VII and VIII.

Summary

The prevalence of falls among the elderly is not just a local issue but a national issue that warrants changes in health care facilities and implementation of evidence-based program, hence the development of this pilot project in this facility. This section describes the Kurt Lewin theory of change that was utilized for this doctoral project and the roles of the parties that were involved. This quality improvement project featured an educational session for staff of a rehabilitation and long-term facility, the information on fall prevention through early identification of residents that are at risk for fall. The team members in this project included all management staff and all other staff that have direct and indirect contact with the residents. The project provided positive outcome for the resident with the change in behavior that the staff built. The next section will address how this project will be done with more emphasis on collection of evidence, analyzing evidence and detailed literature review.

Section 3: Collection and Analysis of Evidence

Introduction

CMS (2015) has identified falls in the elderly as a health issue that is preventable. A person who works in a long-term care facility has the duty to identify residents who are at fall risk. As such, educating staff on fall prevention was the focus of this project to support the safety of all residents. Falls have been known to have tremendous impact (both emotional and physical) on residents and their loved ones while affecting the organization and the government financially (Godlock, 2016). The purpose of this DNP quality improvement project was to assess the effectiveness of a fall prevention program (Operation No More Falls) in a rehabilitation and long-term care facility within a 30-day period by identifying residents at risk for falls and reducing the number of falls.

In this section, I focus on the research method for this project while addressing the practice-focused question, gap in practice, sources of evidence (i.e., archival and operational data), analysis and synthesis of evidence, and any ethical issues in the project.

Practice-Focused Question

As people live longer, falls will increase unless a commitment is made to providing fall prevention programs that are effective (CDC, 2015). The organizational setting for this project was a 102-bed skilled/rehabilitation and long-term care facility located in the northeastern region of the United States. The facility had an average of 13-20 falls monthly and did not have a system for identifying residents who were at risk for falling. The current state of knowledge and skills of the staff at this facility needed to be

changed for there to be a reduction in the number of falls and improvement in the quality of care. Overall, the facility reduced the numbers of ER visits and rehospitalizations and the death rate at the conclusion of the project's implementation.

In anticipation that the number of falls among the elderly will increase, it was highly important to create a fall prevention program. The practice-focused question for this DNP project was the following: Will the implementation of a fall prevention program using the "Operation No More Falls" color-coded bracelet pilot system reduce the number of falls over a 30-day period within the local long-term care facility?

Definitions

Fall: An occurrence in which a resident inadvertently comes to rest on a lower level or on the ground that is not due to an event that the person would have been venerable to (Phelan et al., 2015).

Briggs Fall Risk Assessment (FRA) tool: An assessment tool that is used in the identification of the level of fall risk for residents using eight parameters of functional status (Jackson, 2016).

Care plan: An important communication medium utilized by an interdisciplinary team to provide harmonized services (Dellefield & Corazzini, 2015).

Fall prevention program: A program that is undertaken to prevent falls. It usually starts with an assessment of the resident's fall risk, followed by the introduction and recurring evaluation of the resident's specific plan, which is based on the risks recognized (Murray, 2016).

Long-term care: A type of healthcare service structured to meet medical and nonmedical needs of residents with chronic and/or debilitating disease who may or may not require assistance with activities of daily living (ADLs; U.S. Department of Health and Human Services, 2014).

Fall risk assessment: A fall risk assessment is an assessment that contains a fall history, physical examination, comprehensive medication analysis, and functional and environmental evaluation (Phelan et al., 2015).

Sources of Evidence

The purpose of this DNP project was to educate staff on the implementation of a multifactorial fall prevention program with the sole intent of reducing the number of falls in a long-term care facility. Review of the literature on fall prevention indicated that fall prevention is an ongoing issue in long-term care facilities for interdisciplinary care teams (Willy & Osterberg, 2014). A comprehensive fall risk assessment is a very important step in the admission assessment that must be done on the first day of admission. Once such an assessment has been performed, various evidence-based strategies should be applied to extenuate any identified risk (Willy & Osterberg, 2014). There are more studies on limiting falls in acute settings than in long-term care facilities. A larger number of falls affect the elderly in long-term care facilities (Majkusova & Jarosova, 2014). Falls among the elderly can decrease quality of life for the elderly and reduce reimbursement from CMS to facilities. To address this issue, different health care facilities have implemented different fall prevention programs.

I conducted an extensive analysis of current peer-reviewed articles and other scholarly articles on various fall prevention programs to address the practice-focused question and to identify appropriate interventions and evaluation tools for this project. The information obtained was used to determine whether the appropriate fall assessment tool was used to determine the level of residents' fall risk, and whether an individualized evidence-based intervention was used to prevent further falls for residents who had repeated falls or to reduce the number of falls in the facility in general.

Presently, most long-term facilities have standardized interventions for fall prevention that include floor mats, bed alarms, and frequent visual monitoring. Nonetheless, 78% of falls affect residents who have been previously indicated to be at fall risk and prone to accident (Baek et al., 2014). It is essential that every resident care plan concerning falls be created to address the resident's individual needs and be developed as soon as possible upon admission to the facility.

Sources of evidence to address the practice-focused question came from literature review as well as from data from the long-term facility. This quality improvement project was used to identify residents at risk for falls, their risk level, and the establishment of individualized plans of care for residents. With the Briggs FRA conducted at admission, quarterly, and after any fall/near-fall, the staff was able to assess the residents' level of fall risk. Based on the results obtained, individualized fall care plans were created, and the number of falls was reduced. Educating all staff on this fall prevention program assisted staff in comprehending the importance of preventing falls and ensured a standardized way of assessing residents' risk of falling in the facility.

The online databases and search engines used to find outcomes and research related to the practice problem included the following:

- CINAHL Plus with Full Text
- CINAHL/EBSCO
- Cochrane Database of Systematic Reviews
- ProQuest Nursing & Allied Health Science
- MEDLINE
- OVID Nursing Journals
- PubMed journal database
- Google and Bing search engines
- Walden University Library

Key search terms and combinations of search terms included but were not limited to *falls, long-term care, elderly, fall prevention and intervention, long-term and rehabilitation facilities, nursing homes falls, fall risk assessment, Briggs fall risk assessment, Kurt Lewin theory of change,* and *fall-related interventions.*

To ensure a comprehensive review of literature related to this topic and to stay current and relevant, I selected journal articles from the 5 years preceding my review (i.e., 2015 to date). I focused the literature search on articles written in the English language, peer-reviewed articles, and articles with full text. Additionally, I filtered results by publication type and type of study, such as systemic review, clinical trial, or prospective study.

Archival and Operational Data

In this long-term care facility, every fall is documented. When a resident falls, an incident report is generated by the nursing supervisor on duty, who, together with the other staff on duty, completes a report. The incident report includes information such as date, time, location, witness (if applicable), presence of injury, a brief description of events precipitating the fall, interventions immediately done after the fall, equipment involved, and notification of doctor and emergency contacts. The fall is also documented on the computerized progress notes, the nurses' 24-hour report, and the supervisor's communication book. These data are relevant, as they are used to generate a post fall intervention and an immediate update of the care plan prior to the director of nursing (DON) signing off on it after a root cause analysis (RCA) is completed. Additionally, a new fall risk assessment (the Briggs FRA) is completed, and the comprehensive care plan (CCP) and the certified nursing assistant accountability record (CNAAR) are updated.

After the DON has completed her investigation, the nursing administrative personnel document the fall in the facility's corporate database. The information entered into the database includes date, type of fall, injury sustained, the shift during which the fall occurred, the certified nursing assistant (CNA) assigned to the resident, and the number of residents who fell. This information is recorded on a month-to-month basis, and the safety committee (which includes all departmental heads) reviews this information to determine the trend of the falls and discuss various interventions to address identified problems. Access to these data was obtained from administrative personnel through permission from the facility administrator using a written request with

a copy of the proposed study attached. Data on past falls in the facility for each month in the last year were collected (these data were used to determine the preintervention numbers).

Nursing staff, rehab staff, and all other employees in the facility, including the administrator, were involved with this project. The most important part of the project was for all staff to be able to recognize residents' fall risk level immediately through their hand band. Staff attended an informative class prior to the start of the project, in which they received information on the intent of the project and the roles of the various departments. The facility presently has a safety committee that consists of one member of each department except for the nursing department, which is represented by one CNA and one LPN each from the east side and the west side. The committee consists of 14 members, with the administrator and the director of nursing (DNS) as chairpersons. These staff, who already possessed vast knowledge of all safety issues in the building and had various degrees of expertise in rehabilitation and long-term care, were at the forefront of the project.

