

2019

Staff Education Project Using the Stop Elderly Accidents Deaths and Injuries (STEADI) Toolkit

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Walden University

College of Health Sciences

This is to certify that the doctoral study by

Carla Fisher

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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Walden University

2019

Abstract

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Stop Elderly Accidents Deaths and Injuries (STEADI) Toolkit

by

Carla Fisher

MS, Walden University, 2014

BS, Walden University, 2012

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

Walden University

February 2019

Abstract

Falls are a major public health concern and contribute significantly to mortality and morbidity in the older adult population. Each year, approximately 3 million older adults are treated in emergency departments for fall-related injuries and at least 300,000 older people are hospitalized for hip fractures. The purpose of this project was to improve the participants' knowledge and highlight interventions to reduce the incidence of falls and injuries as a result of falls. The project was developed using the Stop Accidents, Deaths and Injuries (STEADI) toolkit, the Iowa model of evidence-based practice to promote quality of care, and the Lewin's change theory. The practice-focused question related to whether fall prevention would improve following the implementation of a staff education project using the STEADI toolkit. Twenty-six nurses were assessed to determine their knowledge deficits. Pretest and posttest data were analyzed, and as a result of the staff education initiative, the nurses' knowledge increased by 99.25%. Prior to the session, the facility had not participated in a fall-prevention initiative. This project offered a practical solution to the educational gaps identified at the practice setting. Adopting the STEADI toolkit at the practice setting is expected to improve patient safety, reduce falls with injuries and prevent fall-related deaths.

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Dedication

I dedicate this work to my family whose support has been so instrumental.

Acknowledgments

I give all praise, worship and adoration to the Ancient of Days, who was, and is, and is to come. My undying adoration goes to my husband Floyd for his inspiration and support throughout this journey. I am forever grateful to my children Jovan and Jodi-Ann who have cheered me on, and helped me to stay awake when I was completely fatigued.

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Section 1: Nature of the Project

Introduction

Falls in the elderly population who live either alone at home or with caregivers are a national health concern. According to the Centers for Disease Control and Prevention (2017), falls are the number one cause of injuries and deaths among older Americans and are the most common cause of traumatic brain injuries. In 2015 medical costs due to falls totaled more than \$50 billion; from 2007 to 2016, falls in the elderly have increased by 30%.

Patient falls are also one of the most commonly reported incidents that result in significant loss of independence, prolonged hospital stays, and increased hospital costs (Ambutas, Lamb, Quigley, 2017). Falls can cause serious injuries such as fractures that may require surgery, or head injuries such as subdural hemorrhages. For elderly patients, sustaining a fall, could lead to fear of falling, weakness and anxiety. Furthermore, they may experience a decrease in their ability to perform activities of daily living, a decreased participation in social activities, and loss of independence (CMS, 2017).

Problem Statement

Each year approximately 30 to 40% of people over the age of 65 fall. The direct medical cost for falls totals \$30 billion annually. Environmental and behavioral factors such as being distracted or rushing are more likely to contribute to falls. Older adults fall at least once a year and this proportion increases with age Falls account for loss of quality

of life, often causing a decline in self-care ability (Phelan, Mahoney, Voit & Stevens, 2015).

Previously there was no protocol or clinical practice guideline in the clinic setting on fall preventions for elderly patients. Nor was there a toolkit, handouts or posters in the clinic setting addressing this topic. It is a responsibility of the Doctor of Nursing Practice to teach and promote vital issues concerning patients with the use of evidence-based practice (EBP). Another responsibility is to ensure that current and relevant clinical guidelines are used to promote the quality and quantity of life in those elderly patients (Ketefian, & Redman, 2015). DNPs are on the forefront to translate EBP into the clinical setting; they are prepared to be champions of scholarly development in the nursing field (Ketefian & Redman, 2015). Fall prevention is a contemporary topic in the medical field and many interested parties are involved in alerting healthcare providers.

Purpose Statement

The purpose of the project was to address the question, “Will a staff education module on the STEADI fall prevention toolkit increase the nurses’ knowledge on prevention of elderly falls?” The population included adults aged 55 and older, enrolled at the practice setting. The project outcome was to implement the Falls Education Project. Questionnaires were used to compare nurses’ knowledge before and after the Education Project. The expected outcome was improved fall prevention practices in managing the patient population.

Implementing a staff education project was crucial, because falls decrease social involvement. Many patients develop a fear of walking, which in turn inhibits interacting

with their peers (Pin & Spini, 2016). Secondly, falls can lead to fractures, hospitalizations and post-surgery rehabilitation stays, which rob patients of their independence. Thirdly, by educating staff, the risk of falling can be reduced, because they will be in a better position to implement appropriate interventions.

Nurses become vehicles of social change. This project sought to incorporate traditional understandings of fall prevention, as well as introduce newer evidence-based ideas. As change agents, nurses can incorporate improved processes to achieve positive outcomes. Once buy in from the nurses was achieved, their influence could then be used to advocate for a falls prevention policy. Because managing falls is so challenging, collaborative teamwork is a necessity. Nurses hold lead positions within healthcare, and as such, they can introduce and implement innovative ideas to prevent falls, which is crucial.

