

# Walden University

College of Nursing

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has been found to be complete and satisfactory in all respects,  
and that any and all revisions required by  
the review committee have been made.

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Abstract

Reducing Fall Rates at a Long-Term-Care Facility

by

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MSN, Walden University, 2018

BSN, University of Perpetual Help System DALTA, 2005

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

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## Abstract

In the United States, older adults often experience fall events that may result in physical, mental, and financial hardship. Since the project site was experiencing a significant number of patient falls, a fall-prevention quality improvement (QI) program was implemented. Guided by the diffusion of innovation theory and the plan-do-study-act (PDSA) model, the purpose of this doctoral project was to evaluate the effectiveness of that program to determine if the monthly fall rate in the facility would decrease during the next 6 months. The project site provided deidentified data in the form of monthly fall-rate totals as collected from the long-term-care facility for 6 months before and after implementation of the QI program. Fall-rate data were analyzed using descriptive statistics and a monthly fall-rate control chart. A paired *t* test showed no significant statistical difference between the pre- and postimplementation fall rates. Data analysis of fall rates revealed a clinically significant increase in the number of falls post-project implementation, which indicated that the QI program was not effective in reducing falls in the project facility. Based on the findings of this project, revision of the QI project and auditing of staff compliance with QI interventions is recommended. The positive social change of the project was that it could reduce the fall rate. Positive social change from this project can be realized by applying the “act” part of the PDSA cycle to strengthen the existing QI program.

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## Section 1: Nature of the Project

### **Introduction**

Falls among older adults who are 65 years old and above are common in the United States (Centers for Disease Control and Prevention [CDC], 2019). Falls in medical facilities lead to a prolonged length of stay, which makes the cost of care higher (Rochon & Salazar, 2019). Fall events are described as an accidental change of body position that places an individual on the floor or a lower surface (Almeida et al., 2019). Falls occur due to a combination of risk factors that are worsened as a person gets older (Almeida et al., 2019) and commonly occur in nursing facilities (Agency for Healthcare Research and Quality [AHRQ], 2017). In the United States, about half of the 1.6 million elderly living in the nursing facilities fall at least once per year (AHRQ, 2017). Ten percent of the population in nursing homes experience severe consequences, and approximately 65,000 of them experience hip fractures because of falls (AHRQ, 2017).

It is estimated that one older adult in the United States falls every second, which makes falls the leading cause of morbidity and mortality for the elderly (CDC, 2019). Falls occur in 30 million older adults every year resulting in 30,000 deaths (CDC, 2019). Every year, three million older adults receive medical care due to a fall incident (CDC, 2019). Twenty percent of the incidents result in critical conditions, such as bone fractures and head injuries (CDC, 2019). Falls are the second leading cause of deaths related to traumatic brain injuries (Peterson & Kegler, 2020). About 300,000 older adults are hospitalized annually due to hip fractures resulting from falls (CDC, 2019); more than

95% of hip fractures are caused by falls (CDC, 2019). About three-quarters of falls are experienced by older women (CDC, 2019).

This doctoral project evaluated the effectiveness of an existing fall-prevention quality improvement (QI) project at an LTC facility in the western region of the United States. The program had been implemented for more than 6 months. Most of the patients at the project facility were older adults. The positive social change of the project was that it could reduce the fall rate. Reducing falls can maintain the patients' general well-being. The potential positive social change can be achieved after sharing the results of the doctoral project to the LTC facility's staff and management for planning fall-prevention programs. Effective fall-prevention programs reduce fall rates among the elderly. The outcomes of this doctoral project could be used in the maintenance and development of the facility's policies and guidelines for preventing falls.

### **Problem Statement**

The problem addressed by this project was that the target LTC facility had a significant number of falls that were addressed using a QI approach. This doctoral project revealed that the QI approach was ineffective in reducing falls, which can be used in the planning to improve the facility's fall prevention practices. According to the nursing director of the facility, based on their records, a fall incident occurred almost every day prior to the QI program. The QI program was initiated to improve the quality of patient care by reducing falls to prevent additional healthcare costs and staff workload due to falls. The local relevance of addressing the fall issue was determining that the current measures were not adequate to decrease the fall rates; thus, patients were subjected to

potential injuries, increased healthcare costs, and death. In the United States, the United Kingdom, and Australia, falls are associated with increased healthcare expenditures (Fahlstrom et al., 2018). Falls can increase insurance premiums resulting in increased health care costs (AHRQ, 2017). In 2015, in the United States, the medical costs due to fall injuries and fall-related deaths reached \$50 billion (Florence et al., 2018): Medicare spent \$28.9 billion, Medicaid paid \$8.7 billion, and private and other payers paid \$12 billion (Florence et al., 2018). The total medical costs for fatal falls in 2015 was approximately \$754 million (Florence et al., 2018).

Different kinds of injuries can be caused by a fall. Some adverse effects include bone fractures, brain injuries, wounds, and bruising (Fahlstrom et al., 2018). Falls can also damage the psychological status of patients, which may result in an intense fear of falls and depression (Fahlstrom et al., 2018). Individuals who have experienced falling tend to develop functional incapacity because they tend to avoid physical activities (Fahlstrom et al., 2018).

The likelihood of falls increases with age (Fahlstrom et al., 2018). Falls are a primary safety issue in nursing facilities (AHRQ, 2017). Falls that lead to severe injuries result in legal charges against the facility's management and staff (AHRQ, 2017). When patients fall, it creates more paperwork for the nursing staff, the nursing staff needs to increase care for those who fall, and patient-satisfaction survey results show negative responses (AHRQ, 2017).