Revision on the use of the Briggs FRA tool was done with the nurses, with emphasis on the various questions that needed to be answered and making sure that nurses were answering the questions accurately. The questions on the Briggs tool address eight topics and sum up to a number. A resident with a total score of 10 or greater is considered at high risk for a potential fall. The eight topics that the Briggs tool addresses are the following:

- level of consciousness,

- history of falls,
- ambulation/elimination status,
- vision status,
- gait/balance,
- medications,
- systolic blood pressure, and
- predisposing disease.

The nurse managers were instructed to ensure that the fall assessment tool was administered to all residents within an hour of admission to the facility, quarterly, and after a fall. Based on the score obtained, the nurses were instructed on developing an individualized fall care plan.

The nurse managers were instructed on using the score obtained in applying the neon star wristband to residents who are at high risk for falling versus residents with repeated falls (more than 2 falls in a month). The members of the safety committee were also instructed on the quality improvement pilot (Operation No More Falls) identification system involving the colors of the wristbands before other employees were. Preimplementation data were collected before the project started, and postimplementation data were collected after 30 days. All nursing and rehabilitation staff were responsible for ensuring that all residents who were at high risk for falling, based on a list provided that was updated weekly by the nurse managers on each wing, had the appropriate identification/wristband.

Care plans were updated periodically by managers in collaboration with the rehabilitation staff and the residents/residents' families as needed, and documents were signed by residents as written agreements acknowledging the individualized care plan and adherence to the intervention created. There was a neon star on the red wristband, on the door to the room by the patient's name, and on the chart. The color code was used to ensure that all staff recognized all residents immediately who were at risk for falls, especially if they were exhibiting unsafe actions such as walking independently without a device that they were supposed to be using.

To ensure compliance with the fall implementation created, the DON and administrator reviewed the Briggs assessments and care plans created to ascertain that appropriate interventions had been planned out, and members of the safety committee ensured that the interventions were implemented properly. All staff were instructed to report unsafe actions to members of the safety committee. Additionally, copies of individualized care plans on paper with the designated color were placed in the charts of the residents.

Educational training was offered over a span of two weeks to ensure that all staff had time to attend at least one session. Memos and posters were placed by the punching station to allow all staff to sign up for the session, and the training was made mandatory. The training sessions focused on the Briggs FRA tool, data on falls in the facility, some statistics from the literature, and introduction of the project program. Different scenarios involving some of the previous fall assessments done in the facility were presented to indicate how the assessment tool is effectively used. After the training sessions, the

Operation No More Falls quality improvement project was implemented for 30 days, with adequate support and resources made available to the staff via telephone contact that was provided during the training session.

As per Walden's DNP Practice Guidelines Manual, all projects must be approved for ethics by the university's Institutional Review Board (IRB) following the preapproval process (IRB approval number: 02-05-20-0441863).This quality improvement program adhered to the DNP manual and ethical requirements prior to implementation of the project to ensure ethical protection of all involved.

Documented consent was obtained for the project to be conducted at the long-term care facility that summarized the activities that were done and the data that were collected within the facility. All data collected from the facility's database were shredded after use. No resident's personal information was used in this project, as all protected health information (PHI), such as name and date of birth, was disidentified by blanking it out completely to make it anonymous. The data collected were not taken out of the facility but kept in the DON office until the project was completed.

Analysis and Synthesis

Data on all previous falls in the facility were obtained from the facility's database, which included the date and time of falls, location, type of injuries (if any), number and types of falls, and number of residents affected. These data were collected based on the incident reports that were filled out by the nursing staff and entered by the nursing administrative personnel after being verified by the DON. This system will continue, but with the exception of the addition of the percentage of falls monthly. During and after the

implementation of the project, the data were collected and analyzed from the facility's database.

The incident reports are generated by the nursing supervisors/managers and it includes statements from all staff that worked the shift at the time of the fall, the doctors' orders and calls made out to the family members of the residents. (This document was not part of the data collection). All information is reviewed by the DON, and a Root Cause Analysis (RCA) is performed. All falls are documented on the supervisors' communication book.

The fall risk assessment (FRA) is imbedded in the admission assessment record and is done same time as all other admission process. The admission package is reviewed by the care plan team which comprises of the DON, Minimum Data Set (MDS) director, rehabilitation director and the nursing supervisor of the wing that the resident is located in, within 5 days of admission.

About 7-10 days before the pilot study commences, multiple educational sessions/forum lasting about 30 to 45 minutes were held to ensure that all staff is given the opportunity to participate. The topics were on falls managements, the present fall data, Operation No-More Fall initiatives (staff education, using the Briggs FRA scale effectively, Lewin's theory of change, and utilizing the color coded arm bands). A pre and posttest was done at this educational session to assess the staff's knowledge.

The early identification system is using a color coded system to identify residents at risk for fall. Residents that are at risk for fall based on the Briggs score were given a Neon bracelet on their arm. The Briggs tool does not allow the level of risk but just those

at risk. The Neon bracelet was an easy identification for staff to see by just looking at the resident. A Neon star was also be placed by the bed side and by the door of the residents' room.

The care plans and the assessments are in the resident's chart which is digital, with very few information on the paper chart. When meeting with the care plan team weekly, the charts of the new admissions and the residents that fell were discussed during these meetings. The DNP student printed out the completed data entered with emphasis on the number of falls before and after the implementation of the proposed project. Then a comprehensive analysis was done via documentation on whether or not the goal of decreasing the number of falls after the project implementation was achieved. A post educational session was held to inform the staff of the results and answer any questions that they had.

Summary

Fall prevention is a very important topic that needs to be addressed as much as possible as the population is increasing with the elderly. The purpose of this quality improvement project was to determine the effectiveness of the "Operation No-More Fall" project in a long term facility to review the numbers of falls among the elderly residents. With the appropriate response obtained from utilizing the Briggs fall risk assessment tools, implementation of individualized care plans and the activeness of the safety committee, the facility was able to have an early detection of the residents that are at high risk for fall. Although all residents' falls might not be preventable, but staff recognizing the warning signs of all unsafe acts by the residents might assist in increasing the quality

of care in the facility. The next section will discuss the findings and implications, recommendations, and the strengths and limitation of the proposed project.

Section 4: Findings and Recommendations

Introduction

Falls are considered the principal cause of accidental injury-related deaths and nonserious injuries in the elderly population (Phelan et al., 2016). Falls are very common among people 65 years old and over. According to the Geriatric Society, two thirds of deaths among the elderly that occur due to unintentional injuries result from falls (Schimke & Schimke, 2014). There is a gap in practice with fall prevention in long-term care facilities as indicated by the literature review and the practice observed in the pilot nursing facility.

There has been limited evidence and research regarding fall prevention among the elderly in long-term care facilities, but research has been done on this topic in acute care settings. Comprehensive fall assessment in long-term care is not universal, and in nursing homes, staff performs assessments differently. It is imperative that fall risk assessment align with implementation and that interventions be specific and individualized to prevent falls as much as possible among elderly residents. In the United States in 2015, 2.5 million elderly adults were reported to be treated in ERs for fall-related injuries that were non-life threatening, with more than 734,000 of these seniors hospitalized (Howland et al., 2018). Additionally, in 2015, more than $50 billion was spent in direct medical care for older adults. Research has shown that sometimes, when the elderly fall but do not require medical care, the experience can affect them psychologically, potentially leading to fear of future falls, and there is evidence of physical deconditioning eventually (Howland, 2018). Due to the monetary, physical, and psychological effects that falls can

have on individuals and the community at large, falls represent a major health issue that requires the immediate attention of healthcare personnel and lawmakers.

The practice-focused question for this doctoral project was the following: Will the implementation of a quality improvement fall prevention program reduce the rate of falling for residents in a rehabilitation and long-term care facility within a 30-day period? The purpose of this DNP quality improvement project was to assess the effectiveness of a fall prevention program (Operation No More Falls) in a rehabilitation and long-term care facility within a 30-day period by identifying residents at risk for falling and reducing the number of such residents.

Evidence was collected from a skilled nursing and rehabilitation facility that was used as the pilot site for the Operation No More Falls prevention program. Prior to the implementation of this pilot program, there was a monthly record of more than 20 falls in the facility, and although there was a fall assessment tool in the facility, it was not implemented correctly. The evidence was obtained from data documented in a spreadsheet, as recorded by facility staff whenever there was a fall. Data on the number of falls prior to the implementation of the pilot study were compared with new data obtained after the use of neon orange bands to identify residents who were at risk for falls. The pilot study was done using Lewin's theory of change (Wojciechowski et al., 2016).

