Doctor of Nursing Practice Projects

Theses, Dissertations & Graduate Projects

Fall 2022

Empowering Emergency Department Nurses to Utilize the STEADI Program for Fall Prevention

Edmond M. Woods
jsu5247g@stu.jsu.edu

Follow this and additional works at: https://digitalcommons.jsu.edu/etds_nursing

Part of the Nursing Commons

DNP Manuscript Defense Approval

First Name: * Edmond   Last Name: * Woods

Date: * 11/28/2022

Choose your DNP program: *
- ○ Adult-Gerontology Acute Care Nurse Practitioner (Doctor of Nursing Practice)
- ● Family Nurse Practitioner (Doctor of Nursing Practice)
- ○ Post-Master's DNP (Doctor of Nursing Practice)

Manuscript Title: * Empowering Emergency De

Date of Manuscript Approval: * 11/30/2022

Student Signature — Electronically signed by Edmond WOODS on 11/29/2022 9:21:19 PM

Chair, DNP Manuscript Signature — Electronically signed by Douglas Stephens on 11/30/2022 10:07:26 AM

DNP Clinical Coordinator Signature — Electronically signed by Lori McGrath on 11/30/2022 1:29:11 PM

DNP Program Coordinator Signature — Electronically signed by Heather Wallace on 12/06/2022 3:43:30 PM

Director of Online & Graduate Nursing Programs Signature — Electronically signed by Elizabeth Gulledge on 12/07/2022 9:09:43 AM

Dean of Graduate Studies Signature — Electronically signed by Channing Ford on 12/12/2022 5:24:11 PM

Empowering Emergency Department Nurses to Utilize the

STEADI Program for Fall Prevention

A DNP Project Submitted to the
Graduate Faculty
of Jacksonville State University
in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Nursing Practice

By

Edmond M. Woods

Jacksonville, Alabama

December 16, 2022

Abstract

Background: A fall is defined as an event that results in a person coming to rest inadvertently on the ground, floor, or other lower levels (World Health Organization, 2022). Nationally the incidence of falls among older adults has steadily increased over the last ten years. According to the Centers for Disease Control and Prevention (CDC), "Falls among older adults aged 65 years and older caused over 34,000 deaths in 2019, making it the leading cause of injury contributing to death for that group" (CDC, 2019, para 1). These individuals who fall for the first time often have another fall unless modifiable fall risks are decreased. This quality improvement project occurred in the geriatric emergency department, where approximately one in three patients aged 65 and older present with a fall.

Purpose: This quality improvement project aims to implement the Stopping Elderly Accidents, Death, and Injury (STEADI) program in the geriatric emergency department (ED) to provide a fall prevention platform for nurses and bring awareness of fall prevention strategies to mitigate fall readmissions into the ED.

*Methods***:** This project was a quality improvement project utilizing a fall prevention program for older adult patients presenting to the emergency department. Educational sessions were held in person and virtually to implement a fall prevention program in a geriatric emergency department. A fall knowledge questionnaire was administered to nurses in the emergency department to assess general knowledge of fall prevention. Audits were completed at 30 and 60-day intervals post-STEADI to assess fall occurrence following being provided STEADI fall prevention resources.

Results: Findings from the pre and post-test demonstrated that the emergency department nurses' awareness of fall prevention improved, and their adherence to educating patients resulted in

decreased falls. Results from the 30 and 60-day follow-up audit demonstrated that less than 1% of patients' post-implementation was readmitted to the emergency department.

Conclusion: Nursing Implications: Implementing the STEADI Program in the emergency department provided an evidence-based platform for the nursing staff to utilize to mitigate falls and readmissions into the department. This program afforded the emergency department staff a means to provide compassionate, quality patient care while teaching fall prevention. Although this program provided these nurses with an excellent tool for fall prevention teaching, the study's limitations were impacted due to the time constraints.

Keywords: *Fall Prevention, Geriatric falls, Community-dwelling falls, fall incidence, fall rates, accidental falls, random controlled trials,*

Acknowledgments

I want to give honor to my Lord and Savior, Jesus Christ, for allowing me this opportunity. I would not be here if it had not been for his amazing grace. Thank you for giving me the courage to take on such a significant feat at this stage in my life.

To my wife, Stephanie, for your incredible support during these tough times. Also, I would like to thank my children, Lauren, and Logan, for your encouraging words when it seemed like the end would never come.

To the entire Nursing faculty at Jacksonville State University for the guidance and commitment to providing me with a better understanding of my role as an Advanced Practice Nurse. I now understand that learning is lifelong, and we must strive to gain knowledge daily. A special thanks to Dr. Douglas Stephens for the countless times you steered me in the right direction and for your support and guidance in achieving my goal. It was sometimes painful, but I achieved what I set out to accomplish through it all.

To Dr. Terri Poe and the nursing leadership at the University of Alabama at Birmingham Highland's Emergency Department, Ms. Sherichia Hardy, Mrs. Heidi Martin, and Ms. Emily Simmons, thank you for the extra support during the implementation and follow-up of this project.

Table of Contents

**Empowering Emergency Department Nurses to Utilize the STEADI Program for
Fall Prevention**

Tragically, falls among older adults, aged 65 years and older, occur globally at an alarming rate and contribute to an extraordinary number of emergency department visits. More than one out of four older adults aged 65 and above fall annually (Bergen et al., 2017). It is important to note that half of these individuals will tell their provider (Stevens et al., 2012). Over 2 million older adult nonfatal falls are treated annually in the emergency department (CDC, 2015) The number of admissions due to falls is expected to increase as the aging adult population grows (Stevens et al., 2014). Understanding that falls are occurring more often, healthcare providers should focus on determining patients' modifiable fall risk factors while they are being evaluated in the emergency department (Silviaa et al., 2021).