This doctoral project is significant for nursing practice because it determined that the facility's QI project was ineffective in reducing falls, which can open opportunities to

enhance their fall prevention practices. The doctoral project is essential to the nursing profession because the doctoral project results can be used to make or develop policies addressing fall reduction. Furthermore, this doctoral project is vital to the nursing practice because key stakeholders can utilize the doctoral project outcomes to revise the QI plan.

### **Purpose**

Nursing facilities commonly implement a fall prevention program and realize that it can always be improved (AHRQ, 2017). While falls cannot always be avoided, it is crucial for healthcare professionals to demonstrate a well-organized plan for conducting assessments and interventions to decrease fall rates (AHRQ, 2017). The target healthcare facility addressed its fall issue by implementing a QI program; its effectiveness was evaluated by this doctoral project. Its practice-focused question was as follows: “Does a QI project designed to reduce patient falls in a long-term-care facility, reduce the monthly fall rate within 6 months?”

### **Nature of the Doctoral Project**

The DNP project was conducted at an LTC facility for older adults in the western region of the United States. The facility fits the project because of its over 180-patient-bed capacity. The healthcare facility developed a QI project to reduce falls, which they had implemented since October 2018. According to the nursing director, the facility has a logbook that includes data about the fall incidents. I was able to access it for data analysis. The approach used in the doctoral project to organize and analyze the evidence is the evaluation of an existing QI project to prevent and reduce fall rates at an LTC facility. Literature review data were collected from the Walden University Library and

different databases such as CINAHL, MEDLINE, ProQuest Nursing, and PubMed. The activities and procedures that guided this project were based on the Walden University DNP Quality Improvement Evaluation Manual.

The project did not require any direct interaction with patients. The literature review and the latest evidence-based practice about fall prevention supported the QI project evaluation and the identified gap in nursing practice to see if the QI project was successful in reducing falls. After the project site and the Walden Institutional Review Board (IRB) approved the project with approval number 10-25-20-0663605, the facility's fall data were evaluated from their fall logbook, which contained deidentified patient data on fall incidents that occurred 6 months before and after implementing the QI project. Patient fall rates was presented according to months on a spreadsheet control chart. A narrative report of the data analysis outcome was supplied. Conclusions were described based on the results of the QI evaluation project to enhance nursing practice. The key findings of the project will be presented to the stakeholders through a staff meeting, poster, or email.

Through this project, it was determined that the existing QI program at the facility was ineffective in reducing falls. An effective QI project to reduce falls would maintain the quality of care that the facility's patients receive and would minimize harm. This finding could be used by stakeholders to improve their QI project.

### **Significance**

The key stakeholders impacted by the project will include patients and their families, facility leaders, managers, and administrators, insurance providers, staff nurses,

and other healthcare professionals such as physicians, nurse practitioners, pharmacists, laboratory staff, nursing assistants, and physical therapists. The results of the project could impact the stakeholders because the evaluation determined that it was ineffective in reducing falls. Knowing this, stakeholders could make adjustments to their fall reduction practices. Reducing fall rates would reduce the number of patient injuries and deaths, medical expenses, staff workload, and the possibility of lawsuits against the staff and facility management.

This doctoral project evaluated a QI project's efficacy in reducing falls among older adults. Its potential contribution to nursing practice included validating the current measures' effectiveness in reducing falls at the facility. This project showed that their QI project was ineffective in reducing falls; thus, the QI project team must reanalyze their current practices and revise the existing QI project. The doctoral project could encourage other nurses and healthcare professionals to conduct or participate in evaluating QI projects. The results of this project could be transferred to similar practice areas and could be used as a basis for developing a similar QI project to reduce falls in different settings, such as emergency rooms, medical-surgical wards, and telemetry units where there are older adults who are at high risks for falls.

Reducing fall incidents among the elderly at LTC facilities can help improve the patients' quality of life. Effective fall prevention strategies are vital to improving the quality of nursing care. Evaluating an existing QI project could yield positive social change because the stakeholders at the LTC facility could use the results to revise their fall prevention policies. Awareness of effective or ineffective practices can be used to

maintain or enhance patient safety procedures. In addition, patients benefit from an environment with enhanced safety to prevent falls.

### **Summary**

This doctoral project centered on the evaluation of an existing QI project at an LTC facility in the western region of the United States, which sought to reduce fall rates among older adults. The fall data were collected from the fall logbook at the facility. Literature resources included the Walden University Library, CINAHL, MEDLINE, ProQuest Nursing, and PubMed. The QI project at the facility was implemented to enhance patient-care outcomes and reduce healthcare costs. The results of the evaluation project could be used by stakeholders to improve the existing QI project. This DNP evaluation project could influence positive social change because its results could improve awareness of ineffective practices about reducing falls.

In the Section 2, I explain the theoretical foundation of this project, its relevance to nursing practice, the local background and context, and the role of the DNP student and project team.



## Section 2: Background and Context

### **Introduction**

The purpose of the DNP project was to evaluate an existing fall reduction QI project at an LTC facility. The practice-focused question was as follows: “Does a QI project designed to reduce patient falls in a long-term-care facility, reduce the monthly fall rate within 6 months”? This question was relevant to the identified gap in practice because it specifically evaluated whether a QI measure was effective in reducing falls. The purpose of this section is to elaborate on the theoretical framework, its relevance to nursing, local background and context, and role of the DNP student in the evaluation of an existing QI project.

### **Concepts, Models, and Theories**

#### **Diffusion of Innovation Theory**

The diffusion of innovation (DOI) theory was developed in 1962 by Everett Rogers (LaMorte, n.d.), who described innovation as a new idea or practice for adoption (White & Dudley-Brown, 2016). The theory describes how and when people adopt a new idea (Center of Excellence for Infant and Early Childhood Mental Health Consultation [IECMHC], n.d.). The objective of DOI theory is for people to accept and adopt new ideas (LaMorte, n.d.). However, some people may require more time than others (LaMorte, n.d.).