Findings and Implications

Prior Data from Pilot Site

Deidentified fall data were collected from the pilot site for 14 months, from January 2019 to February 2020 (Table 1). These data were stored by the facility in an internet system database after all falls and incident reports were reviewed by the DNS and the administrator. These data were used in comparing the new data after the implementation of the study. The review of this past record indicated an average of 14-16 falls per month and showed that a few residents who had repeated falls were called "frequent fallers." A frequent faller was an individual who had two or more falls in a given period (Landers et al., 2016). In reviewing the given data, it was noted that there were residents who experienced two or more falls in a month as well as in subsequent months. The expectation of the facility's quality review team was fewer than 10 falls per month; however, there was an exception of 2 months where the goal was met. There were fewer than 10 falls in July and November 2019.

With these data provided on the large numbers of falls in the facility prior to the pilot study implementation, it was appropriate to conclude that multifactorial interventions and comprehensive assessment were lacking in the facility to prevent further falls. Table 1 presents deidentified fall data and the percentage per month of falls and hospitalizations.

Table 1

Fall Data From January 2019 to February 2020

Month/year	Number of falls	Hospitalizations/ER visits	% of falls per month	% of hospitalizations/ER visits
Jan 2019	14	0	6.90%	0%
Feb 2019	13	0	6.40%	0%
March 2019	13	0	6.40%	0%
April 2019	15	0	7.40%	0%
May 2019	11	0	5.40%	0%
June 2019	16	0	7.90%	0%
July 2019	8	1	4%	0.08%
Aug 2019	21	0	10.10%	0%
Sept 2019	15	0	7.40%	0%
Oct 2019	13	0	6.40%	0%
Nov 2019	7	1	3.40%	0.07%
Dec 2019	23	0	11.30%	0%
Jan 2020	14	0	6.90%	0%
Feb 2020	21	0	10.10%	0%

Educational Sessions

Multiple educational in-service sessions lasting 30 to 45 minutes were held 10 days prior to the start of the pilot study. These sessions were offered during various shifts, including the night shift, so that all staff could be accommodated and all departments could participate. Table 2 shows attendance data for these educational sessions. Fifty-seven staff participated in in-service sessions on the following topics:

- facility fall data
- facility expectations
- fall management

- Operation No More Falls initiative: Color-coded wristband and assistive device placement band, resident-specific implementation plan, fall call plan, admission, and postfall assessment and Briggs fall risk evaluation

Handouts with a detailed explanation of the pilot program and definitions of some of the terms were handed out. Demonstration of a step-by-step process for the administration of a fall risk assessment was included (with information on when fall risk assessments should be conducted: at admission, post fall, quarterly, and upon readmission). I answered questions from staff and addressed all issues with assistance from the management/administrative staff. The various departments were instructed on the different roles that they had and their importance, but the most important role for the nonclinical staff was to identify residents with neon orange colored armbands and to report any unsafe activities to the nursing staff immediately or redirect residents as needed.

Table 2

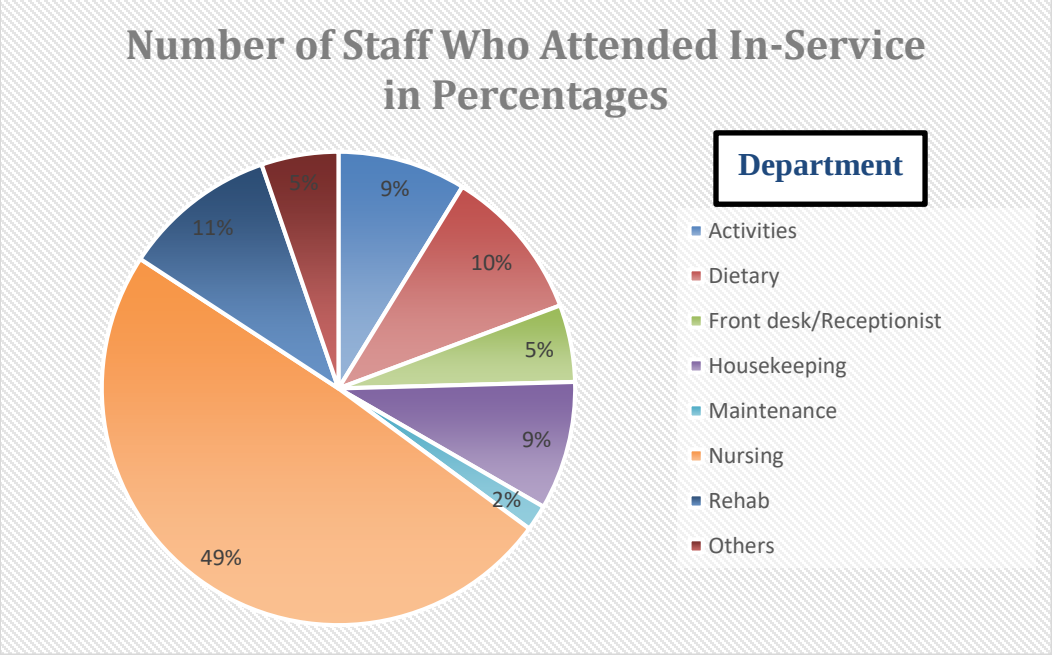
Numerical Data for Attendance per Department at the Educational Sessions

Department	**Number of staff** who a**ttended in-service**
Activities	5
Dietary	6
Front desk/receptionist	3
Housekeeping	5
Maintenance	1
Nursing	28
Rehab	6
Others	3
Total	**57**

A total of *n* = 57 staff members attended the educational sessions, and all 57 staff took the test. All departmental heads were included among the numbers of the department. The nursing department that attended the training class included licensed and nonlicensed nursing personnel, nurse managers, and the director of nursing. The three staff members grouped under "others" included the MDS coordinator, in-service director, and administrator (Figure 2).

Figure 2.

In-Service Participation by Department



Pretest and Posttest

During the educational sessions, a pretest (Appendix B) and a posttest (Appendix C) were given to every staff member. The pretest was given before the in-service started to gain an idea of what the facility staff knew about fall precautions, especially the

nonnursing staff. The posttest was given after the in-service classes had been held and all questions had been addressed by the management and I, to ensure understanding of the materials taught. The handouts from the class were left on both units in the facility for the staff to have for reference purposes and for staff who were not able to attend the classes to read. A review of the test taken was done after grading to determine the effectiveness of the teaching. Test scores were recorded on an Excel spreadsheet, and the staff was instructed to write their various departments on the test paper (Figure 3). The pretest and the posttest were recorded and the difference calculated as shown in Table 3.

The pretest and posttest contained 14 questions in total: seven questions on the pretest and seven questions on the posttest. The questions were related to fall management, fall risk assessment, and the importance of preventing falls (see Appendices B and C).

Table 3

Operation No More Falls Pretest and Posttest Scores

Employee	Prescore	Postscore	Difference	% difference
1	70	89	19	19%
2	80	90	10	10%
3	50	89	39	39%
4	74	92	18	18%
5	54	88	44	44%
6	77	94	17	17%
7	48	78	30	30%
8	80	80	0	0%
9	66	91	25	25%
10	78	85	7	7%
11	48	78	30	30%
12	76	76	0	0%

(*table continues*)

Employee	Prescore	Postscore	Difference	% difference
13	70	89	19	19%
14	36	4	48	48%
15	50	94	44	44%
16	76	94	18	18%
17	61	89	28	28%
18	61	100	39	39%
19	74	94	20	20%
20	79	100	21	21%
21	83	83	0	0%
22	57	94	47	47%
23	28	78	50	50%
24	43	76	33	33%
25	91	100	9	9%
26	67	90	23	23%
27	79	90	11	11%
28	67	94	27	27%
29	67	100	23	23%
30	54	84	30	30%
31	56	93	37	37%
32	80	93	13	13%
33	56	94	38	38%
34	78	84	6	6%
35	57	87	30	30%
36	80	93	13	13%
37	72	93	21	21%
38	60	81	21	21%
39	49	100	51	51%
40	68	88	20	20%
41	100	100	0	0%
42	89	89	0	0%
43	56	93	37	37%
44	70	88	18	18%
45	41	78	37	37%
46	79	79	0	0%
47	69	83	14	14%
48	60	87	27	27%
49	87	96	9	9%

(*table continues*)

Employee	Prescore	Postscore	Difference	% difference
50	71	93	22	22%
51	80	80	0	0%
52	51	100	49	49%
53	56	93	37	37%
54	78	93	15	15%
55	54	84	30	30%
56	93	100	7	7%
57	21	93	72	72%

In reading the pre and posttest, one will notice a great improvement in the test score. It shows that most of the staff did not know or understand the fall precaution model that the facility was operating. Six staff did not have any change in their pre and posttest scores but they scored above the average, while 51 staff showed tremendous increase in the scores. This is indicative that the educational sessions were well understood (Fig.2), and this would signify that the operation no more falls educational sessions expanded the staff's knowledge on the numbers of falls that the facility gets monthly, fall prevention, staff's responsibility in managing falls and the pilot study.