Nature of the Doctoral Project

In accordance with the protocols of the practice setting, every fall that results in major injuries, such as a fracture or a subarachnoid hemorrhage, is reported via an incident summary report, both internally and externally (to two governing bodies). A root cause analysis meeting is then organized as a “fact finding” session with multiple parties involved. Those findings are then reported to the external governing bodies for prevention, education, and identified change in order to prevent a reoccurrence. (Falls without injuries are documented and monitored via incident reports.

This educational project was intertwined with the practice setting’s quality initiative to reduce falls with injuries. The project focused on educating the nurse

practitioners, registered nurses, home health aides, physical and occupational therapists. The training sessions would be conducted once during an extended lunch break to ensure that all the team members had the opportunity to attend.

Training materials were developed using the STEADI toolkit and were dispensed to the participants during the educational session. Lewin's change theory was used as a foundation in developing the module during this process. To assess knowledge, that is, the effectiveness of the training, a pretest and posttest evaluation was administered to assess knowledge. The findings from the data were then analyzed and compared using proportional statistics. With increased knowledge and critical thinking skills, the nurses will be in a better position to detect patient's deteriorating condition and make referrals to primary care providers.

Significance and Relevance to Practice

Because more than one third of adults 65 years and older fall each year in the United States, this project is highly significant, is relevant to nursing practice and needs further exploration (Scott & Ferrara, 2015). For example, in 2015, 29,886 older Americans died due to unintentional falls. Of those deaths, 421 occurred in New Jersey (NJ Falls Prevention Workgroup, 2017). In New Jersey alone, an average of 222 older adults are treated each year in emergency departments or as inpatients due to falls (NJ Center for Health Statistics, 2015). Falls prevention is a major focus of the Healthy People 2020 initiative due to the increase in injuries (2018). Nurse practitioners in particular could become inundated with such patient caseloads in the primary care

setting. If so, they would be unable to keep abreast of revised recommended guidelines or the most appropriate evidence-based fall prevention and management guidelines.

Secondly, the project is significant in that baby boomers continue to age, the elderly population is living longer, and thus the population increases. The staff education project is noteworthy because it can help nurses improve their assessment and communication skills. The project could also motivate nurses to change their practice.

The project was beneficial because prior to enrolling at the primary care setting, many members of the patient population were not being managed by a primary care provider and used different local emergency rooms frequently. Undertaking responsibility for these patients without a standardized fall prevention plan or toolkit could lead to an increase in the number of falls, as well as inappropriate or ineffective treatment plans. Nurse practitioners continue to face challenges evaluating the elderly, as history taking may not provide all the relevant facts due to Alzheimer's Disease or Dementia. Furthermore, an elderly patient may report a fall weeks or months after it has occurred. The Nurse Practitioner (NP) may not be aware of all the patient's comorbidities and could prescribe medication that could actually contribute to falls. Without a standardized fall prevention toolkit in place, early identification of these patients at risk for falls would be delayed.

This doctoral project addressed the gap in practice so that nurses could be armed with a strategic tool to predict patients at risk for falls, in order that they could take action before, rather than after a fall.

Summary

There was a large gap between theory and what was being practiced in the clinical setting in relation to fall prevention. Falls are the leading cause of unintentional injury-related deaths and non-fatal injuries in people aged 65 years and older. Falls predispose patients to injury, loss of independence, decreased mobility, hospitalization, long-term placement in a nursing home, and separation from their loved ones (Phelan et al., 2015). Caring for the patient who falls is costly. Fall-related injury care exceeds \$30 billion annually (Phelan et al., 2015). Falls have been and continue to be a major problem in nursing practice.

With this in mind, nurses needed assistance to identify and manage fall-risk patients. As a result of this initiative, they learned about interventions such as vision, gait, orthostatic blood pressure measurement, medication review, and Vitamin D administration. The nurses' gained increased knowledge regarding fall prevention. Background and context will be discussed in section 2.

Section 2: Background and Context

Concepts, Models and Theories

As there was no clinical practice guideline or protocol in the clinic to screen or address fall prevention in elderly patients, a paradigm shift was needed. If falls were going to be prevented, a change in the nurses' behavior and way of thinking would be necessary. The theory selected to support the development of this project was the Kurt Lewin Change Management Theory.

Lewin's Change Management Theory (Mitchell, 2013) was selected due to its applicability to the introduction of change in the clinical environment. The features of the theory are normally presented in stages that can be used as a foundation on how to identify possible hindrances to change (Mitchell, 2013). The theory was used to guide the process by helping the nurses accept change related to fall prevention. At the same time, it helped them with transition during three different stages.

The theory highlighted the fact that resistance could be encountered. Because resistance could delay implementation of the project, early identification of areas of resistance should be addressed sooner rather than later. For some nurses change occurs in stages and their buy-in and input, as well as endorsement by senior management was required.