Prevention of falls can lead to a better quality of life, fewer hospitalizations for the older adult population, and a steady decrease in the number of resources used to treat injuries from falls. Overall, falls among older adult patients are often preventable and can be avoided if they are taught fall prevention strategies early. According to the Centers for Disease Control and Prevention (CDC), once an older adult falls, even if they are not injured, they often become afraid to ambulate again or do exercises due to the fear of falling resulting in traumatic injury (CDC, 2015). The CDC has created an evidence-based fall prevention program to assist healthcare providers in fall prevention strategies. The STEADI Program, which stands for Stopping Elderly Accidents, Death, and Injury, was created to provide training, tools, and resources for healthcare providers to help prevent falls and help their patients stay healthy, active, and independent longer (CDC, 2022). This quality improvement project aims to determine whether using the STEADI program will increase Emergency department nurses'

knowledge of fall prevention strategies and help decrease fall readmissions to the emergency department.

Background

Annually, falls constitute about 3 million visits from older adults to the emergency department nationwide. Each year, about $50 billion is spent on medical costs related to nonfatal fall injuries, and $754 million is spent on fatal falls (CDC, 2022). According to the Centers for Disease Control and Prevention (CDC), direct medical costs due to falls have steadily increased over the last decade (CDC, 2015). Direct costs can include fees for hospital, and nursing home care, doctors and other health care providers, professional services, rehabilitation, community-based services, use of medical equipment, prescription drugs, and insurance processing.

Needs Analysis

During a recent accreditation survey, a gap in practice was identified. During personal one-on-one interviews by the surveyors, it was determined that the emergency department nurses could not articulate the department's standard for patients who presented with a fall. The nurses could not articulate the department's fall prevention standard to the surveyors or explain the process by which the department screened patients for falls. Also noted, in the months leading up to the implementation of this study, from December 2021 through February 2022, 137 patients 65 years of age and older presented with a fall to this geriatric emergency department. A ratio of 1:3 patients fall, which is greater than the national average of 1:4 older adults aged 65 years and older, present to the emergency department with a fall (CDC, 2022). The University emergency department holds the only Level I geriatric emergency department designation in the State of Alabama. If the emergency department loses this designation, the organization might have severe ramifications regarding reputation, marketing of services, and potential reimbursement. Since this geriatric emergency department holds a national certification, this facility must meet the

annual guidelines set forth by that accrediting body. Therefore, an evidence-based fall prevention program was needed in the emergency department to guide nurses in reducing the number of fall-related patient readmissions that presented to the hospital.

SWOT Analysis

A SWOT analysis was conducted to assess current internal strengths, weaknesses, external opportunities, and threats. Internal strengths that could prove valuable include support from the Chief Nursing Officer, the Director of the University Emergency Department, the Director of the University Emergency department, the quality improvement officer of the department, and exceptional support from the emergency department nurses and ancillary staff.

Another strength identified at the University Emergency department was the geriatric emergency department's collaboration with Advocate Aurora Health in Milwaukee, Wisconsin, to identify common problems that affect the geriatric population and find strategies to address these challenges. Another strength of this analysis was that the hospital system has an excellent track record for inpatient fall prevention strategies. Therefore, these nurses could also partner with inpatient nurses to find successful solutions during their teaching process. The major internal weakness identified was the limited time constraint to implement a new fall prevention program and the lack of staff enthusiasm about rolling out this new program.

External opportunities and threats were analyzed. The major threats identified by this study were the recent overcrowding and boarding of patients in our emergency department due to a lack of available beds in the inpatient setting. Another threat identified is the close vicinity of other medical centers in the area that can provide similar services to this population. The significant opportunity identified is that this emergency department serves as the only geriatric emergency department in the entire state designated to meet the healthcare needs of the aging adult population. This emergency department was recently awarded the designation of Level I

Geriatric Accredited emergency department in the State of Alabama, which distinguishes it from other nearby medical facilities that provide similar services.

A SWOT analysis of the STEADI program was also conducted. A report from the Rees-Jones trauma center in Texas showed a significant decrease in the number of falls that occurred in the hospital after implementing the STEADI program. The study was conducted over two years in the facility among 2,784 patients admitted to the trauma center after a fall. The sample size was relatively small compared to other areas where patients received care. Opportunities that were demonstrated by the same study showed that the program was not implemented in the entire hospital, just in the trauma wards where the patients with falls were housed.

Problem Statement

Falls in community-dwelling older adults is increasing among this specific population. There has been an increase in patients 65 years and older who present with falls to this geriatric emergency department. About one in three older adult patients presents to the emergency department due to a fall or fall-related complication.

Older adults presenting to the ED after a fall is at greater risk for loss of function, balance, and depression (Salter et al., 2016). A range of conditions is associated with high-fall risk, including a history of prior falls, dementia, and other cognitive impairments (Carpenter et al., 2009). The question answered through this project is: Among emergency department nurses, how does the implementation of the STEADI program, compared to the current training method, expand nurses' knowledge of fall prevention strategies, and mitigate fall readmissions?

Aims and Objectives

The overarching aim of this project is to reduce overall fall readmissions among older adults aged 65 years and older who present to this geriatric emergency department during the 60-day implementation period. This goal could be achieved by implementing the STEADI program

in the emergency department, thus, providing an evidence-based platform to guide this process and improve the knowledge of fall prevention strategies among emergency department nurses.

Review of Literature

A literature review was performed with the following considerations: 1) Fall prevention strategies used by healthcare providers for older adults in the emergency department; 2) reducing the risk of falling among hospitalized patients.

PubMed and CINAHL were used as the databases, while primary headings and MESH headings were used for searching. CINAHL was searched using the following key phrases: fall prevention among older individuals, emergency department, and nonfatal falls; a total of 207 sources were located using various combinations of these terms. The results were filtered to exclude sources over five-years-old and irrelevant material. Some of the materials did not address the issue of preventing falls among older individuals in a direct manner. The search was limited by using Boolean operators such as "AND" "OR," and "NOT" in conjunction with key phrases such as "accidental falls," "hospitalized elderly," "fall prevention," "fall incidence," "fall rates," "fall risk variables," and "environmental and patient safety."

Cozart and Cesario (2009) conducted a research project that spanned 15 years and looked at previous research on the risk of falling among hospitalized patients (Cozart &Cesario, 2009). Cozart and Cesario (2009) concluded from their findings that demonstrated fall prevention approaches might help satisfy the Joint Commission's patient safety purpose of limiting injury from falls (Cozart & Cesario, 2009). Patient falls account for most injuries sustained by hospital inpatients, which is why the National Patient Safety Goals (NPSG) were developed in the first place (Joint Commission, 2015).