The average pre-score was 65.8772, with a standard deviation (SD) of 16.1323, while the average posttest score is 88.0351 and the SD of 13.2597. During the course of the educational sessions, there was a decrease in the number of falls in the 10 days prior to the start of the use of the arm bands. This can be attributed to the change in staff thinking and behavior towards preventing fall in the facility, and also to the staff eagerness to prevent fall in the residents.

Color-Coded Armband

A neon orange colored armband was used for this pilot study. Neon was chosen as the brightness will alert staff that does not have one to one contact with the residents to know that the residents that were at risk for risk (Appendix D). A fall risk assessment was performed on the following period:

- on admission,
- after every fall,
- quarterly, and
- annually.

If the resident's score above a total score of 10 points and above, then the resident is assessed to be at a high risk for fall and a neon orange armband is placed on the resident's arm and on any ambulatory equipment that the resident uses (cane, walker, rollator or wheelchair). The significance of placing the neon orange band on the devices was to alert staff members of the fall risk of the residents. Most times, the residents do not keep the armbands on due to inconveniences or sensitivity to their skin, or due to the mental capacity of the residents (especially residents with diagnosis of dementia). And at times, due to the weather condition, the type of clothing wore also hides the armbands. Having the band on the ambulatory device will make staff to be aware of the fall risk status of the residents. This goes to show that the operation no more falls project is versatile to fall management with all residents regardless of their mental capacity, diagnosis, skin type and the weather condition. This supports quick identification of the residents that are at high risk of fall by the staff.

Report of Findings

The pilot study, "Operation No More Falls", was executed and overseen for a period of 30 days. De-identified data on falls prior to the implementation of the pilot system was given to the DNP student from the facility's record. Also de-identified data was also given to the DNP student post implementation to record the number of falls. These data were provided per the request of the DNP student for analysis. The long term facility that was utilized for this pilot study is a licensed nursing and rehabilitation center where rehabilitation services are administered to all new admits. Admission assessment is done including falls assessment.

During the month of implementation, all the newly admitted residents were placed on the pilot program. The DNP student reassessed all the residents' charts that were admitted to the facility prior to the implementation of the study on the risk of fall, and they were added to the study. Total number of residents that were added to the study was 50, the total number of admissions was ten and the number of readmissions was eight. Hence, in the month of implementation, 18 residents were newly admitted to the facility. Readmitted residents are residents that used to be in the facility but they were either transferred to the hospital or discharged previously home or to another facility. The total number of residents that were placed in the pilot study were $n = 68$.

Among the 68 residents that were assessed for the "Operation No-More Fall" pilot study, 64.7% (n=44) were men, while 35.3% (n=24) were females. The ages of the residents ranged from 55-94 years old. The facility admits residents with different type of admitting diagnoses and the predisposing disease includes hypotension, CVA, seizures,

Parkinson disease, arthritis, loss of limb, vertigo, Multiple Sclerosis, osteoporosis and fracture. Sixteen of the residents had orthopedic diagnosis, 15 with diagnosis of CVA, seven with diagnosis of Multiple Sclerosis, 13 residents with Arthritis, ten with history of seizures and 34 with history of hypertension, three with fractures that had surgery done (Table 4).

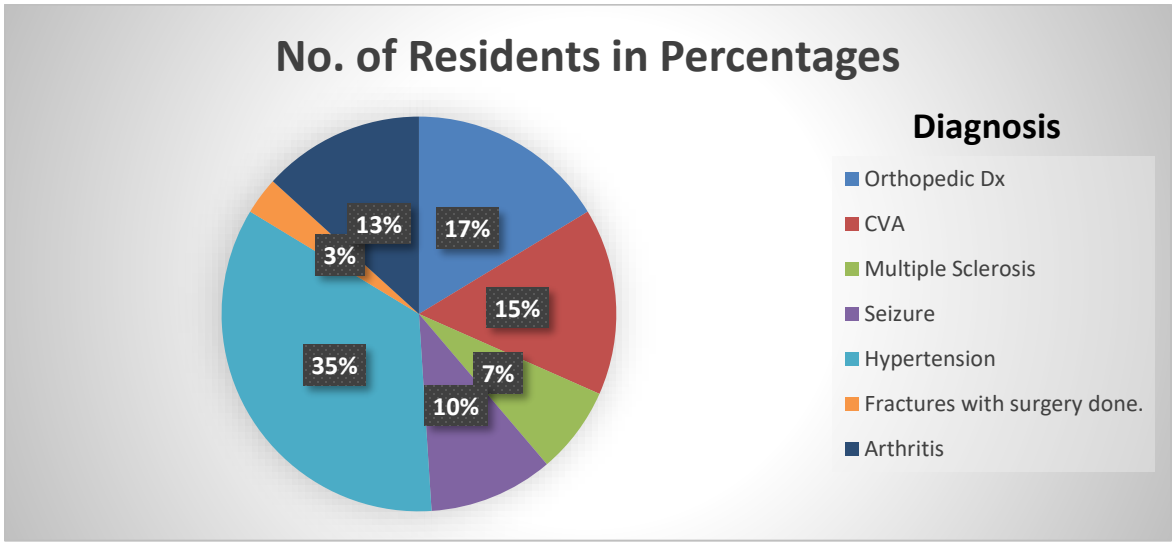
Table 4

Diagnosis of Residents in the Operation No More Falls Study

Diagnosis	No. of residents
Orthopedic Dx.	16
CVA	15
Multiple Sclerosis	7
Seizure	10
Hypertension	34
Fractures with surgery done	3
Arthritis	13

Figure 3

Number of Residents with Specific Diagnoses



Each of these residents was assessed with the Briggs fall risk assessment tool, and standardized and individualized multifactorial interventions were implemented by the nurse manager. The facility had pre-implemented interventions for all residents that were at risk for falls, and these were included in the care plans and also on the care plans, the use of the neon orange wrist band were also included. . The Briggs assessment includes the level of consciousness, previous history of falls, ambulation/elimination status, gait/balance, vision status, medications, drop in the systolic blood pressure and predisposing disease. The points for each category are between zero to four and a total of ten points and above for all the categories put the resident at risk for fall (Appendix A).

The purpose of implementing the "Operation No-More Fall" DNP quality improvement project was to assess the effectiveness of a multifactorial fall prevention program in a rehabilitation and long-term facility within a 30-day period by identifying residents at risk for fall and reducing the number of falls. The intent was to quickly identify residents at risk for fall, improve the nursing and rehabilitation staff knowledge in preventing falls and performing a concrete fall risk assessment. In the implementation month, there were 10 (ten) numbers of falls with no repeat falls, no hospitalization or emergency room visit associated due to fall also. The percentage of fall per month for that period of time was about 5% (Table 5). There was only two months that had a lower number of falls in the past 15 months. The month of July 2019 had eight falls, while the month of November, 2019 had seven falls, which is 4% and 3.4% per month respectively (table 5). There was a significant decrease in the number of falls in the month of the implementation of the pilot study. Although the facility has a zero tolerance for fall, but

the goal definitely will be 0% fall monthly. The entire residents that sustained a fall in the implementation month were all at risk for fall using the Briggs fall risk assessment tool. They all scored above ten points on the tool. The low number of falls was a direct result of the implementation of this program as staff was been proactive. Non clinical staff that notices the residents with the arm band and were able to identify that they were in any unsafe position and/or place quickly brought the attention of the nursing and the rehab staff to it.

The data does show the effectiveness of the "Operation No More Fall" incentive in the reduction of residents' falls. The de-identified data from previous record, does show an average of about 13 to 23 falls per month, with a one-time low of 7 and 8 in one month, these data interprets to the effect that team work, interdisciplinary collaboration, interventions and staff education via in-services can positively impact the numbers of falls and repeated falls.