Lewin's Change Theory (Wojczechowski, Pearsall, Murphy & French, 2016) provided a useful overview on human behavior related to change. Utilizing this theory to guide the development of the project helped the nurses transition into this change in practice and improved their knowledge of fall prevention. As falls are the leading cause

of fatal injuries in the elderly, Lewin's change theory was used to promote inter-professional collaboration to improve and sustain the best outcomes for safe and high-quality patient care (Wojczechowski et. al, 2016). The theory facilitated change using three stages namely "unfreezing, changing and refreezing" (Spear, 2016).

During the "unfreezing stage" contributing factors that resist change were identified. Nurses were encouraged and motivated to replace their old behavior with a new way of thinking. Resistance was viewed as a restraining force and was counteracted with positive forces. Change can bring about tremendous stress for all parties involved. However, the nurses were optimistic and embraced the proposed change, because it would improve the patients' quality of life. In order for healthcare organizations to maintain equilibrium and survive, the organization must respond to an ever-changing environment (Wojczechowski, et al., 2016).

The "changing stage" or "moving to a new level" or the "movement stage" involved a combination of a change in thoughts, feelings or behavior (Wojczechowski et al., 2016). The nurses were reminded that they were not only positioned to contribute to change but to lead the changes that were occurring in the healthcare setting. The educational session brought home the fact that shifting required a new or advanced set of knowledge, skills and attitudes regarding wellness and population care. To be a major player in shaping these changes, the nurses needed to understand the factors driving the change, as well as the competencies needed for personal success (Salmond & Echevarria, 2017).

During the final or “refreezing stage,” it was intended that the changes introduced become the norm. Applying this stage was crucial, because it focused on integrating a new equilibrium into the system so that it becomes a habit and resisted change (Wojczechowski et al., 2016). The nurses were involved in all three stages, because their buy-in was needed to promote change and implement the STEADI toolkit in the practice setting.

The other framework that was used for the purposes of the project was the Iowa Model. The model is popular and regularly used when conducting nursing research. The model sets the stage for nurses to use the most current evidence-based guidelines to ensure the best possible care and patient outcomes in their practice (Polit, 2010). The model offers practical guidance on how to use evidence to an advantage. Fall prevention needs to be evidence-based if not patients will continue to sustain injuries.

Once a clinical problem was identified, I used the fundamentals of the model to conduct research, in order to identify the best evidence based approach to alleviate or rectify the problem. Using the model was advantageous in that it promoted consistency. The organized approach enabled me to maximize time and resources and stay on course. The IOWA Model greatly impacted the project as it led to thinking outside the box and not relying on past experiences or practice wisdom.

Relevance to Nursing Practice

The incidence of falls influence nursing, as it comprises issues related to clinical practice, safety measures, financial burden and quality of life and care that the nurse

provides (Kirkpatrick, Boblin, Ireland & Robertson, 2014). Preventing falls in clinical practice is a complex undertaking. Nurses cannot remain aloof as they play an active and essential role in fall prevention. In today's nursing world, where evidence-based, person-centered care is a requirement, practitioners must use and integrate not just one, but multiple sources of knowledge to decrease the number of falls (Kirkpatrick, et al., 2014). The nurse in this instance takes on the role of a bricoleur or a scientist and seeks to analyze and possibly change practice through investigation (Kirkpatrick, et.al., 2014). Other negative outcomes resulting from falls include (Kirkpatrick, et al., 2014).

- A decreased quality of life
- Loss of independence and possible transfer to a long term skilled care facility
- A fear of falling which may result in repeat falls
- Long term pain
- Decreased mortality, as falls resulting in a hip fracture lead to a reduction in life expectancy
- Sedentary lifestyles and inability to perform activities of daily living and instrumental activities of daily living
- Reduction in socializing

The staff educational project geared towards reducing falls with injuries was beneficial. Studies show that staff perceived that education created a positive culture, facilitated teamwork, and enabled patients and staff to work together to address falls prevention (Kirkpatrick, et al., 2014). It was hoped that as a DNP student, facilitator,

educator and mentor, I would be perceived as a valuable member of the team. Other positive outcomes anticipated were that staff's knowledge and awareness regarding creating a safe environment would increase. Lastly, it was also anticipated that the nurses on a whole would be motivated to change their practice (Hill, Waldron, Francis-Coad, Haines, Etherton-Ber, Flicker, Ingram & McPhail, 2016).

Several factors contribute to the reason the elderly population fall more often than younger adults. According to Lee, Lee, and Khang, (2013), the most common reasons for falls are decreased muscle strength, visual impairment, polypharmacy, orthostasis, low body mass index, chronic diseases, psycho active medications, environmental hazards, surgical procedures and lastly, behavioral hazards. If nurses are armed with education regarding these factors, they will be in an advantageous position to increase awareness, which will in turn lead to patient or caregiver behavioral changes.