The theory has five adopter categories: innovators, early adopters, early majority, late majority, and laggards (LaMorte, n.d.). According to IECMHC (n.d.), innovators the trendsetters or pioneers of the new idea; early adopters consider the opinions and

suggestions of the innovators to determine whether adopting the new idea is beneficial; the early majority take more time than the early adopters before they adopt the new idea and prefer to know if the new idea worked for the early adopters; the late majority waits until the early majority has adopted the new idea, and require more convincing; laggards are the most resistant to change and may or may not adopt the new idea due to lack of interest.

The innovation process in DOI theory, according to White and Dudley-Brown (2016), includes five steps: knowledge, persuasion, decision, implementation, and confirmation. Knowledge refers to the awareness of an individual about the new idea. Persuasion is about the eagerness of an individual to gain information about the new idea, which can help to accept or reject a new idea. Decision refers to making a choice to accept or reject the new idea (White & Dudley-Brown, 2016). Implementation is when an individual incorporates the new idea into practice. Confirmation is about an individual evaluating the impact of the new idea that was applied in making a decision to stop or continue the practice.

This five-step innovation process explains how the planned changes can be achieved and maintained. An effective QI program can be used to encourage late or lagging adopters to support the program. Since this project findings indicated that the fall prevention QI project was not effective in reducing fall rates, stakeholders, including those who had adopted the plan, can be engaged in the revision process.

### **Plan-Do-Study-Act Model**

The plan-do-study-act (PDSA) model is a common type of rapid-cycle performance improvement approach (White & Dudley-Brown, 2016). Walter Shewhart developed the PDSA model as a method for continuous and systematic improvement (White & Dudley-Brown, 2016). It is a standard QI process that introduces new ideas in an environment (Coury et al., 2017). Improvement processes help determine what elements need changes to improve the workflow (Coury et al., 2017). The PDSA model helps identify additional interventions that can enhance work effectiveness (Coury et al., 2017) and enables individuals to implement new practices, resolve problems, and continuously improve procedures (AHRQ, n.d.).

The PDSA model, according to AHRQ (n.d.), involves a cycle for continuous improvements. This cycle includes planning for changes or enhancements, performing a pilot test of the improvement, collecting information about the change to ensure change effectiveness, and implementing the change in a larger scale. In the planning stage of the cycle, details of the changes are specified. In the doing stage, the changes are implemented. In the studying stage, the outcomes of the changes are evaluated. The acting stage provides an opportunity to implement new ideas in the following cycles and asks the project team's readiness for a more extensive implementation in the field of practice. This DNP project is a part of the study phase of the PDSA model. Findings from this project can be used to guide the act phase of the PDSA model. Since the QI project did not reduce fall rates, the stakeholders could use this information to refine the plan during the act phase.

The DOI theory and PDSA model are both useful in QI projects to ensure continuous improvements and acceptance of end-users. The DOI theory and PDSA model are essential tools to achieve success in a QI project. Applying models and theories can help achieve positive outcomes in a project. Furthermore, the DOI theory and PDSA model guided the project team in implementing and developing procedures in QI projects.

### **Operational Definitions**

*Fall event:* A fall event is an accidental change of body positions that place an individual on the floor or a lower surface (Almeida et al., 2019).

*Long-term-care facilities:* Long-term-care facilities are also known as nursing homes, assisted living facilities, and skilled nursing facilities (CDC, 2019).

*Older adults:* Older adults are persons who are 65 years old and above (CDC, 2019).

*Stakeholders:* Stakeholders in healthcare may refer to government offices, non-government organizations, community groups, civil society organizations, business and private sector, health insurance companies and other funders, aid agencies, health workers' organizations, healthcare providers, patients, and other health service users (World Health Organization, 2020).

### **Relevance to Nursing Practice**

In many hospitals, falls are frequent in older adult patients, which results in adverse outcomes for both the patients and the healthcare facility (King et al., 2018). The Center for Medicare and Medicaid Services (CMS, 2007) identified fall events as “never

events” (p. 47207), which is communicated to hospital administrators with a goal of reducing the fall rate to zero (King et al., 2018). The responsibilities of staff nurses include providing safe patient care with effective fall prevention measures (King et al., 2018). Nurses are responsible for participating in and developing QI projects that are focused on safe and efficient patient care, such as in a fall prevention program. In a QI project, the available data are collected and evaluated to make changes for processes and safety improvements (Quality and Safety Education for Nurses, 2020). It is important that nurses actively participate in the evaluation of QI projects as part of their profession.

DNP-prepared nurses must be knowledgeable in QI processes and development of organizational policies (American Association of Colleges of Nursing [AACN], 2006). Additionally, DNP graduates must be skillful in making strategies to resolve practice problems and must have proficiency in analyzing risks and the ability to collaborate to address practice concerns based on set standards (AACN, 2006). Moreover, the competency of DNP prepared nurses in QI projects is required to achieve project success.

### **Current Evidence**

A fall event is an accidental change of body positions that place an individual on the floor or a lower surface (Almeida et al., 2019). Falls are common in older adults who are residents of LTC facilities due to different reasons (AHRQ, 2017). Older adults are persons who are 65 years old and above (CDC, 2019). Many older adults are residents in LTC facilities (AHRQ, 2017). LTC facilities are also known as nursing homes, assisted living facilities, and skilled nursing facilities (CDC, 2019).