Table 5

Fall Data with the Lowest Number of Falls

Month/year	Number of falls	Hospitalization/ER visits	% of falls per month	% of hospitalization/ER visits
July 2019	8	1	4.0%	0.08%
Nov. 2019	7	1	3.4%	0.07%
March 2020	10	0	5.0%	0%

Limitations

A short timeline is one of the limitations of this project. A longer time frame would have produced a more conclusive attestation of the long term success of the pilot fall prevention program. Having to use only one facility for this study, might also be

considered a limitation, in respect to the sample size. Also the time limit for the in-service class was very limited as the staff had to get back to work and it was a pilot study. Everyone was not available for the class, because they were out sick or on vacation

Implications

The implication of this DNP study for the long term facility team is quality improvement that will enhance quality care, increase resident safety and improve resident's quality of life. The results and data from the "Operation No-More Fall" study indicate that a consistent fall prevention program among the elderly that includes a detailed fall risk assessments, staff education, patient education, and team work and individualized care plan can decrease the number of falls and increase safety in a long term facility. Additionally, the decrease in the fall rate decreased the ER visits and hospitalizations due to falls, which was evident in the knowledge gained by the staff due to interdisciplinary collaboration and an upward turn in the positive continuum of care of the residents. Long term care residents remaining in the facility also has a positive impact on the family as the discharge date is not prolonged for them to be discharged home and allows the family to be involved with care. The facility is also affected positively as reimbursement is not affected and the facility also gets a good report on nursing home compare.

Positive Social Change

A Cochrane systemic review done on 2010 showed that 20% to 30% of falls that occur in long term care facilities are preventable (Harris-Kojetin, & Sengupta, 2018). Elderly adults are prone to falling and to fall-related injuries, and because of the mortality

rate, preventing these falls in long term facilities through evidence based practice is imminent. With the implementation of this study, a system is created that assess the resident for the probability of a fall occurring. Without the creation of a productive fall prevention program and study done by researchers and clinicians, the economic burden on the society created by falls will be widely increased in the next few years. A fall prevention program will change the society positively by decreasing the cost of hospitalization and provide a better family structure and community. The Operation No More Falls program created a forum and plan where every discipline can be involved in the implementation of fall prevention in long term facilities. Also increase awareness of the public of what can occur among the elderly if falling continues.

Recommendations

The newly introduced protocol done in the facility on reducing the numbers of fall should be reinforced so that the Briggs fall risk assessment tool is utilized by the healthcare team. To address the gap-in-practice, all skilled nursing/rehabilitation and long term care facility should adhere to a protocol and policies that aligns with the Operation No-More Fall as it was successful in the pilot site. The goal for the pilot study was of two benefits:

1. To establish a multifactorial fall prevention program that will enable all staff to recognize residents that are at risk for fall so that a more individualized care plans can be created for them.
2. To direct the health care team towards a positive way in ensuring that comprehensive and continual education is provided on the importance of

reducing the numbers of falls. This is to enable consistency among the staff on accurate assessment and treatment plan.

This new clinical guideline is now been implemented in the facility and is receiving positive feedback especially from the non-clinical staff who are glad that they are able to recognize the residents that are at risk for falls.

Every department, including the rehab and the nursing team are made aware of any admission to the facility. Before the implementation of the pilot study, the facility performs a fall assessment on resident on admission, after a fall, quarterly and annually. Also sometimes these assessments were not done on their due dates. The facility does a weekly elopement assessment for 8 weeks for all resident post admission and readmission. It is recommended that the same should be done for the fall assessment as the residents status changes from the day of admission. I recommend that both the nursing staff and the rehab staff perform the assessment consecutively, and not just the nursing managers. Weekly fall assessment will provide the staff with information on the resident so that if there is a change in the resident's status at any time, they will be aware. It will also provide the staff opportunity to acquaint themselves with completing the fall risk assessment tool, and this will done in due time. Also an audit should be done periodically by the administrator to ensure that these forms are filled out in due time, and data should continually be collected and documented to ensure consistency and compliance.

Contribution of the Doctoral Project Team

The doctoral projected team members were the DNP student, the director of nursing and the rehab director and they were very instrumental in the implementation of this project. The Director of Nursing (DON) ensured the completion of the study and also to ensure that the residents' information was de-identified at all-time per IRB regulation. With their guidance and expertise, they were able to direct the project to be up to standard as per state and federal regulatory. The team also assisted in implementing change among the other staff and this allowed for the DNP student to interact meaningfully with the staff. With working with the staff, the student was able to share information on evidence practice research with and staff and joined in creating the policy on fall prevention in the facility.

The DNP student did not have vast knowledge on the rules and regulation on the policies and procedures in regards to the population including the payment system-both of rehab and nursing parts, as it keeps been updated by CMS, but both the director of nursing and the rehabilitation department were able to provide that information. With the implementation and the completion of the "Operation No-More Fall", the DNS supplied the DNP student with the de-identified data on the number of falls for data analysis and documentation. The team also intends to continue to use the new policy due to its success. The DON also intend to implement the recommendation on scheduling the fall precaution assessment weekly for eight weeks alongside the elopement risk assessment, and both directors are working on how to incorporate both of their staff to perform the assessment instead of just the nursing staff. The end goal is to present the program to the

local long term facilities in that vicinity (as there are more than 15 long term care facilities) so that the numbers of falls among the elderly will be drastically reduced, legal liabilities to the facilities will be reduced, the cost of healthcare due to falls and also for the facilities to receive maximal reimbursement.

Strengths and Limitations of the Project

One of the greatest strength of this project was the cooperation from the healthcare staff. The administrative staff accepted and was very interested in the project. The interdisciplinary participation among the staff in the facility was dynamic. The staff was also able to acquire knowledge on statistical facts about the facility on falls, fall prevention and management, the importance of providing quality care and having an effective risk assessment tool. This was all achievable during the educational sessions and the results are seen in the pre and post test scores. Strength includes staff attending the sessions and getting to be educated on falls prevention. Having full access to the facility was a plus to the project and the DON was supportive of the project. In other words, a positive change among staff and resident is expected (teamwork among all departments and staff and also higher quality of life among the residents). The collaboration of each department-rehab, activities, maintenance, dietary and the receptionists, as they were all engaged with the project and willing to work on the safety of the residents and establish change in the facility.

Limitation of the doctoral project is on the time limit of the project, the sample size and settings and also the unfortunate introduction of the pandemic that engulf the

nation. Another limitation is that the project was only used at one setting and there is no evidence that it could be generalized to another setting.

Recommendations for Future Projects

Recommendation for future projects will be to take this project to other facilities and present it to their management in other to make them utilize the same process. The project will be used in different setting, and not only in long term care facility, but other type of healthcare facilities, including assisted living, senior housing in the community, retirements homes and different floors in the hospital. More evidence based research will be needed to ensure that the policies are up to date and upgraded as needed. Also future projects will be on increasing residents' safety and increasing their quality of life.

Section 5: Dissemination Plan

Dissemination Plan in the Facility

The hope for the Operation No More Falls pilot study is to disseminate this project not only to this facility, but also to other long-term care facilities. The pilot study was helpful because it increased awareness of fall prevention in the facility and decreased the rate of falls by more than 20% within the first 30 days; a downward trend in falls was also noted after 45 days post implementation. A meeting was held with the stakeholders at the long-term care facility in which the results were discussed over a conference call. The meeting was beneficial to ensure that there is an increase in the quality of care delivered and that the safety of the residents is maximized. Post implementation data were made available to all staff by placing a graphic depicting the trend in the conference room highlighting the success of all staff and their level of teamwork. A brief explanation of the Operation No More Falls scheme will also be placed in the conference room as a reminder. Families, vendors, staff, and residents alike will have access to the conference room to see the information on the pilot study.

Dissemination in the Nursing Profession

The plan is also to have other long-term care facilities adhere to this fall program that serve the same population in terms of diagnoses and the types of services needed and provided. In order to boost interest at other residential care facilities, brochures will be created that give detailed explanations of the study and the pre- and post-implementation data. Another goal for dissemination will be to submit an abstract for publication to pertinent health journals such as *Geriatric Nursing* and *Nursing Older*

People. Additionally, I will seek to offer a poster presentation at geriatric care conferences.

Implementation of the quality improvement program Operation No More Falls in healthcare facilities may decrease emergency department visits, litigation, and healthcare costs while improving residents' safety, quality of care, and overall outcomes.