The staff education project was also relevant to nursing practice as it paved the opportunity for the nurses to grow in their profession by improving knowledge in an area that was identified as deficient. Effective education tools were desperately needed sooner rather than later, to address the growing patient population, who were increasing their visits to healthcare facilities due to falls. As a result of the training the nurses became more productive and their confidence was boosted. Another advantage of the education initiative was it enabled the nurses to keep abreast of current fall prevention strategies.

Systematic implementation of STEADI assisted the clinical teams to reduce older patient fall risks (Eckstrom, Parker, Lambert, Winkler, Dowler & Casey, 2018). The practitioners at the clinical site were in need of an appropriate fall risk assessment tool

that they could rely on as a useful guideline. The STEADI Toolkit is resourceful as it could enable NPs in all primary care settings to manage the elderly population more effectively (Stevens, 2013). As pointed out by (Stevens, 2013), the current state of nursing practice in relation to falls is that education is lacking. The STEADI Toolkit was developed at such a time as this to address the gap (Stevens, 2013).

The toolkit contained two referral forms that the nurse practitioners could customize for each patient. Presenting the materials in the toolkit was advantageous as the team acknowledged that by using the referral forms, patients could be directed as soon as possible to specialists or specific evidence-based programs in the community (Stevens, 2013). Other salient points that reflected the relevance of the toolkit and contributed to the nurses' buy in were, the materials introduced measuring orthostatic blood pressure, medication review, functional assessments (30-Second Chair Stand Test as well as a 4-stage Balance Test). Printable brochures, posters and other educational materials could also be downloaded from the CDC's website (2018). The group also reviewed the algorithm and their verbal response was positive.

Local Background and Context

The staff educational project took place in an urban primary care setting with a client base of more than 200 patients. The facility is part of a larger group and its mission focuses on wellness as a whole and promotes participation in state-based fall prevention initiatives. The patient population is culturally diverse and physicians and nurse

practitioners perform the role of primary care providers. Local state evidence confirmed that falls should be taken seriously as many lives are at stake.

Falls with and without major injuries are costly. Falls not only contribute to physical injuries but to social and psychosocial consequences as well (Kirkpatrick, et al., 2014). Patients and their caregivers have been educated to remove clutter in the home, wear proper footwear and use the assisted devices provided. However, preventing falls in the home continues to be challenging. It has been decided that if patient safety and outcomes were to be improved, then a more appropriate and innovate way to reduce falls was needed.

Role of the DNP Student

As a DNP prepared nurse, my role involves generating new evidence for the profession. The program at Walden is a stepping-stone to becoming well versed in applying the most appropriate, or the best evidence to change the facility's nursing practice. Another role that I could fulfill is being that of a trendsetter and leading the way for others in the profession to follow.

Nurses are like sheep and tend to follow clinical practice protocols developed by their agencies, many of which are not based on the best or highest levels of evidence. When a practice crisis arises or a question needs an answer, many nurses would instead turn a charismatic colleague rather than rely on current research (Ketefian & Redman, 2015). As a DNP student, I will fulfill the role of a practice-based mentor and use my

skills to bring about change. Secondly, as a DNP student, my motivation is to translate evidence into practice that can be utilized to reduce the number of falls.

Role of the Project Team

The project team comprised of nurses in leadership and non-leadership roles. The team was optimistic to launch the project as managing falls has been challenging. Once IRB approval was received, the DNP student initiated the education session and the nurses were invited to attend. Stakeholder buy-in was achieved and senior management approved an extended lunch hour to allow all the nurses to attend.

The project team was extremely supportive and team members volunteered to monitor progress, collect data and maintain a falls log post-project implementation. A taskforce was also put in place to mentor newly recruited nurses. Colleagues from other disciplines will be invited at a later date to join the post-implementation team, as they too may benefit from the education.

Summary

In summary, Section 2 outlined an overview of the concepts, models and theories used to steer the project, the background and context, its relevance to nursing practice, and the role of the DNP student as well as the project team. The Lewin's change theory and the IOWA Model provided an organized approach that prevented wasting time. The fall prevention education program was piloted which paved the way for continued learning. The process used in collection and analysis of the data will be elaborated on in the next section.

Section 3: Collection and Analysis of Evidence

Introduction

Managing falls is challenging. However, research has shown that some falls are preventable. The key to fall prevention is utilizing a clinically relevant, evidence-based approach, such as a staff education project. The STEADI Toolkit was instrumental, as it had the potential to assist providers in putting proven fall prevention plans into practice (Phelan, Mahoney, Voit & Stevens, 2015). The purpose of the project was not only to create awareness, but to empower the team to utilize the knowledge.

The project was carried out in a busy primary care setting. The main purpose of the education project was to create awareness and complement the team's knowledge, as well as to provide tools and new resources that could be used to prevent falls in the elderly population. Secondly, the project aimed to promote dialogue amongst the team, the patients, and their caregivers on the topic of fall prevention. While intended for nurses, the fall prevention education training had many aspects that other disciplines could adapt. The training has implications for social change in care related to the elderly population. As such, physical and occupational therapists would also be encouraged to participate at a later date.