Falls are more likely to occur as the individual ages with a combination of risk factors (Almeida et al., 2019). The common risk factors for falls include different kinds of diseases, unsteady gait, and a history of falls (Fahlström et al., 2018). In the United States, approximately half of the 1.6 million LTC facility residents experience fall events every year, and about one-third of those who fall are likely to fall more than once a year (AHRQ, 2017). About 10% of older adults who fall result in serious injuries (AHRQ, 2017). Fall incidents are the leading cause of physical injuries among the elderly (Sharif et al., 2018). In many cases, falls cause bruising, pain, wounds, bone fractures, and traumatic head injuries (Sharif et al., 2018). Fall incidents have some consequences to the facility, such as the staff doing more paperwork and spending more time for those who fall (AHRQ, 2017). Falls may also negatively impact surveys, produce high insurance premiums, and result in lawsuits (AHRQ, 2017).

**Fall prevalence.** Three million older adults are treated in emergency departments annually due to fall injuries and more than 800,000 individuals receive hospital treatments every year because of fall injuries (CDC, 2017). The CDC (2017) noted that 20% of the fall incidents result in serious injuries such as fractures and traumatic brain injuries. There are about 300,000 people who experience hip fractures every year (CDC, 2017). Ninety-five percent of the hip fractures are caused by falls (CDC, 2017). In addition to that, falls are the leading cause of traumatic brain injuries (CDC, 2017).

Sharif et al., (2018) conducted a study that examined the prevalence of falls among individuals who are 60 years old and above. The researchers used a cross-sectional design, using a 20-item questionnaire distributed to over 500 families with at

least one older adult in the home (Sharif et al., 2018). The study results showed that 50.8% or 188 of the participants experienced fall within the past two years, and 75% or 141 individuals claimed that the fall incidents were related to their illness (Sharif et al., 2018). Furthermore, the study revealed that females and those who are 70 years old and above are more likely to fall than males and younger people (Sharif et al., 2018).

An observational longitudinal study was conducted to analyze the prevalence of falls among frail older adult dialysis patients (van Loon et al., 2019). The researchers collected data about falls and quality of life through questionnaires every 6 months for two years (van Loon et al., 2019). The study results revealed that 47% of the participants experienced falling within two years (van Loon et al., 2019). Moreover, the study results showed that the patients diagnosed with diabetes mellitus are twice more likely to fall (van Loon et al., 2019).

**Causes of falls.** According to the National Institutes of Health (NIH, 2017), there are multiple causes of falls, such as decreasing eyesight, hearing, and altered reflexes. Medical conditions such as cardiac disorders, diabetes, and issues in the blood vessels, lower extremities, and thyroid could negatively impact balance (NIH, 2017). Some medications make an individual feel sleepy or dizzy, which increases the likelihood of falling (NIH, 2017). Different specialists identified some fall risk factors, including muscle weakness, unsteady gait, and sudden decreases of blood pressure immediately after standing up from sitting or lying down (NIH, 2017). The type and design of the shoes, such as those with high heels and those that are backless, could increase the fall risk (NIH, 2017). In addition to that, confusion could increase the probability of falling

(NIH, 2017).

Falls are more likely to occur when the individual has lower body weakness, vitamin D deficiency, and walking and balance issues (CDC, 2017). Medications such as sedatives, antidepressants, and tranquilizers can negatively affect balance (CDC, 2017). Poor footwear design, vision concerns, and home hazards, such as uneven steps, could increase the possibility of falling (CDC, 2017). Every aspect of an individual and the environment must be assessed to identify fall risk factors. Furthermore, falls are commonly caused by a combination of risk factors, which point out that having more risk factors means a higher chance of falling (CDC, 2017).

Oliveira et al. (2018) stated that falls could have adverse consequences that range from minor injuries to mortalities. A quantitative retrospective descriptive study was performed to determine extrinsic factors for falling among hospitalized older adults. The participants included 424 patients admitted in the surgical unit with the age range of 60 years old and above. The study results revealed that falls among older adults are likely to occur in areas where there are scattered objects, where the floor is slippery, and where the floor levels are irregular. In addition to that, the study results showed that the absence of non-slip material on the floors increases the risk of falling (Oliveira et al., 2018).

Older adults who live in LTC facilities are at higher risk for falls. Falls among older adults commonly result in morbidity and mortality. A cross-sectional study was conducted in various states of India to examine the fall risk factors among older adults who are residents of LTC facilities. There were 163 participants in the study that included males and females between 60 and 95 years old. The participants were required to fill up



forms answering questions about their fall history, sociodemographic data, and fall risk factors. The study results revealed that the common risk factors for falls among the participants who live in LTC facilities included a history of falls, use of numerous medications, poor eyesight, use of ambulatory devices, balance issues, and vertigo. The study also showed that females are more likely to fall than males (Dhargave & Sendhilkumar, 2016).

**Strategies for preventing falls.** Issues with single-limb stability can cause falls in older adults (Riva et al., 2019). Older adults must improve their single stance stability (SSS) to reduce the risk of falls (Riva et al., 2019). A study was conducted in Northwestern Italy from March 2013 to February 2014 to examine if the use of high-frequency proprioceptive training (HPT) could enhance SSS in older people (Riva et al., 2019). There were 30 males and 31 females between 65 and 85 years old who participated in the study. The participants were divided into three groups, which included the HPT group, treadmill walking group, and no-intervention group. The HPT group participated in 12 high-frequency rocking instability sessions. The treadmill group had to attend 12 sessions of treadmill walking. The no-intervention group was only instructed to do regular walking and other physical activities. The study results revealed that the HPT group showed significant improvement in their SSS. However, the treadmill group and no intervention group did not show any improvements in their SSS (Riva et al., 2019).