Despite implementing prevention initiatives, the number of patients injured in hospital falls has not dramatically decreased. The National Database of Quality Indicators (NDQI)

autumn statistics for 1,000 patient days is currently accessible for viewing on the public website. This website is valuable to hospital administrators, leaders, and other healthcare stakeholders because it contains unit-specific quality indicators that are related to nursing care (Lockhart, 2018). Some rivals, inspectors, insurance providers, and members of the public may have unfavorable impressions of hospitals on the NDNQI public website due to the lack of progress in patient safety statistics. These perceptions center on safety and patient falls. According to Giordano et al. (2020), hospitals that include mental inpatient units are disadvantaged regarding the publication of falls data on the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) or the NDNQI website because the rate of falls in psychiatric units is significantly higher than in other types of units.

In PubMed, articles were searched using the following MESH terms: fall prevention, emergency department fall prevention, minimizing ED visits due to falls, and process improvement falls. The findings of the search indicated that 318 possible sources were discovered through a variety of various combinations. The search was refined to include only clinical trials, randomized controlled trials, and irrelevant information, which identified just 28 sources.

Original studies had to meet specific criteria to be considered for inclusion. One of these criteria was an emergency department (ED)-based assessment of pre-ED or post-ED fall risk in patients aged 65 and older. The assessment had to have sufficient detail to reproduce contingency tables for meta-analysis. When further information was required, attempts were made to contact the original study's authors.

Whenever more than one qualitatively comparable research study evaluated the same risk factor for falls at the same interval following an ED examination, a meta-analysis was done with the use of the software known as Meta-DiSc. Quality Assessment Tool for Diagnostic Accuracy

Studies, (QUADAS-2), was utilized to evaluate each study's quality among those eligible for inclusion (Carpenter et al., 2014). The key results were the sensitivity, specificity, and probability ratios for fall risk variables or risk stratification tools. The secondary outcomes were estimates of test and treatment thresholds using the Pauker technique (Carpenter et al., 2014). These estimates were based on accuracy, screening risk, and the expected benefits or harms of fall prevention measures in the emergency department.

There was a total of 608 different studies that had the possibility of being relevant, but only three of them satisfied my inclusion criteria. One study analyzed the risk of falls 12 months before an emergency department evaluation using 107 patients. Two other studies with 660 patients each evaluated 29 risk factors and two risk stratification instruments for falls in geriatric patients in the six months following an evaluation at an ED. The most significant positive likelihood ratio (LR) was found to be related to a self-reported diagnosis of depression, which was 6.55 (95 percent confidence interval [CI] = 1.41 to 30.48 (Carpenter et al., 2014). Past falls, living alone, using a walking assistance device, depression, cognitive deficiency, and using more than six drugs were found as fall predictors in more than one research each, and a meta-analysis was conducted on these risk variables (Tsai et al., 2014)

According to World Health Organization (2008), the STEADI program (Stopping Elderly Accidents, Deaths, and Injuries) developed by the Centers for Disease Control and Prevention (CDC) is based on American and British Geriatric Society Guidelines to aid healthcare practitioners in avoiding older adult falls (WHO, 2008). STEADI was being studied in outpatient clinics in Oregon, Pennsylvania, and hospitals in California, to reduce the number of readmissions caused by falls. STEADI's core parts have been outlined so that health systems may apply it faithfully while modifying it to their specific clinical practice. Screening for fall risk in the elderly, identifying modifiable risk factors in those at risk, and prescribing evidence-based

interventions are all part of STEADI's process (CDC, 2015) The CDC's (2015) evaluation

strategy involved determining the cost-effectiveness of STEADI in preventing falls among older

adults and understanding the implementation of best practices. These best practices include

defining core elements across different settings, ensuring feasibility and acceptability to

healthcare providers, and increasing patient adherence to strategies that have been prescribed. A

study was done to determine the best screening strategies for detecting people at risk of falling

(Dlott et al., 2020). To deploy STEADI to its fullest potential, numerous provider types must be

utilized, and complicated patient workflows and specific clinical standards must be incorporated

into each project. Data collecting costs and the quality of evaluation data must be balanced (Dlott

et al., 2020).

Dlott et al. (2020) showed that the STEADI tool kit helps primary healthcare practitioners

fill in identified knowledge gaps in fall risk assessment, treatment, and referral. It may serve as a

resource for information and resources and a link to fall prevention and fitness programs offered

on a community level, which health professionals can use. This one includes many more useful,

valuable components than the other kits. The STEADI toolset addresses primary fall prevention

and the clinical guideline that AGS and BGS developed. The first stage of the strategy involves

segmenting the procedure for preventing falls into discrete acts that may be used in various

therapeutic contexts. A community-based training program emphasizes strength and balance,

geared at older adults at low risk (i.e., those who have not fallen or do not have gait or balance

issues). In addition, elements from Wagner's Chronic Care Model (Wagner, 1998) are

incorporated into the plan to reduce the possibility of falling. According to the Chronic Care

Model, an efficient healthcare system offers both preventative care and treatment for those who

have long-term disorders (Silva, 2017; Wagner, 1998).

According to Dykes et al. (2020), the STEADI tool suite offers several desirable benefits. It is simple and practical since it is based on current evidence of what works in preventing falls and emphasizes the identification and treatment of modifiable fall risk factors. Additionally, it emphasizes fall risk assessment and management within busy primary care practices and deals with communication barriers that can prevent patients from acting on fall warnings. Patients treated and discharged from the emergency room and those who have suffered a severe fall-related injury while in the hospital may benefit from some STEADI components. An example includes "Talking about Fall Prevention with Your Patients" because the underlying fall risk factors that contribute to these patients' falls can be addressed (CDC, 2022). The STEADI tool set may be contained in its entirety or sections within an electronic health record, making it more straightforward for doctors to conduct fall assessments, administer treatments, and make recommendations using the computer. Because patients are preoccupied with looking after themselves in the morning, they are less likely to ask for assistance from nurses and are, therefore, more likely to fall. One behavior that belongs to this category is when a person is seated in a chair and tries to reach for something that is out of reach, resulting in the person falling out of the chair (Dykes, 2020).