Practice-Focused Question

The practice-focused question for this educational project was as follows: "Will a staff education module on the STEADI fall prevention toolkit increase the nurses' knowledge on prevention of elderly falls?" A knowledge-based survey was distributed

before and after the education session in order to ascertain the effectiveness of the teaching exercise.

Sources of Evidence

Launched in 2012, the CDC introduced the STEADI toolkit, which is a combination of researched clinical practice guidelines developed by both the American and British Geriatric Societies. Since the launch of the recommendations, educational modules for the primary care provider as well as the patients have been included. The STEADI Toolkit along with other sources of evidence were used for this doctoral project.

Multiple sources of evidence were included in the development of this project. The Lewin's change theory was the theoretical foundation used and articles supporting the STEADI toolkit, fall prevention, fall incidence, and other supporting evidence were extracted and reviewed from the following four databases: PubMed, CINAHL, Medline, and Google. Also used was the CDC's main website and information for providers on fall prevention including the STEADI toolkit. The website of the Agency for Healthcare Research and Quality's (2013) website also offered valuable information on falls and fall prevention. All articles used related to the toolkit were peer-reviewed.

Analysis and Synthesis

A PowerPoint (Appendix A) was presented on the STEADI fall assessment kit in a 1-hour lecture to the healthcare staff in the clinic setting. A multiple choice pre-test (Appendix B) and post-test (Appendix C) with questions from the module were both completed, the purpose of which was to evaluate the staff's knowledge on the topic of fall prevention and the STEADI toolkit. The pre-test was distributed prior to the

commencement of the education session, while the post-test was distributed after the educational session.

The duration of the lecture was approximately 1 hour with time allotted for pre/post testing assessment and questions related to the educational module. Afterwards data was evaluated using proportion statistics from the multiple-choice questions. The data gathered included non-identifiable descriptive statistics such as provider role, gender and educational level. Data was presented in a simple table format as well as a graph, to identify strengths and weaknesses according to concepts of the questions asked. Based on the feedback and answers in the post-test, future educational needs would be identified.

Summary

A fall prevention educational tool can be advantageous in a setting such as this, as it can translate research evidence into practice. Lack of knowledge regarding managing is a detriment to both the patients and the clinical team. The aim of the project was to increase knowledge using the STEADI Fall Prevention Toolkit. Participants who completed the training were able to demonstrate an increase in knowledge with the content and format of the staff educational module. The participants were able to screen, educate and use the proponents of the toolkit in the clinical setting to screen elderly patients on fall prevention and promote education to their caregivers and family members. Through analysis and synthesis of the data, I was able to address the practice-focused question. Findings and implications, recommendations and strengths and limitations of the project will be examined in Section 4.

Section 4: Findings and Recommendations

Introduction

Past history of a fall is the single best predictor of future falls. At least 30-40% of those who fall will do so again. Falls reflect the quality of nursing care. Therefore, it is crucial for nurses to respond quickly and effectively after a fall (Agency for Healthcare Research and Quality, 2013). Upon evaluation, the 1- hour educational session proved successful in increasing the nurses' knowledge. The goal of the study which was based on the pre-and post-test questionnaires was achieved.

This doctoral project highlighted the fact that there was a gap due to team members' lack of knowledge about fall prevention, and how to effectively manage falls using the CDC's recommendations. The purpose of this project was to investigate whether implementation of the CDC's STEADI toolkit in a primary care setting increased the nurses' knowledge about fall prevention strategies and motivated them to use the toolkit in their practice to decrease the incidence of falls. This section of the project summarizes the findings presented, the implications for social change the recommendations for implementation and the and as well as the strengths and limitations of the project.

The project was implemented in a primary care practice with a high rate of falls. The project site executed the CDC's STEADI toolkit, which was adapted from the American and British Geriatric Societies and was based on a simplified algorithm. The toolkit provided much information, many tools for healthcare providers to use in their

every day practice to assess patients for risk of falls. The toolkit was armed with gait and balance assessment tests, instructional videos and educational handouts.

Prior to commencement of the project, the proposal was firstly reviewed and approved by the site's Institutional Review Board. Following this, project approval obtained from Walden's Institutional Review Board (IRB): Approval No. 09-18-18-0252306. The project was scrutinized in its entirety in order to protect the well-being of the participants and to ensure that it complied with the protection of human subjects and regulations governing the protection of human subjects.

On the day of the training, each participant was given one pre-test; confidentiality about the score was reinforced. After the pre-tests were completed, they were then placed in a separate binder. Next, the lecture highlighting the STEADI toolkit commenced and lasted 1 hour. Time was then allotted for questions about the training module.