The health belief model has been used to improve the behaviors of older adults who are at higher risk for falls due to their issues in postural balance and negative behaviors about falls. Different physical exercises, such as the Otago exercise program

(OEP), can improve postural balance; however, many older adults are not compliant with exercise programs. A mixed-method research study was conducted to determine the impact of the HBM to OEP in postural balance in community-dwelling older adults. The study results revealed that HBM-OEP is effective in enhancing the postural balance of older adults (Punlomso et al.,2020).

Kachhwaha et al., (2018) noted that fall experiences could negatively affect older adults' quality of life and independence. Fall incidents among older adults commonly cause injuries to them. A pre- and the post-experimental study was conducted to examine the impact of strength and training exercise on fall-related gait kinematics among 100 older adults between the ages of 65 and 80. The study results showed that strength training exercises effectively decrease fall-related gait kinematics in older adults (Kachhwaha et al., 2018).

Finnegan et al. (2019) stated that injuries caused by falls contribute to older adults' mortality rates. Exercises could lessen the risk of falls in older adults, but there is limited literature about its long-term effects to fall risks. A systematic review was conducted to evaluate the long-term impact of fall-prevention exercises in reducing fall rates in community-dwelling older adults with the age of at least 65. The program evaluated 24 studies with 7,818 participants that utilized exercise activities, such as walking and those with multiple exercise components, such as Tai Chi and walking. The study results showed that fall prevention exercises are beneficial in preventing falls up to two years after the exercise activities. In addition, the positive impact of exercise prevention intervention in reducing fall risks decreases after 2 years.

### **Local Background and Context**

The United States government has adopted legislation to reduce the risk of falls among older adults in different settings, such as homes, healthcare centers, and other community settings. The Safety of Seniors Act was passed by Congress in 2008 to organize funds and programs to prevent falls among older adults (Scotti, 2016). In the State of California, the “Aging in Place” concept has been adopted to require funding for home improvements aimed at preventing falls in the homes of older people (Scotti, 2016). In New Mexico, a community-based program for preventing falls has been implemented in the whole state that requires collaboration among healthcare professionals, older adult agencies, and other community organizations (Scotti, 2016). Moreover, Washington SB 5557 includes pharmacists in the list of health insurance provider networks to be consulted by patients about their medications as the use of multiple drugs is correlated to falls (Scotti, 2016).

The evaluation of an existing QI project was conducted in an LTC facility in the western region of the United States. This healthcare institution has over 180 beds. Many different health professionals are employed at this facility such as registered nurses, physical therapists, physicians, occupational therapists, physician assistants, registered dietitians, dentists, and nurse practitioners that collaborate to provide quality patient care.

According to the LTC facility's nursing director, fall incidents involving older adult patients were occurring almost every day before the QI project (personal communication) at their facility. This healthcare facility has developed a quality improvement (QI) project to reduce falls, which has been implemented since October

2018. This project's findings can be used by stakeholders to revise their plan using the PDCA Model. The existing QI project was not evaluated before this doctoral project started. The practice-focused question that the DNP project addressed was, "Does a QI project designed to reduce patient falls in a long-term-care facility, reduce the monthly fall rate within 6 months?" This practice focus question was relevant to the identified gap in practice, which was to see if the QI project was successful in impacting the problem of falls.

### **Role of the DNP Student**

As an emergency department (ED) nurse, I render nursing care to patients of different ages and health needs. These patients include older adults who were the focus of this DNP project. This goal when taking care of patients is to deliver safe, high quality, and effective patient care to ensure positive patient care outcomes and prevent adverse events such as falls. By conducting the DNP project that evaluated a fall reduction program, I was able to apply the findings of the DNP project that are applicable in my current practice setting to prevent falls, such as frequent monitoring and assessment of fall risks.

Another role of the DNP student in the DNP project was to engage in interprofessional collaboration. This collaboration can be performed during the dissemination of DNP project outcomes to the management of the LTC facility that implemented the QI project for fall prevention. Interprofessional collaboration, according to the AACN (2006), allows the development of patient and population health outcomes. The complex healthcare environment requires the participation of specialized

professionals to manage healthcare problems effectively. Potential bias can be decreased when making decisions through interprofessional collaboration. DNP prepared nurses are expected to demonstrate excellent skills in collaborating with various professionals to resolve healthcare issues.

According to the AACN (2006), whenever possible and appropriate, DNP graduates must assume a leadership role to lead interprofessional teams. The DNP program enables nurses to demonstrate communication and collaborative skills that are effective in the enhancement and application of healthcare policies, guidelines, standards of care, and practice models. The DNP program prepares graduates in leading interprofessional groups when evaluating complex organizational and practice problems. In addition to that, the DNP program prepares nurses to demonstrate leadership and consultative abilities in both interprofessional and intra-professional groups to initiate developments in complex healthcare concerns.

### **Role of the Project Team**

The role of the project team was to implement measures to prevent or decrease falls among older adults who are residents of the LTC facility. The nursing director and nursing supervisors led the project team. The project is ongoing and comprises various healthcare professionals, including registered nurses, licensed practical nurses, and certified nursing assistants. Preventative measures for falls required adequate documentation. Meetings were regularly held, weekly, or monthly to discuss and analyze the fall rates, incidents, root cause of falls, and strategies that decrease fall risks. Findings from evaluation of the existing QI project will be presented to the project team once the

data has been analyzed. This will allow the team to make decisions about whether to make changes to the plan. Depending on the project evaluation results, stakeholders can use its outcomes to determine if the QI project should be continued, revised, or discontinued.

### **Summary**

In this chapter, I reviewed the theoretical and conceptual framework for this project, described the current literature related to falls, explained the project's importance to the nursing profession, and provided details on the role of the DNP student and project team. In the next section, I restated and discussed the problem and purpose of the project, gap in practice, and practice-focused questions. Additionally, I explained the sources of evidence and the process of project analysis and synthesis.