Silva (2017) found that patients' rooms, corridors, and restrooms were the places where the most falls were reported. Regarding falls, external causes were the most common cause in 2007, whereas internal physiologic variables were the most common in 2009. Also, in 2008 and 2009, most falls occurred when patients attempted to get out of bed in the hospital. Tsai et al. (2014) studied older individuals and discovered that the patient's bedside was the most common location for falls: 83% of falls happened there. Men's fall rates (55%) were higher than women's (45 %). Men's falls may be caused by their participation in high-risk activities. Even when the nurse tells them they must get up and go to the restroom, males may be more reluctant to ask for

help than women. Seventy-seven percent of falls were unobserved, and 85% of falls were not linked to any injuries. Patients were more likely to fall during bedside transfers, according to qualitative data analyzed from 40 instances (Dlott et al., 2020). Generalized weakness, unstable stride, lower extremity weakening, and decreased limb mobility are among the most common causes of falls, as are high-risk individuals who refuse help. Anti-hyperglycemic and antihypertensive medications were shown to increase the risk of falling.

Theoretical Framework

The literature review's themes include nursing knowledge and nurses' attitudes, availability and use of fall prevention tools and strategies, quality improvement, patient understanding and awareness of falls, length of stay, and fall injuries. Across the literature, fall prevention strategies were identified to determine which approach would be the most effective and evidence based. The Plan-Do-Study-(PDSA) model and "Kurt Lewin's (2020) Change Theory" were significant in guiding this quality improvement project (Peptirin,2020; AHRQ,2020)

The Plan-Do-Study-Act (PDSA) model will be used to implement the STEADI fall prevention program. The purpose of the PDSA model is to first plan the project by strategically determining the goals and objectives that must be achieved, creating a schedule for project completion, and creating the tools required to implement the program (Araiza, 2019). The first phase is presenting the proposed project to emergency department nurses, implementing the program, conducting audits, gathering, keeping track of data, and supporting the staff. Data analysis, comparison results, conclusion summation, and reporting are the next steps. The act of presenting results to the nursing administration, putting new recommendations into practice, and starting the project's next phase is the last stage. As shown in the continuous PSDA cycle, a

continuous improvement process for testing change must be undergone to implement a quality improvement project.

One of the most effective strategies to teach fall prevention is appropriately educating the staff. This process improvement project providing fall prevention education to nursing staff will use a careful and systematic approach to ensure that change is implemented in the dynamic and demanding nursing practice environment, notably at a geriatric emergency department that serves as the project's backdrop. A theory provides a guiding framework for a planned change management project to facilitate the implementation of evidence-based practice in a clinical setting. Kurt Lewin's (three-step) Change Theory best describes and directs the stages of the project implementation (Kurt Lewin, 2020, as cited in Dennis, 2021). The Change theory was chosen because it gives the most flexibility, causes the least amount of interruption to hospital operations, and ensures lasting change. The Change theory will serve as the foundation for the proposed quality improvement project. The Change theory offers a framework for managing nursing practice change and enhancing patient care in a clinical context at a high level. The Change theory provides a framework for the PI to conduct fall prevention teaching to nurses in the emergency department. Fall prevention education is often a delicate procedure that should be as collaborative, inclusive, and smooth as possible.

According to Kurt Lewin's Change Theory, planned change and learning will help nursing staff address practice issues related to falls, assess fall risk, and implement EBP clinical practice guidelines to enhance the quality of their care (Dennis, 2021). The theory (force-field analysis) is based on three key ideas: driving forces, restraining forces, and equilibrium. Driving forces promote, push for, or ease the change. Driving forces are opposed by or resist the restraining forces. The status quo is equilibrium; change happens. According to Lewin's Change Theory, the dynamic equilibrium of forces acting in opposite directions causes behavior in

nursing practice. Lewin's Change Theory has a three-step process - Unfreeze-Change-Freeze. Nursing staff members were prepared for change throughout the unfreezing stage.

Frontline nursing personnel will benefit from the 'PI's assistance in comprehending how and why the education program can lower falls. Once the forces are "unfrozen," the alteration can be implemented. Practice-based nursing staff education about fall prevention is provided in a participative manner while upholding open communication and engagement to reduce resistance and encourage long-lasting, permanent change (Melnyk & Fineout-Overholt, 2019). Making the fall prevention program, quality care-seeking behavior, and attitudes in frontline personnel sustainable will be the final step. Before the need for change was acknowledged, they taught fall prevention Evidence-Based Clinical Practice Guidelines (CPGs) that became the accepted standard of care (Wilkinson et al., 2015). Solidifying the change concludes the final step of the process, where the change is embedded into the workflow of the nursing staff. All stages of the process are vital to appreciate the long-term outcomes of a successful fall prevention program.

Methodology

Setting

The setting in which this quality improvement project took place is the only geriatric accredited emergency department at a large public hospital in downtown Birmingham Alabama. The University emergency department specializes in patient care for those individuals who are 65 years and older and those patients who are adolescent to middle-aged adults. University hospital serves the citizens of the greater Birmingham metropolitan area. The University hospital is a 1207-bed academic medical center providing tertiary and quaternary care to residents of Alabama and throughout the southeast. University hospital is a safety-net institution that provides patient care services unavailable at other local and regional facilities. University emergency department is the only Level I geriatric accredited emergency department

in the State of Alabama. The geriatric emergency department specializes in delivering quality care to the older adult population and the needs of other patient populations.

Population

The University emergency department has fifteen treatment rooms and four fast-track chairs to care for emergent patients. The population of focus for this project is patients 65 years and older that present to the geriatric emergency department with a fall. Nationally, falls are a significant threat to this age group, with one in four older adults experiencing a fall in 2019, which equates to about thirty-six million falls (CDC, 2022). The STEADI project focused specifically on fall patients that will be discharged from the emergency department.