Analysis of Self

This DNP project has been very informative and has prepared me as a practitioner, a scholar, and a project manager. Completing this project has made me a better scholar as I have been able to increase my aptitude for learning and transfer knowledge to other people, including individuals in my profession. Creating this research and quality improvement project, evaluating its progress, translating theory into practice, and watching the progression of the project toward success has increased my interest in further project creation, especially in long-term care settings. I have also improved myself in terms of my professional goals by developing my ability to speak publicly in scholarly terms about falls. The DNP program and this quality improvement pilot study have provided me with the appropriate tools to be a change agent, have increased my confidence as a project manager in improving the quality of patient care, and have improved my critical thinking and nursing skills. Additionally, interdisciplinary collaboration with other departments has made me a better health practitioner and has advanced my efforts toward my professional goal of program development with an emphasis on disease management. My efforts to motivate staff members and present

myself as a mentor for the staff and an advocate for the residents drove the completion of this project.

Challenges and Solutions

The greatest challenges to the completion of this project were the surge of the COVID-19 pandemic and the need to support nonclinical staff to be effective team members. Initially, the dietary and housekeeping staff did not understand why they needed to be involved, as they did not provide direct care to the residents. With the help of the director of nursing and the nurse managers, the staff became more engaged in the project. Through discussion and observation from other disciplines, the well being of the residents was given utmost priority. Another challenge was having to sit with the nurse managers who felt that they had been using the same Briggs fall assessment tool and had been using it effectively.

The first in-service session held for staff only had five people in the facility in attendance. With the support of the administrative staff, the meeting was attended by more than 12 staff in each session. Including national and state statistics on falls and explaining how detrimental falls were for the residents, the finances of the facility, and the community at large assisted in modifying staff behaviors. The posttest scores indicated that staff members' interest in the presentation increased. This showed me that hard work and good scholarly presentation intertwined with good research and statistical facts can help in translating information. Thus, the importance of education was a significant insight gained in this project.

Summary

Falls persist as an important problem among long-term care residents (Cameron et al., 2018). Older adults are more susceptible to falls and fall-related injuries. Falling needs to be addressed in long-term care settings; hence, the creation and implementation of a fall prevention program are important. Early identification of at-risk residents is essential in addressing this issue. Implementing the Operation No More Falls study in the facility did bring awareness to facility staff of the need to decrease falls. After 30 days of implementation, the numbers of falls were reduced compared to prior documentation. It is imperative that the staff of long-term care facilities embrace evidence-based practice in reducing falls among residents and is fully committed to reducing numbers of falls and preventing falls generally in these settings.

References

Agency for Healthcare Research and Quality. (2015). *Preventing falls in hospitals: A toolkit for improving quality of care*. https://www.ahrq.gov/sites/default/files/publications/files/fallpxtoolkit.pdf

Baek, S., Piao, J., Jin, Y., & Lee, S. (2014). Validity of the Morse Fall Scale implemented in an electronic medical record system. *Journal of Clinical Nursing*, *23*(17/18), 2434-2441. https://doi.org/10.1111/jocn.12359

Baran, L., & Gunes, U. (2018). Predictive validity of three fall risk assessment tools in nursing home residents in Turkey: A comparison of the psychometric properties. *International Journal of Caring Sciences*, *11*(1), 36-44.

Barker, W. (2014). Assessment and prevention of falls in older people. *Nursing Older People*, *26*(6), 18-24. https://doi.org/10.7748/nop.26.6.18.e586

Betty, W., & Osterberg, C. M. (2014). Strategies for reducing falls in long-term care. *Annals of Long-Term Care: Clinical Care and Aging*, *22*(1), 23-32.

Bragg, E., & Hansen, J. (2015). Ensuring care for aging baby boomers: Solutions at hand. *Generations*, *39*(2), 91-98.

Bridges, M. (2019). *Lewin 3-step change management model: A simple and effective method to institute change that sticks*. Medium. https://medium.com/@mark.bridges/lewin-3-step-change-management-model-a-simple-and-effective-method-to-institute-change-that-sticks-c0274316748d

Briggs Healthcare. (2009). *Have you taken a close look at your fall prevention program lately?* http://www.briggscorp.com/fallprevention/default.aspx

Cameron, E. J., Bowles, S. K., Marshall, E. G., & Andrew, M. K. (2018). Falls and long-term care: A report from the Care By Design observational cohort study. *BMC Family Practice, 19*(73). https://doi.org/10.1186/s12875-018-0741-6

Centers for Medicare and Medicaid Services. (2017). *Injuries and falls from immobility*. https://partnershipforpatients.cms.gov/p4p_resources/tspinjuriesandfallsfromimmobility/toolinjuriesandfallsfromimmobility.html

Chapman, J., Bachand, D., & Hyrkas, K. (2011). Testing the sensitivity, specificity, and feasibility of four falls risk assessment tools in a clinical setting. *Journal of Nursing Management, 19*(1), 133-142. doi:10.1111/j.1365-2834.2010.01218.x

Costa-Dias, M. J. M. & Ferreira, P. L. (2014). Fall risk assessment tools. *Revista de Enfermagem Referência, 4*(2), 153-161. http://dx.doi.org/10.12707/RIII12145

Cummings, S., Bridgman, T., & Brown, K. G. (2016). Unfreezing change as three steps: Rethinking Kurt Lewin's legacy for change management. *Human Relations, 69*(1), 33-60. https://doi.org/10.1177/0018726715577707

Fehlberg, E. A., Lucero, R. J., Weaver, M. T., McDaniel, A. M., Chandler, M., Richey, P. A., Mion, L., C, & Shorr, R. I. (2017). Impact of the CMS no-pay policy on hospital-acquired fall prevention related practice patterns. *Innovation in Aging, 1*(3). https://doi.org/10.1093/geroni/igx036

Gale, C., Cooper, C., & Aihie Sayer, A. (2016). Prevalence and risk factors for falls in older men and women: The English Longitudinal Study of Ageing. *Age and Ageing, 45*(6), 789-794. https://doi.org/10.1093/ageing/afw129

Godlock, G. (2016). Implementation of an evidence-based patient safety team to prevent

falls in inpatient medical units. *MEDSURG Nursing, 25*(1), 17-23.

Harris-Kojetin, L., & Sengupta, M. (2018). Falls among assisted living residents: Results from the 2016 National Study of Long-Term Care Providers. *Innovation in Aging, 2*(Suppl. 1). https://doi.org/10.1093/geroni/igy023.2833

Houry, D., Florence, C., Baldwin, G, Stevens, J., & McClure, R. (2016). The CDC Injury Center's response to the growing public health problem of falls among older adults. *American Journal of Lifestyle Medicine, 10*(1), 74–77.

Howland, J., Hackman, H., Taylor, A., O'Hara, K., Liu, J., & Brusch, J. (2018). Older adult fall prevention practices among primary care providers at accountable care organizations: A pilot study. *PLoS ONE, 13*(10). https://doi.org/10.1371/journal.pone.0205279

Huey-Ming, T. (2015). Patient engagement in hospital fall prevention. *Nursing Economic$, 33*(6), 326-334.

Hussain, S. T., Lei, S., Akram, T., Haider, M. J., Hussain, S. H., & Ali, M. (2016). Kurt Lewin's change model: A critical review of the role of leadership and employee involvement in organizational change. *Journal of Innovation & Knowledge, 3*, 123-127.

Hye-Young, J., Trivedi, A. N., Grabowski, D. C., & Mor, V. (2016). Does more therapy in skilled nursing facilities lead to better outcomes in patients with hip fracture? *Physical Therapy, 96*(1), 81-89. https://doi.org/10.2522/ptj.20150090

Jackson, K. M. (2016). Improving nursing home falls management program by enhancing standard of care with collaborative care multi-interventional protocol focused on

fall prevention. *Journal of Nursing Education and Practice, 6*(6), 84-96.

Joint Commission. (2015). *Preventing falls and fall-related injuries in health care facilities*. https://www.jointcommission.org/assets/1/18/SEA_55.pdf

Kim, J., Choi, Y., & Park, E. (2019). Incidence of hip fracture among long-term care insurance beneficiaries with dementia: Comparison of home care and institutional care services. *BMC Geriatrics, 19*(152). https://doi.org/10.1186/s12877-019-1161-8

Kim, M. S., & Eun, Y (2014). Fall-related knowledge and caring behaviors for fall prevention among care workers in nursing home. *Journal of Muscle and Joint Health, 21*(1), 11-18.

Kiyoshi-Teo, H., Carter, N., & Rose, A. (2017). Fall prevention practice gap analysis: Aiming for targeted improvements. *MEDSURG Nursing. 26*(5), 332–335.