### Section 3: Collection and Analysis of Evidence

#### **Introduction**

This DNP project addressed the significant number of falls that occur among the residents of an LTC facility in the western region of the United States by evaluating an existing QI project. The facility has over 180 beds. The nursing director of the facility stated that, based on their records, falls among their residents were being reported almost daily (A. Bulaun, personal communication, November 15, 2019). This project evaluated a significant gap in practice: the ineffectiveness of the facility's QI project. If the preventive measures were insufficient, patient-care outcomes would decline, and the cost of care would rise. In 2015, healthcare costs related to falls were estimated to be \$50 billion (Florence et al., 2018). In this section, I discussed the practice-focused question, sources of evidence, analysis, and synthesis of the DNP project.

#### **Practice-Focused Question**

According to the CDC (2019), in the United States, falls are commonly experienced by those who are 65 years old and above. The DNP project addressed the frequent falls reported almost every day at the target LTC facility. The facility implemented a QI project to reduce the significant number of falls. If the preventive measures were insufficient, patient-care outcomes would decline, the cost of care would rise, and the patient-care outcomes would be unsatisfactory. The practice-focused question for this project was as follows: "Does a QI project designed to reduce patient falls in a long-term-care facility, reduce the monthly fall rate within 6 months?"

### **Sources of Evidence**

A literature review was performed for this project to search for current evidence on effective fall reduction strategies and fall rate data for the 6 months before and after the QI project was implemented. The literature review was used to gain insight into falls as an important practice problem. It was conducted between November 2019 and July 2020. A combination of different search words and Boolean operators was used.

Keywords including *fall risk*, *fall prevention*, *fall prevalence*, *older adult*, and *long-term care* were used. The following databases were used to collect the latest literature:

CINAHL Plus, Medline, ProQuest Nursing and Allied Health Source, and PubMed.

Government or organizational websites, such as CDC, WHO, and AHRQ provided relevant information about falls. Most of the information about falls was published within the last 5 years.

### **Archival and Operational Data**

Based on high fall rates, the nursing director stated that they implemented a QI project, which is centered on reducing fall incidents at their facility that began more than 6 months ago and is continuing now. The current QI project at the facility has been implemented by the management and the nursing staff. Regular meetings were held to discuss the fall cases on a weekly and monthly basis. The nursing director of the facility stated that data related to falls within the facility are kept in fall reports in a logbook. I was granted administrative approval to access the fall log for the DNP project. Accessing the fall logbook containing deidentified patient information happened after the IRB and project site approval.



The information collected from the fall incidents logbook was used to evaluate the effectiveness of the facility's current QI project for fall prevention and reduction. The Walden University DNP Quality Improvement Evaluation Manual served as a guide in completing procedures of the DNP project. No direct interaction occurred between the DNP student and the patients. Only the fall incidents that took place within 6 months before and after the beginning of the QI implementation were collected and used in the DNP project. Patient fall data were presented on a spreadsheet control chart by month. A narrative report of the fall data was provided. After evaluating the fall data, conclusions were discussed as part of the QI evaluation project. Lastly, project key findings will be presented to the stakeholders through a staff meeting, email, or poster.

### **Analysis and Synthesis**

After obtaining deidentified information about the fall data from the fall incident logbook at the LTC facility, the systems used for tracking, organizing, and analyzing the evidence included various types of software programs such as Word, Excel, and SPSS Statistics. Descriptive statistics was used to present the fall rates before and after implementation of the QI project. A control chart was created that showed fall rates per month for the 6 months prior to the QI project implementation and 6 months after. As sufficient data was available, a *t* test was used to determine if there was a statistical difference between the pre-implementation fall rates and postimplementation fall rates. All information was kept private and confidential and was not shared with individuals who were not part of the QI project team. Accurate recording of data was observed. The information was saved on a password-protected laptop computer accessible only by the

DNP student. After accessing fall data on the fall incidents logbook, the logbook was returned to its original location at the facility.

### **Summary**

In this section, I restated and explained the problem, purpose of the DNP project, the gap in practice, and the practice-focused question. In this section, I also detailed the sources of evidence and the analysis and synthesis of the doctoral project. In the following section, I restated the local problem, gap in practice, practice-focused question, and purpose of the doctoral project. In addition to that, I described the findings, implications, contribution of the doctoral project team, and strengths and limitations of the project.

## Section 4: Findings and Recommendations

### **Introduction**

The local problem addressed by this DNP project was the significant number of falls of residents in an LTC facility in the western region of the United States. The gap in practice was that falls among the older residents are common. The practice-focused question was as follows: “Does a QI project designed to reduce patient falls in a long-term-care facility, reduce the monthly fall rate within 6 months”? The purpose of this DNP project was to evaluate the effectiveness of the program.

The sources of evidence used in the doctoral project included a literature search for evidence that indicated effective fall reduction strategies and fall rate data from 6 months pre- and post- QI project implementation. The literature review was conducted between November 2019 and July 2020. Different journals, peer-reviewed articles, and web pages were explored to obtain literature about fall reduction strategies. The Walden Library was used to access databases, such as CINAHL Plus, Medline, ProQuest Nursing and Allied Health Source, and PubMed. The Google Search engine was also utilized to access trusted web sites, such as the CDC, WHO, and AHRQ web pages that provide relevant information about falls. The fall data were obtained from the fall incident logbook kept at the facility.

Various software programs were used to analyze data, including Word, Excel, and SPSS Statistics. Descriptive statistics were used to present the fall rates pre- and postimplementation of the QI project. A control chart was created to show the fall rates per month 6 months before and after the QI project implementation. A paired *t* test was

used to determine if there was a statistical difference between the pre-implementation fall rates and postimplementation fall rates.