Inclusion/Exclusion Criteria for Nurses

Inclusion criteria for nurses included all day and night shift registered nurses in the emergency department employed in a full-time or part-time status. The nurses must be age 21 years and older, fluent in English, have no cognitive impairments, and be able to attend the teaching sessions. Exclusion criteria for the nurses include any per-diem registered nurse, any Nursing administrator, nurses who cannot participate in the teaching sessions, and those who are not fluent in English. An informational flyer was hung in the common areas and employee lounge of the emergency department to explain the quality improvement project (Appendix D).

Design

The design for this project is an observational cohort study. This study design was utilized due to its ability to provide demanding descriptive data and information on potential long-term efficacy that clinical trials cannot provide, usually at a cost margin. The data was collected from follow-up audits at 30- and 60-day intervals. Data were extracted from the Cerner electric health record, a product that this organization utilizes. The data was used to assess readmissions and nursing compliance with informing the patients of fall prevention strategies.

Data collection was also used to evaluate the nurses' understanding and awareness concerning fall prevention in the emergency department. It was essential to utilize this design to capture unique data specific to the emergency department staff.

Risks/Benefits

This quality improvement project was provided to the emergency department nursing staff to offer an evidence-based fall prevention program to equip these nurses with the support structure to deliver quality care and reduce fall readmissions. There were no risks in attending these teaching sessions for the emergency department nurses. This study did not cause harm to any emergency department nurses, as this process is part of their normal workflow activities.

Timeline

The project took place from March 2022 to November 2022, starting with identifying a clinical problem in March 2022 (Appendix C). The planning phase took place from March 2022 through May 2022. The planning phase included identifying the clinical problem, communicating with university faculty, completing a needs/gap analysis, developing PICOT, preparing, submitting a proposal, and obtaining a letter of approval from the PERC committee at Jacksonville State University and Institutional Review Board (Appendix B). PERC approval was received on April 28, 2022. Authorization and IRB letter of approval was also obtained from the University of Alabama at Birmingham on April 22, 2022 (Appendix A). Prior to implementation, this writer completed the Collaborative Institutional Training Initiative (CITI) program (Appendix E). Implementation of this project in the geriatric emergency department was completed in May 2022. Data Collection/Analysis started in June 2022 with completion in August 2022. Final manuscript preparation began in September 2022 through November 2022. After several edits from faculty and editors, the final manuscript was submitted. Project dissemination, poster, and a brief presentation took place on the annual dissemination day.

Budget and Resources

The entire cost of this project was roughly $627.00. This total included fees for the statistician for statistical analysis, paper supplies, and final reports. The University hospital supplied the costs of the employees (full-time equivalents), utilization of computer resources, and use of utilities, space, and other equipment.

<div align="center">

Evaluation

</div>

Descriptive statistics (frequencies) were used to describe the emergency department nurses' study population. The performance evaluation of these individuals was made utilizing descriptive statistics regarding the knowledge and skills they have learned about fall prevention. A Fall Knowledge Test (FKT) questionnaire was administered to nurses in the emergency department to assess general knowledge of fall prevention (AHRQ,2013). Data collected included age, gender, the highest level of education, and years of nursing experience as baseline characteristics of the sample population (Appendix G). Knowledge of fall prevention strategies was assessed pre-and post-teaching intervention. The questionnaire assessed knowledge of ten statements outlined in Appendix F. Nurses could select multiple answers for questions one through ten. A weighted scoring scale was utilized for these questions with one max point per question, equating to ten total points for the ten items on the FKT questionnaire. Frequency distributions and mean/standard deviations were utilized to present overall sample baseline characteristics. Paired t-tests were used to assess the statistical significance of a change in score in knowledge pre- and post-intervention for participants. A *p*-value of <0.05 was considered statistically significant. All analyses were conducted using Statistical Analysis Software version 9.4. Based on nursing documentation, we also conducted follow-up audits at 30- and 60-day intervals after education was conducted to determine whether readmissions occurred during this project's implementation.

Data Maintenance and Security

The data was collected from the Health System's electronic health record, called Cerner. These data were extracted and then forwarded to a statistician to analyze. The Health system owns the Cerner electronic health record system, which is password-protected. The Health System's maintained all records utilized to analyze the data during this study. The data obtained did not have identifiable information other than demographic information, including age, gender, and years of nursing experience in ranges collected to report findings in aggregate. No information will be identifiable to any one participant. The data was kept per the policies of the Health System.

Results

A total of 74 patients were included in our overall analysis. There were 69 patients (n = 69) admitted during the pre-implementation period; the majority were white (82.6%) and female (78.3%), with a mean age of 76 years. During the post-implementation period, patients (n =74) were admitted for falls with similar characteristics (white and female), just as the pre-implementation group, with a mean age of 77 years (Appendix I). Using a t-test and chi-square tests, there were no statistically significant differences between the pre-and post-implementation patients.

Among the pre-implementation group, less than 5% of patients had received education regarding fall prevention compared to the 90% of patients in the post-implementation group. Overall, amongst both groups, only one patient had a readmission for a fall within the 60-day follow-up period. She did receive instructions on fall prevention during her first admission for a fall. No additional bivariate or multivariate analyses were conducted between these two groups due to a lack of fall readmissions within 60 days.

Discussion

The project sought to address the lack of an evidence-based fall prevention program for emergency department nurses to utilize when caring for patients who would be discharged into the community. The main aim of this project was to provide a support structure for these nurses to use when providing fall prevention teaching and ultimately mitigate readmissions to the emergency department. Data were collected during this intervention to evaluate the nurses' knowledge of fall prevention strategies and readmission rates. This data demonstrated the nurses' knowledge of fall prevention strategies increased significantly after teaching was performed (Appendix H). Audits were completed at 30- and 60-day intervals to evaluate whether teaching was effective and whether nurses complied with proper instruction. Based on the data collected, adherence to teaching improved with the nurses' post-intervention; notably, one patient was readmitted during the project's implementation phase.