Landers, M.R., Oscar, S., Sasaoka, J, & Vaughn, K. (2016). Balance confidence and fear of falling avoidance behavior are most predictive of falling in older adults: Prospective Analysis. *Physical Therapy*, *96*(4), 433–442. https://doi.org/10.2522/ptj.20150184

Lee, A., Lee, K., & Khang, P. (2013). Preventing falls in the geriatric population. *The Permanente Journal. 17*(4), 37-39.

Majkusová, K., & Jarošová, D. (2014). Fall risk factors in an acute care setting: A retrospective study. *Central European Journal of Nursing & Midwifery*, *5*(2), 47-53.

Murray, E. (2016). Quality Improvement. Implementing a Pediatric Fall Prevention

Policy and Program. *Pediatric Nursing, 42*(5), 256-259.

New York State Department of Health (2017). Fall Injuries among New York State Residents 65 years and older. https://www.health.ny.gov/statistics/prevention/injury_prevention/falls.htm

Park, W., Kim, M., Kim S., Yoo, J. Kim., B.S., Chon, J., Jeong, S.J., & Won, C.W. (2019). Introduction of Fall Risk Assessment (FRA) system and Cross-Sectional validation among community-dwelling older adults. *Annals of Rehabilitation Medicine, 43*(1), 87–95.

Phelan, E. A., Mahoney, J. E., Voit, J. C., & Stevens, J. A. (2015). Assessment and management of fall risk in primary care settings. *Medical Clinics of North America. 99*(2), 281–293.

Phelan, E. A., Aerts, S., Dowler, D., Eckstrom, E., & Casey, C. (2016). Adoption of evidence-based fall prevention practices in primary care for older adults with a history of falls. *Frontiers in Public Health, 4*(190). https://10.3389/fpubh.2016.00190

Quigley, P. (2015). Evidence levels: Applied to select fall and fall injury prevention practices. *Rehabilitation Nursing. 41*(1),5-15.

Slade, S. C., Carey, D, L., Hill, A., & Morris, M. E. (2017). Effects of falls prevention interventions on falls outcomes for hospitalized adults: protocol for a systematic review with meta-analysis. *BMJ Open. 7*(11). https://10.1136/bmjopen-2017-017864

Schimke, L., & Schimke, J. (2014). Urological implications of falls in the elderly: lower

urinary tract symptoms and alpha-blocker medications. *Urologic Nursing, 34*(5), 223-229. https://10.7257/1053-816X.2014.34.5.223

Stubbs, B., Brefka, S., & Denkinger, M. D. (2015). What Works to Prevent Falls in Community-Dwelling Older Adults? Umbrella Review of Meta-analyses of Randomized Controlled Trials. *Physical Therapy, 95*(8), 1095-1110. https://10.2522/ptj.20140461

Tekin, D.E., Kara, N., Tan, N.U., & Arkuran, F. (2013) The Turkish adaptation of the fall risk assessment scale developed by the Delmarva foundation: a reliability and validity study. *Journal of Education and Research in Nursing, 10*(1), 45- 51.

Wojciechowski, E., Pearsall, T., Murphy, P., & French, E (2016). A Case Review: Integrating Lewin's Theory with Lean's System Approach for Change. *The Online Journal of Issues in Nursing. 21*(2). https://10.3912/OJIN.Vol21No02Man04

Appendix A: Pretest

PRE-TEST

DATE: _____ INITIALS: _____ TITLE: _____ DEPT: _____

1. Fall risk assessment is done in the facility
   a. On Admission
   b. with every shift assessment
   c. With change in level of care or change in condition
   d. Immediately post fall
   e. All the above
2. What fall risk assessment tool is used in the facility?

3. Who completes a fall risk assessment?

4. Name 1 resident that you know that is at risk for fall and give the most rationale how you know?

5. When a resident falls, who do you notify immediately?

6. What assessments are done after a resident's falls?

7. True or false: Does Falling affects reimbursement from CMS?

Appendix B: Posttest

POST-TEST

DATE:_____ INITIALS:_____ TITLE:_____ DEPT:_____

1. What is the color code for the residents that are at risk for fall in the facility?

2. Name 2 areas that the color code will be placed on/around the residents

3. True or False: You don't need to perform a risk assessment on a resident because they may not change status.

4. True or False: A way to standardize fall risk identification is with the use of a fall risk assessment tool.

5. Once a fall risk assessment is completed, what is expected to be done?

6. If a resident that is considered at risk for fall is seen walking around unsteadily on the hallway. What should be done immediately?

7. True or False: Q 30 minutes or Hourly rounds can reduce fall among residents.

Appendix C: Neon-Orange-Colored Armbands for Pilot Study

Appendix D: IRB Approval

Dear Ms. Igharosa,

This email is to confirm that, based on your responses to Form A, your DNP study appears to fall within the parameters that the IRB pre-approved for a DNP Quality Improvement Evaluation. This means that you are permitted to collect and analyze data from public data/literature and internal site documents/data, as per the terms of the site agreement in the DNP Quality Improvement Evaluation Manual. No other data may be collected by you without prior approval from the IRB. Since this project will serve as a Walden doctoral capstone, the Walden IRB will oversee your capstone data analysis and results reporting. Your IRB approval number is 02-05-20-0441863.

This confirmation is contingent upon your adherence to the exact procedures described in the final version of the documents that have been submitted to IRB@mail.waldenu.edu as of this date. This includes maintaining your current status with the university and the oversight relationship is only valid while you are an actively enrolled student at Walden University. If you need to take a leave of absence or are otherwise unable to remain actively enrolled, this is suspended.

If you need to make any changes to the project staff or procedures, you must obtain IRB approval by submitting the IRB Request for Change in Procedures Form. You will receive confirmation with a status update of the request within 10 business days of submitting the change request form and are not permitted to implement changes prior to receiving approval. Please note that Walden University does not accept responsibility or liability for doctoral scholarship activities conducted without the IRB's approval, and the University will not accept or grant credit for student work that fails to comply with the policies and procedures related to ethical standards in scholarship.

When you submitted your IRB materials, you made a commitment to communicate both discrete adverse events and general problems to the IRB within 1 week of their occurrence/realization. Failure to do so may result in invalidation of data, loss of academic credit, and/or loss of legal protections otherwise available to the doctoral student.

Both the Adverse Event Reporting form and Request for Change in Procedures form can be obtained at the Documents & FAQs section of the Walden web site: http://academicguides.waldenu.edu/researchcenter/orec

You are expected to keep detailed records of your capstone activities for the same period of time you retain the original data. If, in the future, you require copies of the originally submitted IRB materials, you may request them from Institutional Review Board.

Congratulations!
Bryn Saunders
Research Ethics Support Specialist
Office of Research Ethics and Compliance
Email: irb@mail.waldenu.edu
Phone: (612) 312-1336
Fax: (626) 605-0472

Appendix E: Literature Review Matrix

Author/Article	Journal	Keywords	Framework	Level of evidence
Baek, S., Piao, J., Jin, Y., & Lee, S. *Validity of the Morse Fall Scale implemented in an electronic medical record system.*	*Journal of Clinical Nursing (2014)*	Fall assessment, falls clinical guidelines, falls prevention, falls	Retrospective case-control study	Level II
Baran, L., & Gunes, U. *Predictive validity of three Fall Risk Assessment Tools in nursing home residents in Turkey: A Comparison of the psychometric properties*.	*International Journal of Caring Sciences (2018)*	Older people nursing, risk management, Falls, fall assessment, Fall risk factor, nurse-patient, nursing assessment	Prospective observational design	Level I

Barker, W. *Assessment and prevention of falls in older people.*	*Nursing Older People (2014)*	Falls, falls assessment; impatient care, falls clinical guidelines; falls prevention;	Expert Opinion	Level V
Betty W., & Osterberg, C. M. *Strategies for reducing falls in long-term care*	*Annals of Long-Term Care: Clinical Care and Aging (2014)*	Falls, falls prevention, fractures, root cause analysis, wheelchair use.	Pilot Study	Level III
Cameron, E. J., Bowles, S. K., Marshall, E. G., & Andrew, M.K. *Falls and long- term care: a report from the care by design observational cohort study.*	*BMC, Family Practice,(2018)*	Falls; Frail elderly; Long-term care; Nursing homes; Polypharmacy; Potentially inappropriate medication; Primary health care.	Observational cohort study.	Level I
Chapman, J., Bachand, D., & Hyrkas, K. *Testing the sensitivity, specificity and feasibility of four falls risk assessment tools in a clinical setting.*	*Journal of Nursing Management,(2011)*	Fall risk assessment, Acute care facility, adults, methodology, nursing questionnaire, sensitivity, specificity	Descriptive and comparative cross-sectional study	Level I