The post-test consisting of 16 multiple-choice questions was then completed by the nurses within 30 minutes. In an identical format to the pre-test, each participant was handed only one test to avoid duplication. Responses from both the pre and post-tests were compared, analyzed and calculated using proportion statistics. The data gathered included non-identifiable descriptive statistics. The rationale for comparing pre-test data to post-test data was to ascertain if the post-test scores would be higher and if the nurses' knowledge increased. It was hypothesized that the post-test scores would be higher following the educational session.

Missing values and outliers are normally encountered during the data collection process (Kwak & Kim 2017). As such, the integrity of the evidence needs to be

maintained to prevent it from being called into question. No missing data was encountered as all 26 nurses participated during the pre-test and post-test, and neither of them withdrew or discontinued the session. No data cleaning or data editing occurred and the data was thoroughly reviewed for any abnormalities. After the completion of both tests, the forms were immediately placed in separate binders and removed from the training room. The tests were scrutinized for lack of data, excess data, inconsistencies, strange patterns or missing data.

Findings and Implications

A total of 26 team nurses (n=26) participated in the project. The majority of the members were female with a wide range of nursing experience ranging from 5-15 years. Team members' knowledge of falls was assessed via the pre-test questionnaire. Overall, the pre-test results revealed an average score of 35%, and the scores ranged from 0%-65%. Following the PowerPoint presentation, the post-test evaluation revealed an average score 85%, with a range of post-test scores from 65% to 100%. Results from the pre-test and post-test are detailed below, and Table 1 summarized both the pre-test and post-test results. Overall the knowledge scores highlighted by the surveys increased following the post-test. Evaluation revealed a significant increase with an average score of 99.25%, which endorsed the effectiveness of the in-service.

Regarding the pre-test, knowledge was lacking in many areas and participants consistently scored low on specific knowledge questions. The participants achieved lower scores when answering questions assessing knowledge on the evidence-based definition

of falls, different methods of preventing falls in the home, and types of questions to ask patients regarding falls.

Results show that there was a significant improvement in knowledge following the educational session, as the average score achieved was 99.25%, as outlined in the bar graph in Figure 2. A total of 26 participants completed both the pre-test and post-test. The nurses were enthusiastic and devoted a full hour to participate in the project. None of the nurses were called away to attend to pressing patient needs as the wellness center was closed to facilitate the training.

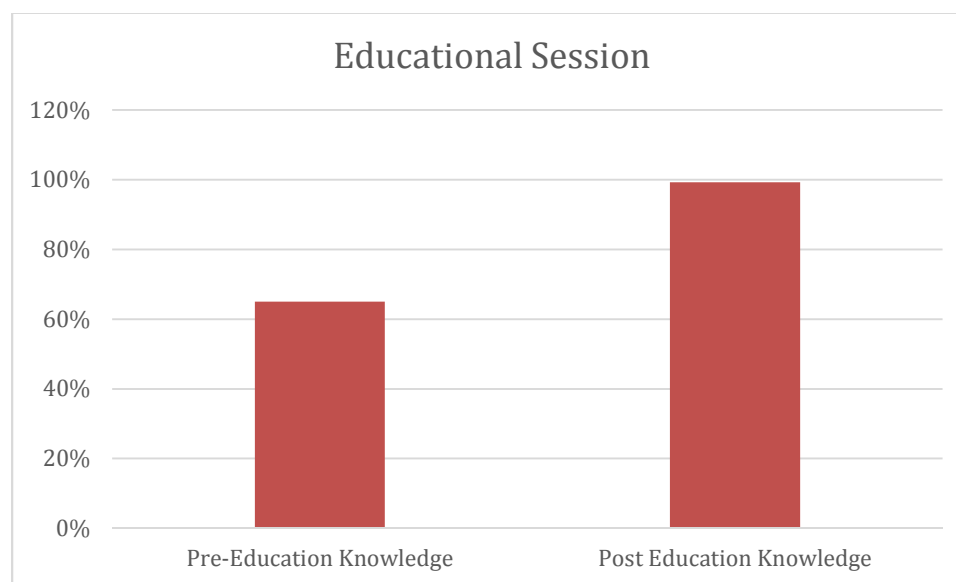


Figure 2. Comparison of pre-education knowledge and post-education knowledge

Recommendations

The STEADI toolkit is a recommended solution to address the lack of fall education knowledge gap. Appropriate user-friendly, less time consuming, evidence-based guidelines are needed in today's hectic primary care and ambulatory settings. The toolkit's guidelines have certainly paved the way for healthcare providers to follow. Using this toolkit is an effective way to increase knowledge. What is also advantageous is the fact that all the materials needed can be downloaded or printed, providers have immediate access as they are available on the CDC's website, and they are simple to comprehend. Secondly, healthcare providers can complete the modules and watch the videos at their leisure and there is no expiration date.

Following the educational session, it was also recommended that this training remains ongoing. The team responsible for nursing education will continue to develop this PowerPoint presentation to involve other disciplines, such as the certified home health aides who provide care in the patients' homes. The project also highlighted positive social change that could benefit the adult community, due to the fact that the nurses' improved knowledge will improve the quality of care provided. Team members also verbalized commitment to ongoing education and to re-vamping the falls committee. Plans were put in place to extend the project far beyond the DNP doctoral project by way of incorporating it as one of the mandatory staff orientation modules.