### **Findings and Implications**

A paired-samples *t* test was conducted to determine the fall prevention program's effectiveness by comparing the monthly fall rates 6 months before and after the initiation of the program. There was no significant statistical difference between pre-implementation of the fall program ( $M = 9.6667$ ,  $SD = 2.80476$ ) and postimplementation ( $M = 12.8333$ ,  $SD = 5.26941$ ) for the fall rates 6 months before and after the program was started ( $t(5) = -2.00$ ,  $p = .101$ ). From April 2018 to September 2018, the total number of falls was 58. From October 2018 to March 2019, 77 falls were documented. Though there was an increase in the mean postintervention, it was determined to be a nonsignificant statistical change. An increase in the total fall rate postintervention was also noted; while it is clinically significant, it is not statistically significant. Therefore, the QI interventions failed to reduce fall rates. Further work is needed to prevent falls.

This information can be used to revise the QI project rather than continuing with a program that is not working. A program that can reduce falls could enhance residents' well-being in various ways, such as in physical, mental, and financial aspects. The implication of the doctoral project findings to the LTC facility's management and staff was the awareness that the implemented QI program was ineffective in reducing falls and that the facility's policies, procedures, and guidelines about fall prevention can be reviewed and developed to maintain and enhance the general well-being of the residents. Positive social change will result from this project as an evaluation was completed to see

the effectiveness of the QI program in reducing patient falls. The QI program determined as ineffective in reducing falls highlights the need to make modifications and improvements in the system to keep the patients safer. Patients benefit from being in an environment with enhanced safety to prevent falls.

Table 1

*Monthly fall rates, April 2018 to March 2019*

Date	Fall rates	Mean	UCL	LCL
April 2018	9	11.25	24.3032	-1.80321
May 2018	6	11.25	24.3032	-1.80321
June 2018	9	11.25	24.3032	-1.80321
July 2018	8	11.25	24.3032	-1.80321
August 2018	13	11.25	24.3032	-1.80321
September 2018	13	11.25	24.3032	-1.80321
October 2018	15	11.25	24.3032	-1.80321
November 2018	10	11.25	24.3032	-1.80321
December 2018	5	11.25	24.3032	-1.80321
January 2019	11	11.25	24.3032	-1.80321
February 2019	16	11.25	24.3032	-1.80321
March 2019	20	11.25	24.3032	-1.80321

*Note.* The implementation of the fall reduction program started in October 2018.

Table 2

*Paired Samples Statistics*

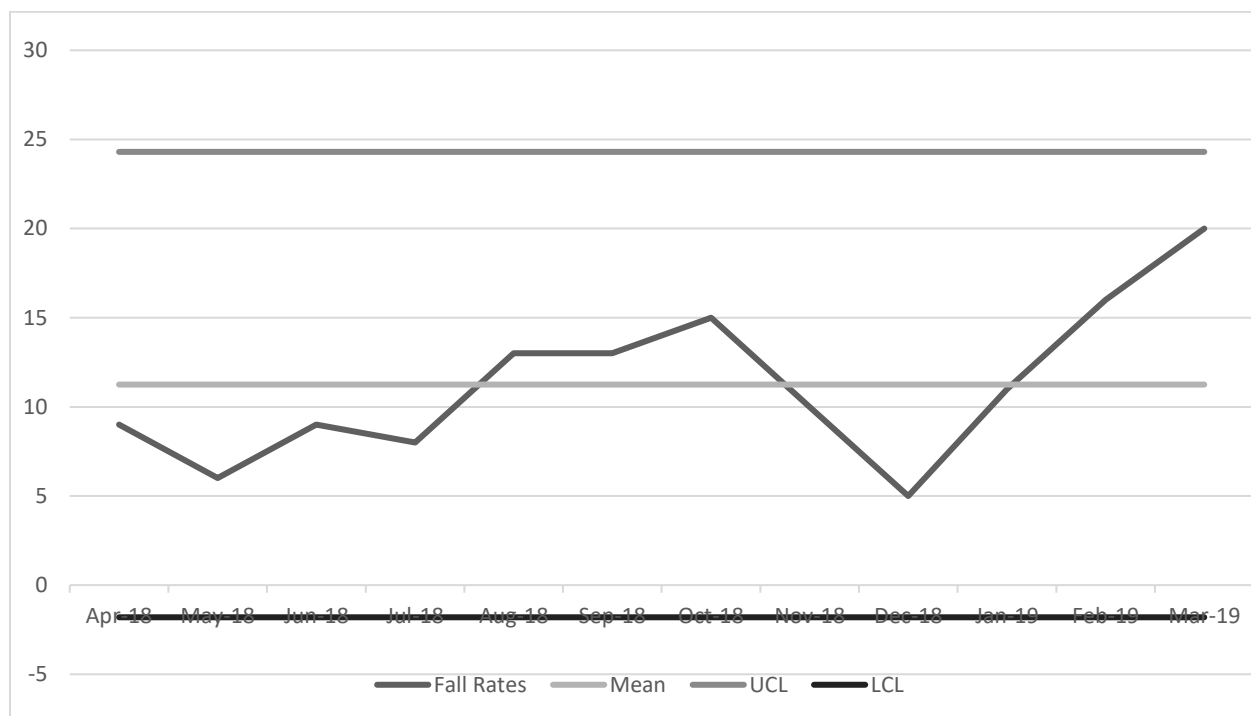
	Mean	N	Std. deviation	Std. error mean
Fall rates before the program implementation	9.6667	6	2.80476	1.14504
Fall rates after the program implementation	12.8333	6	5.26941	2.15123

Table 3

*Paired Samples Test*

	Paired Differences			Lower	Upper	t	df	Sig. (2-tailed)
	Mean	Std. deviation	Std. error mean					
Fall rates before the program implementation - fall rates after the program implementation	-3.16667	3.8688	1.57938	-7.22659	.89326	-2.005	5	.101

*Note.* The lower and upper columns refer to the 95% confidence interval of the difference.