Costa-Dias, M. J. M. & Ferreira, P. L. (2014). *Fall risk assessment tools*.	*Revista de Enfermagem Referência, 4(2)*	safety issue, quality, fall risk assessment tools	Systemic Review	Level 1
Cummings, S., Bridgman, T., & Brown, K. G. (2016). *Unfreezing change as three steps: Rethinking Kurt Lewin's legacy for change management*	*Human Relations, 69(1)*	CATS, changing as three steps, change management, Kurt Lewin, management history, Michel Foucault	Literature Review	Level V
Fehlberg, E. A., Lucero, R. J., Weaver, M. T., McDaniel, A. M., Chandler, M., Richey, P. A., Mion, L., C, & Shorr, R. I. *Impact of the CMS No-Pay Policy on Hospital-Acquired Fall Prevention related practice patterns.*	*Innovation in Aging,(2017)*	CMS; Healthcare policy; falls; hospital; nursing.	Secondary observational analysis	Level II
Gale, C., Cooper, C., & Aihie Sayer, A. *Prevalence and risk factors for falls in older men and women: The English Longitudinal Study of Ageing*	*Age and Ageing, (2016)*	older people, falls, prevalence, risk factors	Longitudinal Study-Survey n=4301	Level I
Godlock, G. *Implementation of an evidence-based patient safety team to prevent falls in inpatient medical units.*	*MEDSURG Nursing, (2016)*	Falls, hourly rounding, nursing, team work, patient	Evidence Based Practice Quality Improvement Project	Level I

		safety, communication		
Harris-Kojetin, L., & Sengupta, M. *Falls among assisted living residents: Results from the 2016 national study of long-term care providers.*	*Innovation in Aging.(2018)*	Fall related injuries, older adults, falls, hospitalizations, health care settings	National Survey	Level V
Houry, D., Florence, C., Baldwin, G, Stevens, J & McClure, R. *The CDC injury center's response to the growing public health problem of falls among older adults.*	*American Journal of Lifestyle Medicine (2016)*	STEADI; falls; older adults; prevention.	CDC's Web-based Injury Statistics Query and Reporting System	Level IV
Howland, J., Hackman, H., Taylor, A., O'Hara, K., Liu, J, Brusch, J. *Older adult fall prevention practices among primary care providers at accountable care organizations: A pilot study.*	*PLos One (2018)*	falls; fall prevention, older adults; fall risk assessment	Pilot Study	Level III
Huey-Ming, T. (2015). *Patient Engagement in Hospital Fall Prevention.*	*Nursing Economic$, (2015)*	Fall care plans, Patient falls, falls, fall prevention, fall assessment,	Expert Opinion	Level V
Hussain, S.T., Lei, S., Akram, T., Haider, M.J., Hussain, S.H. and Ali, M. *Kurt Lewin's Change Model: A Critical review of the role of leadership and employee involvement in*	*Journal of Innovation & Knowledge (2016)*	Organizational change, Unfreezing, Change process, Refreezing, Employee	ethnographic study	Level IV

organizational change.		involvement, Knowledge sharing, Leadership style, Change implementation		
Hye-Young, J., Trivedi, A. N., Grabowski, D. C., & Mor, V. *Does more therapy in skilled nursing facilities lead to better outcomes in patients with hip fracture?*	*Physical Therapy (2016)*	Elderly, Skilled nursing, therapy, hip fracture, skilled nursing facilities.	Retrospective cohort study	Level I
Jackson, K. M. *Improving nursing home falls management program by enhancing standard of care with collaborative care multi-interventional protocol focused on fall prevention.*	*Journal of Nursing Education and Practice (2016)*	quality fall prevention programs, fall management, multi-interventional protocol	quality assurance project	Level IV
Kim, J., Choi, Y., & Park, E. *Incidence of hip fracture among long-term care insurance beneficiaries with dementia: comparison of home care and institutional care services.*	*BMC Geriatrics, (2019)*	Long-term care insurance, Hip fracture, Home care, Institutional care, Quality of care	Retrospective cohort study	Level II
Kim, M. S., & Eun, Y. *Fall-related knowledge and caring behaviors for fall prevention among care workers in nursing home*.	*Journal of Muscle and Joint Health (2014)*	Fall-related knowledge, caring behaviors, fall prevention, nursing home.	Descriptive survey study	Level IV

Kiyoshi-Teo, H., Carter, N., & Rose, A. *Fall prevention practice gap analysis: Aiming for targeted improvements.*	*MEDSURG Nursing (2017)*	Fall prevention, gap analysis, data collection, nursing protocol	Chart review and observation-Multi-method data collection approach	Level V
Landers, M.R., Oscar, S., Sasaoka, J, & Vaughn, K. *Balance confidence and fear of falling avoidance behavior are most predictive of falling in older adults:* .	*Physical Therapy (2016)*	Balance, Fear-Avoidance, Diagnosis/Prognosis, Falls, Falls Prevention	Prospective Analysis	Level II
Lee, A., Lee, K., & Khang, P. *Preventing falls in the geriatric population.*	*The Permanente Journal (2013)*	Falls, Geriatric population, Fall risk assessment, fall prevention	Clinician Article	Level V
Majkusová, K., & Jarošová, D. *Fall risk factors in an acute care setting:*	*Central European Journal of Nursing & Midwifery, (2014)*	falls, fall risk factors, patient, hospital, retrospective analysis	Retrospective study	Level II
Murray, E. *Quality Improvement. Implementing a Pediatric Fall Prevention Policy and Program.*	*Pediatric Nursing, (2016*)	Fall prevention, pediatric impatient fall, patient safety	Systematic, data-guided	Level I
Park, W., Kim, M., Kim S., Yoo, J. Kim., B.S., Chon, J., Jeong, S.J., & Won, C.W. *Introduction of Fall Risk Assessment (FRA) system and Cross-Sectional*	*Annals of Rehabilitation Medicine (2019)*	Aged, Falls, Risk assessment	Cross-sectional study	Level I

validation among community-dwelling older adults.				
Phelan, E. A., Mahoney, J. E., Voit, J. C., & Stevens, J. A. *Assessment and management of fall risk in primary care settings.*	*Medical Clinics of North America (2015).*	Accidental falls, Aged, Community health services, Preventive health services/organization and administration, Primary prevention, Risk assessment and management, Secondary prevention, Wounds and injuries.	Clinician article	Level V
Phelan, E. A., Aerts, S., Dowler, D., Eckstrom, E., & Casey, C. *Adoption of evidence-based fall prevention practices in primary care for older adults with a history of falls.*	*Frontiers in Public Health (2016)*	Accidental falls, prevention and control, risk assessment/standards, risk factors, practice patterns, physicians standards	Retrospective chart review	Level II
Quigley, P. Evidence levels: Applied to select fall and fall injury prevention practices. .	*Rehabilitation Nursing (2015)*	Falls; evidence; injury; rehabilitation.	Literature Review	Level V
Slade, S. C., Carey, D, L., Hill, A., & Morris, M. E. Effects of falls prevention interventions on falls outcomes for	*BMJ Open (2017)*	Falls prevention interventions, outcomes, evidence-	Systematic review	Level I

hospitalized adults: protocol for a systematic review with meta-analysis.		based practice, unintentional injury and hospitalization		
Schimke, L., & Schimke, J. *Urological implications of falls in the elderly: lower urinary tract symptoms and alpha-blocker medications.*	*Urologic Nursing (2014)*	Falls, lower urinary tract symptoms, alpha-blockers, elderly, nocturia.	Expert Opinion	Level V
Stubbs, B., Brefka, S., & Denkinger, M. D. *What Works to Prevent Falls in Community-Dwelling Older Adults? Umbrella Review of Meta-analyses of Randomized Controlled Trials*.	*Physical Therapy (2015)*	Falls, fall prevention, exercise, elderly, falls in community dwelling adults	Meta-analysis of randomized controlled trials	Level I
Tekin, D.E., Kara, N., Tan, N.U., & Arkuran, F. *The Turkish adaptation of the fall risk assessment scale developed by the Delmarva foundation: a reliability and validity study.*	*Journal of Education and Research in Nursing (2013)*	Fall; fall risk; reliability and validity; scale.	Methodological study	Level II
Wojciechowski, E., Pearsall, T., Murphy, P., & French, E. *A Case Review: Integrating Lewin's Theory with Lean's System Approach for Change.*	*The Online Journal of Issues in Nursing (2016)*	Outcomes, quality improvement, interprofessional collaboration, Lewin, Lean, crosswalk, case review, outcomes	Case Review	Level III