Contribution of the Doctoral Project Team

The doctoral project team provided support and endorsed the project by approving an extended lunch hour in order that the nurses could attend the session. Following the session, additional support was also provided by senior management to formulate a multidisciplinary falls taskforce to review future falls, amend the fall prevention policy, distribute copies of the toolkit materials, and provide education to other departments. The doctoral project team motivated the writer to develop research skills resourcefulness.

Strengths and Limitations of the Project

The strength of the project is that it can be incorporated by other clinical and non-clinical disciplines. Furthermore, the format is presented in such a way that it can be utilized by the certified nursing aides as a web based module and be very impactful. One limitation that comes to mind is the fact that team members were pressed for time, and even though they might be willing to participate, they might not be able to attend as they have to attend to patients. The study was also limited to only one education session as the facility's educational calendar was fully booked for the next 6 months. The dissemination plan and analysis of self will summarized in section 5.

Section 5: Dissemination Plan Background and Context

Analysis of Self

All research should be disseminated. It is no longer acceptable to implement a clinical change in care and not evaluate the impact of care (Curtis, Fry, Shaban and Considine, 2016). Common methods of dissemination include oral presentation, publication in a journal and the poster of a manuscript. I opted for oral presentation and used PowerPoint slides to present a poster to the major stakeholders at the practice setting. The rationale for opting for this methods was due to the physical layout and collaboration with the intended audience. As I interact on a daily basis with the nursing staff and am familiar with their preferred style of learning, I believe the oral presentation and PowerPoint slides were the most appropriate.

The findings will also be presented to the site's IRB at a later date, because as a stakeholder their input and feedback are important. Results will also be distributed to the Quality Steering Committee in order that the contents of the project can be incorporated into the training module. Following the educational presentation, management recommended that a taskforce or committee be formed to oversee the contents of this study, in order to train and mentor newly recruited colleagues. Dissemination plans include distributing the results from this project to the site's IRB as well as to senior leadership.

This writer has grown colossally as a result of this project, not just as a nurse leader, but as an advocate and a scholar. As a DNP prepared student, DNP essentials were instrumental in guiding my thought process to improve health care outcomes. It was

pleasing to note that best research evidence was used to improve practice as well as patient outcomes. New strategies and innovative ways of thinking were achieved. The DNP project enabled me to identify a healthcare problem, ascertain if the proposed change was supported by evidence-based literature and make realistic recommendations. The writer was also in a position to build up and equip nursing colleagues by introducing the materials from the CDC's STEADI Toolkit. Long-term outcomes from the project include increased nursing knowledge which will in turn decrease falls with injury and patients will be able to live safely and independently in their homes. Going forward, it would be beneficial for ongoing sessions using the educational tool to continue. The project will also be presented via a poster during orientation and annual mandatory in-services.

Summary

In summary, the study pointed out the fact that there was no protocol or clinical practice guideline in the clinic setting on fall prevention for elderly patients. Secondly, there were no handouts or materials in the clinic addressing this issue. Based on the DNP essentials, this hypothesized that if nurses were educated and had evidence-based materials readily available, the number of falls among the elderly population would decrease. One goal is to continue advocating to use evidence-based research to effect policy level change in the primary care setting.

I provided education via a PowerPoint presentation as well as using the CDC's materials. Hands-on-training and practice sessions using the 4-stage balance test and the 30-second chair stand test were also carried out. Systems used to evaluate the results

include results from the pre-test data, which revealed that nurses were lacking in knowledge in some areas. The highest score achieved was 65%. Data from the post-test revealed encouraging results, in that the nurses' knowledge significantly increased to an average of 99.25%, with the highest score of 100%. Feedback from the nurses revealed they were satisfied with the content and didn't find it overwhelming.

As a result of the project, a fall prevention committee was formulated and two fall-prevention champions were elected to spearhead future training. The staff education project fulfilled the PICOT question and met the intended goals. Therefore, the findings from this study were consistent with the writer's initial purpose and objectives.

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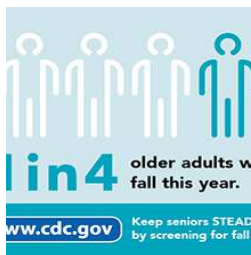
Appendix A Staff Education PowerPoint

**WHY FOCUS ON FALLS EDUCATION?**

- Falls are not an inevitable part of aging. As healthcare providers the chances of falling can be reduced by
- Identifying patients at either:
 - a. Low
 - b. Moderate or
 - c. High risk for falls
- Then offer interventions



FALL RATES



- Action needs to be taken sooner rather than later
- Falls continue to increase



EARLY IDENTIFICATION



Not all falls can be prevented but if risks are identified early injuries can be minimized



WHAT'S THE STEADI TOOLKIT?