Implications

The STEADI initiative has made a tremendous impact on preparing the nursing staff on fall prevention strategies such as proper screening, assessment of modifiable risk factors, and appropriate interventions to reduce identified fall risks. The project aims were met by demonstrating an increase in the emergency department nurses' knowledge of fall prevention strategies and a heightened awareness of an evidence-based program that successfully equips them with the proper tools to provide quality care to geriatric patients who experienced a fall. Implementing an evidence-based fall prevention program in the emergency department will be instrumental in decreasing the number of patients who return to the emergency department with fall injuries.

Limitations

The main limitation seen with this study is its small sample size. It was limited to only twenty-two nurses working in the emergency department. Another limitation of this study is its implementation time, which was only twelve weeks. Another limitation was that two nurses left the study due to personal challenges. Nurses reported two primary barriers related to the study: a) the time needed to adequately teach fall prevention to patients in a busy emergency department and b) a noisy environment that is not ideal for individual teaching. Teaching patients fall prevention strategies after receiving pain meds was also a limitation to learning fall prevention.

Dissemination

The findings of this project will be disseminated through a poster, presentation, and paper. The DNP project will be presented at the annual Dissemination Day at the University with a poster and a brief presentation. A DNP manuscript will be placed in the University's Library Repository System.

Sustainability

The implementation of this STEADI initiative was successful with regards to providing a platform for emergency department nurses to utilize when providing care to patients with falls. If used correctly and continuously, this tool can be the proven instrument the leadership team endorsed. fall prevention champions in the department can utilize this program to continue to provide evidence-based fall prevention long after this DNP student has graduated.

The STEADI program has shown potential benefits if used appropriately and continuously during the implementation of fall prevention. The emergency department was an optimal setting to provide this teaching, whereas patients who had already presented to the department with falls. The implementation of this program should be evaluated over a more extended period for its potential benefits to the patients in the emergency department.

Conclusion

Falls continue to be a problem among older adults. The rates of falls are steadily increasing and will reach astronomical numbers if not mitigated. "Falls are the most common cause of traumatic brain injury in older adults" (CDC, 2015) This project's main objective was to provide an evidence-based fall prevention platform for nurses to utilize in the emergency department, specifically for older patients that would be discharged back into the community. Due to the steady rise in the number of older patients presenting with falls to the emergency department and the nurses' previous lack of knowledge concerning the department's fall prevention standard, it was vital to implement this proven fall prevention strategy. It is important to note that about one in three older adults who present to the emergency department are due to a fall. The STEADI program was proven effective in the emergency department due to its ability to help emergency department nurses fill in identified knowledge gaps in fall risk assessment, treatment, and referral. The program's straightforward approach to fall prevention included screening for fall risk in the elderly, identifying modifiable risk factors in those at risk, and prescribing evidence-based interventions. The program's rudimentary structure made it ideal for nurses in a busy geriatric emergency department to employ during the implementation of this process improvement initiative. Although the STEADI program is basic in its approach, it addresses primary fall prevention in addition to the clinical guideline developed by the American Geriatric Society (AGS) and British Geriatric Society (BGS), respectively.

While there were identified limitations of the study, such as its sample size, the implementation of a fall prevention program in an ultra-busy emergency department, and time constraints, this process improvement successfully provided an evidence-based platform to support nurses in fall prevention and education. Further studies are needed to determine the best

strategy to put in place for fall prevention in the emergency department and address potential barriers that could impede this fall prevention program.

Identifying evidence-based fall prevention for the emergency department was evident in the project's positive results. The STEADI program proved a valuable tool in the campaign to teach fall prevention in the emergency department. Lastly, this program empowered emergency department nurses with proven and accepted fall prevention platforms to provide exceptional care for their patients.

References

Agency for Healthcare Research and Quality, (2013) Tool 2E: Fall

    Knowledge Test, Rockville, MD.

    https://www.ahrq.gov/patientsafety/settings/hospital/fallprevention/

Agency for Healthcare Research and Quality, (2020) Plan-Do-Study-Act (PDSA) Directions and

    Examples, Rockville, MD.

    https://www.ahrq.gov/health-literacy/improve/precautions/tool2b.html

Araiza, Alba, (2019). "Implementing a Fall Prevention Program: A Quality Improvement Project

    to Promote Patient Mobility on the Medical-Surgical Unit" 1019. *Master's Projects and*

    Capstones. 1091. University of San Francisco, California

    https://repository.usfca.edu/capstone/1091

Bergen, G., Stevens, M., & Burns, E. (2017). Falls and fall injuries among adults aged ≥65 years

    - United States, 2014. Centers for Disease Control and

    Prevention. https://www.cdc.gov/mmwr/volumes/65/wr/mm6537a2.html

Carpenter, C. R., Avidan, M. S., Wildes, T., Stark, S., Fowler, S. A., & Lo, A. X. (2014).

    Predicting geriatric falls following an episode of emergency department care:

    A systematic review. *Academic Emergency Medicine*, *21*(10), 1069–1082.

    https://doi.org/10.1111/acem.12488

Centers for Disease Control and Prevention (2015, March 15). Falls Among Older Adults:

    An Overview. http://www.cdc.gov/HomeandRecreationalSafety/Falls/adultfalls.html

Centers for Disease Control and Prevention. (2019, July 26). STEADI- older adult fall

    prevention. Centers for Disease Control and Prevention.

    https://www.cdc.gov/falls/index.html

Cozart, H. C., & Cesario, S. (2009). Falls aren't us: State of the science.

Critical Care Nursing Quarterly, 2009 Apr-Jun;32(2):116-27

https://doi.org/10.1097/CNQ.0b013e3181a27dc00

Dennis, E. A. (2021, October 14). Increasing fall awareness through Nursing Staff education.

ScholarWorks. https://scholarworks.waldenu.edu/dissertations/11061/

Dlott, C. C., Moore, A., Nelson, C., Stone, D., Xu, Y., Morris, J. C., & O'Connor, M. I. (2020).

Preoperative risk factor optimization lowers hospital length of stay and postoperative

emergency department visits in primary total hip and knee arthroplasty patients. *The

Journal of Arthroplasty, 35*(6), 1508-1515. https://doi.org/10.1016/j.arth.2020.01.083

Dykes, P. C., Burns, Z., Adelman, J., Benneyan, J., Bogaisky, M., Carter, E., & Bates, D. W.