**Figure 1.***Monthly Fall Rates Control Chart*

### Recommendations

According to the LTC facility's project facilitator, the facility's fall program involved different interventions, such as fall risk assessments, brief interview mental status (BIMS), root-cause analyses (RCAs) of fall incidents, and regular meetings about patient fall. This doctoral project was focused on examining the effectiveness of the facility's fall reduction program. Based on the findings, the LTC facility's fall reduction program was ineffective in decreasing the fall rate. It is recommended that the facility management and leadership evaluate the existing program to determine if changes are needed or if there is a concern with compliance and adherence to the plan. It is also

recommended that if the facility management determines the need for program revision and development, all the project team members be included in the planning so that different opinions can be heard.

### **Contribution of the Doctoral Project Team**

The nursing director and nursing supervisors head the project team for the LTC facility's fall reduction program. Various healthcare professionals such as registered nurses, licensed practical nurses, and certified nursing assistants are also part of the project team that provides essential care to the residents, including measures to reduce the fall rate. Discussions and meetings among the project team members were held regularly on a weekly and monthly basis to talk about fall incidents and strategies to decrease or prevent patient falls. The doctoral project findings of the LTC facility's fall reduction program will be shared with the project team to support their program evaluation and development. The project can be extended beyond the DNP doctoral project by sharing the project findings to the same or similar healthcare settings and patients to provide critical information and ensure patient safety by maintaining or enhancing fall protocols.

### **Strengths and Limitations of the Project**

The doctoral project aimed to evaluate a fall reduction program's effectiveness at an LTC facility in the United States' western region. Different healthcare professionals with varying roles participated in the fall reduction program at the LTC facility. One of the doctoral project's strengths was the collection of specific quantitative data that showed the monthly fall rates pre-and post-program implementation that was measurable. The collected quantitative fall data were analyzed using statistical software programs,



such as Excel and SPSS Statistics. Another strength of the doctoral project was the access to different literature resources that supported the importance of establishing an effective fall reduction program among older adults who are residents of LTC facilities.

On the other hand, a limitation of the doctoral project included not knowing the risk or contributing factors that led to particular individuals' fall incidents as the doctoral project only allowed deidentified data to be used in the QI evaluation. Examples of risk and contributing factors are the individual's health status and environmental concerns. Another limitation of the doctoral project was the staff's unknown compliance rate in implementing the fall reduction program, which could have significantly impacted the number of patient falls. A more comprehensive evaluation of information and data that elaborate varying risk factors and staff's adherence to program guidelines for future and similar topics with similar methods is recommended to reach a more extensive understanding of a program's effectiveness.

## Section 5: Dissemination Plan

Fall incidents among older adults at LTC facilities are a critical and nationwide issue due to its numerous implications, detailed and presented in the previous sections of this paper. Implementing effective solutions to reduce fall rates has been a challenging task for many healthcare professionals and institutions. The evaluation of a fall reduction program at an LTC facility can be used as a basis for the maintenance and development of this kind of program.

The plan to disseminate the project results can be done in different forms depending on what is safe and can be allowed due to the current COVID-19 pandemic issue. The presentation of the project findings can be performed through a staff meeting at the LTC facility, which will mainly include the professionals who are directly part of the planning and implementation of the program, such as the registered nurses, licensed practical nurses, certified nursing assistants, nursing supervisors, nursing director, and institution administrators. Making a poster and sending emails are other options of sharing the doctoral project results to the institution experiencing the problem practice. Furthermore, to reach the broader nursing profession, the project findings will be disseminated through a journal publication that will be accessible online.

### **Analysis of Self**

It has been a long journey since I started the DNP program several years ago. Though the program requirements and activities were challenging, and the expectations to perform excellently were high, I am glad that I was able to accomplish the assigned tasks and make it this far in the DNP program. Being a healthcare professional and

scholar at the same time was also challenging because of the standards to be maintained with time and scheduling constraints. However, I always looked at the positive aspects that a terminal education and completing a doctoral project will be beneficial in my development in the nursing profession.

Conducting this doctoral project about evaluating a QI project at an LTC facility has provided me with a purposeful experience that I can apply in my future role as a researcher, educator, policymaker, nursing manager, or project manager. This doctoral project has given me the awareness of the essence of collaboration among the project team members and their roles in implementing a QI project. The doctoral project has taught me to become patient with a positive outlook in completing every project section, which required long hours, multiple revisions, and intense focus. Furthermore, this scholarly journey has made me deeply realize the importance of leadership and applying evidence-based practice and research in improving patient-care outcomes, such as in the prevention of falls among older adults.

### **Summary**

The DNP project aimed to evaluate a QI project designed to reduce the fall rate among older adults at an LTC facility in the western region of the United States. Falls negatively impact the well-being of patients in numerous ways. The practice-focused question for the doctoral project was, "Does a QI project designed to reduce patient falls in a long-term-care facility, reduce the monthly fall rate within 6 months"? Descriptive statistics and a control chart were used to present the fall rate data 6 months before and after the fall reduction program implementation. The doctoral project QI evaluation

findings revealed an increased number of falls post-project implementation, which determined the program's failure and inability to reduce falls requiring QI project revisions for improvement. Based on the doctoral project findings, more work will need to be executed to reduce the fall rate at the LTC facility effectively.

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