(2020). Evaluation of a patient-centered fall-prevention tool kit to reduce falls and

injuries: A nonrandomized controlled trial. *JAMA Network Open, 3*(11),

e2025889e2025889. https://doi.org/10.1001/jamanetworkopen.2020.25889

Giordano, A., Bonometti, G. P., Vangolio, F., Paneroni, M., Bernocchi, P., & Cormini, L.

(2016, December 7). Feasibility and cost-effectiveness of a multidisciplinary home-

telehealth intervention program to reduce falls among elderly discharged from hospital:

Study protocol for a randomized controlled trial. *BMC geriatrics*, 16(1):209.

https://doi.org/10.1186/s12877-016-0378-z

Joint Commission (2015) The Joint Commission National Patient Safety Goals.

Oakbrook Terrace, IL. https://www.jointcommission.org

Melnyk, B. M., & Fineout-Overholt, E. (2019). Evidence-based practice in nursing & healthcare:

A guide to best practice. *Wolters Kluwer*.

Salter, A. E., Khan, K. M., Donaldson, M. G., Davis, J. C., Buchanan, J., Abu-Laban, R. B.,

Cook, W. L., Lord, S. R., & McKay, H. A. (2006). Community-dwelling

seniors who present to the emergency department with a fall do not receive guideline

care and their fall risk profile worsens significantly: A 6-month prospective study.

Osteoporosis International, *17*(5), 672–683. https://doi.org/10.1007/s00198-005-0032-7

Silva, K. B. (2017). Continuous Quality Improvement. Fall Prevention: Breaking Apart the

Cookie Cutter Approach. *MedSurg Nursing, 26*(3), 198-200.

Silviaa, D., Lucenteforte, E., Bravi, F., Foschi, R., La Vecchia, C., & Negri, E. (2021). Risk

factors for falls in community-dwelling older people: *Epidemiology, 21*(5), 658-668.

https://doi.org/10.1097/EDE.0b013e3181e89905

Stevens, J. A., Corso, P. S., Finkelstein, E. A., & Miller, T. R. (2014). The costs of fatal and

nonfatal falls among older adults. Injury prevention. *Journal of the International*

Society for Child and Adolescent Injury Prevention, *12*(5), 290-295.

https://doi.org/10.1136/ip.2005.011015

Stevens; DeCaro E; Adler G, J. A., Ballesteros, M. F., Rudd, R. A., DeCaro, E., & Adler, G.

(2012). Gender differences in seeking care for falls in the aged Medicare population.

American Journal of Preventive Medicine, 43(1), 59-62.

https://doi.org/10.1016/j.amepre.2012.03.008

Wagner E. H. (1998). Chronic disease management: What will it take to improve care for

chronic illness? *Effective clinical practice*: ECP, 1(1), 2–4.

Wilkinson, J. M., Treas, L. S., Barnett, K. L., & Smith, M. H. (2015). Fundamentals of nursing:

Theory, concepts, and applications (3rd ed.). F.A. Davis Company.

World Health Organization. (2008). WHO global report on falls prevention in older

age. https://www.who.int/publications/i/item/9789241563536

Appendix A

UAB IRB Approval Letter

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

Office of the Institutional Review Board for Human Use

470 Administration Building
701 20th Street South
Birmingham, AL 35294-0104
205.934.3789 | Fax 205.934.1301 |
irb@uab.edu

NHSR DETERMINATION

TO: Woods, Edmond M

FROM: University of Alabama at Birmingham Institutional Review Board
Federalwide Assurance # FWA00005960
IORG Registration # IRB00000196 (IRB 01)
IORG Registration # IRB00000726 (IRB 02)
IORG Registration # IRB00012550 (IRB 03)

DATE: 22-Apr-2022

RE: IRB-300009199
"Empowering Emergency Department Nurses to Utilize the STEADI Program for Fall Prevention"

The Office of the IRB has reviewed your Application for Not Human Subjects Research Designation for the above referenced project.

The reviewer has determined this project is not subject to FDA regulations and is not Human Subjects Research. Note that any changes to the project should be resubmitted to the Office of the IRB for determination.

if you have questions or concerns, please contact the Office of the IRB at 205-934-3789.

Additional Comments:

Not Research - Quality Improvement Project

PLEASE NOTE: You may not refer to any findings from this project as *research* in any presentations or publications.

Appendix B

JSU IRB Approval Letter

JSU | **INSTITUTIONAL REVIEW BOARD**
JACKSONVILLE STATE UNIVERSITY

Institutional Review Board for the Protection of Human Subjects in Research
249 Angle Hall
700 Pelham Road North
Jacksonville, AL 36265-1602

April 28, 2022

Edmond Woods
Jacksonville State University
Jacksonville, AL 36265

Dear Edmond:

Your project "Empowering Emergency Department Nurses' Utilizing the STEADI program for Fall Prevention""
04282022 has been granted exemption by the JSU Institutional Review Board for the Protection of Human
Subjects in Research (IRB). If your research deviates from that listed in the protocol, please notify me
immediately. One year from the date of this approval letter, please send me a progress report of your research
project.

Best wishes for a successful research project.

Sincerely,

Lynn Garner
Associate Human Protections Administrator, Institutional Review Board

Phone: 256-782-8144 • Fax: 256-782-8146 • www.jsu.edu • An Equal Opportunity | Affirmative Action Employer

Appendix C

DNP Timeline

Task	Start Date	Completion Date
Identification of Clinical Problem	March 2022-	Late March 2022
Communicated with Faculty Project Ideas		
Needs/GAP analysis	Early April 2022	Mid-April 2022
Develop PICOT		
Identified Preceptor	Mid-April 2022	Late April 2022
Met with Stakeholders		
Developed Proposal		

Initiate a Literature Review of Current Evidence	March 2022	April 2022
Completed PICOT Statement	April 2022	Mid-April 2022
Sought PERC approval from Jacksonville State University	April 2022	Late April 2022
Submitted an IRB approval from Clinical Site	Late April –2022	May 2022
Implementation	Early May 2022	June 2022
Data Collection/ Analysis	Early August 2022	September 2022
Manuscript Preparation, Edits, Correction, and Review	September 2022	October 2022

Final Manuscript Preparation and Review	Late October 2022	Mid-November 2022
Final Manuscript Submission	Late November 2022	
Project Dissemination, Poster Presentation, and Submission of Eportfolio	Late November 2022	

Appendix D

Informational Flyer

Purpose- The purpose of this quality improvement project is aimed to implement the STEADI Program in the geriatric emergency department (ED), thus mitigating the readmissions of falls into the ED.

Who - All Full and Part-time Registered Nurses at Highlands Emergency Department Participation is Strictly VOLUNTARY

What- Attend Educational Sessions "shift huddles" and Per Zoom Meetings

When- During "shift huddles" before the beginning of each shift and via ZOOM.

Where- Employee Lounge in the ER

Date- May 1, 2022- August 1, 2022

**Those interested in participating please contact Edmond Woods, MSN, CRNP, FNP-BC @ jsu5247g@stu.jsu.eduor contact by phone @ 205-541-2020

Appendix E

CITI Training Certificate

Appendix F

Pre-/post-intervention questionnaire to assess knowledge of fall prevention strategies among nurses in the Emergency Department

Q1. Which of the following statements about Falls is correct?
The risk of falling will be decreased when a 'patient's toileting needs are met
The use of antipsychotic medications is associated with an increased risk of falls in older adults
Falls have multifaceted etiology, so fall prevention programs should comprise multifaceted interventions
Regular review of medications can help to prevent fall
Q2. Risk factors for falls in the home include all of the following except:
Previous Fall history
Antibiotic usage
Dizziness/Vertigo
Impaired Mobility
Q3. A multifaceted intervention program should include.
Environmental Safety
Education to patient/family and health care workers
Individually tailored fall prevention strategies
Safe patient handling while being seen in the emergency department
Q4. Which of the following statements is true?

A fall risk assessment should include a review of history of falls, mobility problems, medications, mental status, continence, and other patient tasks
The cause of a fall is often an interaction between 'the patient's risk, the environment, and patient risk behavior
Increase in hazardous environments increases the risk of falls
While being seen in the emergency department, the use of a patient identifier helps staff identify those patients at risk for falling
Q5. Patients with impaired mobility should be:
Restrained to bed
Encouraged to mobilize with the assistance of a walker, cane, or caretaker
Referred for an exercise program or prescription of walking aids as appropriate
Assisted with transfers
Q6. Risk factors for falls include:

'Parkinson's Disease
Incontinence
Previous History of Falls
Delirium
Q7. Which of the following statements on education in fall prevention is false?
Education programs should target primarily health care providers, patients, and caregivers

Education programs for staff should include the importance of fall prevention, risk factors for falls, strategies to reduce falls, and transfer techniques
Instruction on safe mobility with an emphasis on high-risk patients should be provided to both patients and families
Education should only be given at the start of the fall prevention program
Q8. Which of the following is recommended to improve patient safety?
Making sure throw rugs are removed from the floor
Placing frequently used items within reach of the patient while in bed
Having plenty of lighting in the home
Instruct patient to sit on the edge of the bed before standing
Q9. Exercise programs for strength training in older ambulatory adults should:
Be ongoing
Be unsupervised
Be very aggressive
Include individualized strength and balance training
Q10. In the geriatric emergency department setting, intervention programs should include:
Staff education on fall prevention
Provision and maintenance of mobility aids
Post-fall analysis and problem-solving strategy
Bed alarms for all patients regardless of risk

Appendix G

Baseline Characteristics of participants in the sample population (N=22)

Characteristics	
Age, mean (SD)	33 (13)
Gender	
Male	6 (27.3)
Female	16 (72.7)
Highest Level of Education	
AD	3 (13.6)
BSN	18 (81.8)
MSN	1 (4.6)
Years of Nursing Experience, mean (SD)	10 (13)
Questions:	
1. On a scale from 1 to 10, how convinced are you that it is important to use the STEADI Fall Prevention Program in the **Emergency Dept? (With 1 being** **Not important to 10 Very** **Important), mean (SD)**	9.3 (1.2)
2. On a scale from 1 to 10, How confident are you in your ability to use the STEADI Fall Prevention Program currently in your practice? (With 1 being Not **Confident at all to 10 Very** **Confident), mean (SD)**	7.5 (2.3)

3. How often do you ask patients to explain back, in their own words, what they need to know or do in their homes to prevent falls, using the following scale	
1. I have been doing this for 6 months or more	10 (45.5)
2. I have been doing this for less than 6 months	10 (45.5)
3. I do not do it now, but plan to do this in the next month	1 (4.5)
4. I do not do it now, but I plan to do this in the next 2 to 6 months	1 (4.5)
5. I do not do it now, and do not plan to do this.	0 (0)

Note: Results are reported as N (%) unless otherwise noted.

Appendix H

The average score for Falls Knowledge Test provided to nurses in the Emergency Department
pre-/post-intervention (N=22)

	Participant Score, mean (SD)	Percent Correct	p-value
Type of Intervention			0.18
Pre-intervention	9.43 (0.39)	94.3%	
Post-intervention	9.34 (0.46)	93.4%	

Note: Mean difference pre-/post-intervention is 0.09 and 95% CL (-0.04, 0.23)

Appendix I

Post-Intervention Results

	Pre-Implementation	**Post-Implementation**
N	69	74
Age, mean (SD)	76.8 (8.5)	77.8 (9.0)
Gender, N (%)		
Male	15 (21.7)	23 (31.1)
Female	54 (78.3)	51 (68.9)
Race/Ethnicity, N (%)		
White	57 (82.6)	52 (70.3)
Black	12 (17.4)	20 (27.0)
Other	0 (0.0)	2 (2.7)
Teaching Completed, N (%)		
Yes	3 (4.3)	67 (90.5)
No	66 (95.6)	7 (9.5)
No statistically significant associations were identified between the pre-/post-implementation group		