- The STEADI Toolkit was created by the CDC and consist of 3 core elements: **Screen**, **Assess**, **Intervene**



SCREENING MEDICATIONS

- **Review medications with all patients 65 and older.**
- **Medication management can reduce interactions and side effects that may lead to falls**
- **Switch to safer alternatives**
- **Reduce medications to the lowest effective dose**



MEDICATIONS LINKED TO FALLS

Check for psychoactive medications such as:

Anticonvulsants
Benzodiazepenes
Antidepressants
Opioids
Antipsychotics
Sedative-hypnotics



MEDICATIONS TO REVIEW

Review the following:

- Prescription drugs
- Over the counter medications
- Herbal supplements



MEDICATION MANAGEMENT

- Develop an appropriate medication plan and be ready to make medication changes
- Monitor the patient for potential side effects



FUNCTIONAL ASSESSMENT

- Use this test to assess the patient's balance

ASSESSMENT

The 4-Stage Balance Test

Purpose: To assess older patients' balance.

Equipment: A stopwatch.

Directions: There are four standing positions that get progressively harder to maintain. You should alternate and demonstrate each position to the patient. They should walk to the position, hold their arms, and help them practice the correct posture, when they're clearly off balance and time how long they can maintain the position, but remind them to avoid frustration if you should lose their balance.

- If the patient can hold a position for 10 seconds without stepping back or needing support, go on to the next position.
- If not, STOP the test.

Notes: Patients should not use an assistive device to brace or walk on, and they should keep their feet close.

We thank you for your interest in the STEAP project. For a full list of funding, a list of research sites, or help, to learn how we or others can help you, please contact us at steap@cdc.gov and please include the STEAP logo in all communications.

STEAP STEAP manages risks and saves lives.

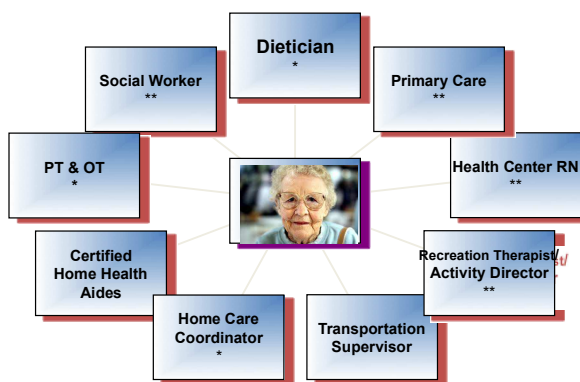


FUNCTIONAL ASSESSMENT CONTINUED

Use the 30-second chair stand test to assess the patient's leg strength and endurance



Who Should be Involved?



AVAILABLE RESOURCES

- The STEADI Toolkit walks healthcare providers through accessing a patient's fall risk
- Resources available include:
 - * Information about falls
 - * Case Studies
 - * Screening Tools
 - * Online continuing education
 - * Information on medications linked to falls
- Additional tools and resources are available from the CDC's Website: [https:// www.cdc.gov](https://www.cdc.gov).



CASE STUDY

Mr X aged 74, comes to the clinic complaining of right ankle pain. He reported while out walking he lost his balance and fell. He has a history of multiple falls and his medical history include ambulatory dysfunction, Diastolic Heart Failure, Degenerative Joint Disease, mild Depression and Gout. The triage nurse assessed him and as there was no swelling she advised him to place an ice pack on the ankle and he was sent home. Using the STEADI Toolkit what is the correct way to assess this patient?



QUESTIONS



REFERENCE

Centers for Disease Control & Prevention (2018). STEADI Toolkit.
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Appendix B Pre-test Questions

Please circle the letters that correspond to the correct answers

1. Which of the following statement is correct?
 - a. Falls are the 5th leading cause of injuries
 - b. Falls are the leading cause of injury and death in older Americans
 - c. Falls mostly occur in elderly patients who live in poverty

2. Which of the following statement is true?
 - a. A fall is an event which results in the person losing his/her balance
 - b. A fall is an event which results in a person coming to rest on the ground or another level
 - c. A fall is defined as tripping over an object

3. Which of the following is recommended to prevent falls, circle all that apply
 - a. Remove throw rugs
 - b. Remove cords and wires on the floor
 - c. Avoid floor wax
 - d. Leave items on the floor next to the bed as the patient can easily reach them
 - e. Handrails should not be installed on the stairs or handrails as they are known hazards
 - f. Install grab bars in the shower

4. An 80 year old female patient reported she fell at home last week and that she didn't sustain any injuries. She is attending the clinic for her routine appointment. The most appropriate intervention is to: Check all that apply
 - a. Take vitals
 - b. Ask if she was wearing footwear
 - c. Ask what she was doing at the time of the fall
 - d. Tell her to apply ice if she notices any swelling

5. What three steps should healthcare providers integrate into routine office visits? Check all that apply
- a. Ask the patients if they have fallen in the past year, feel unsteady, or worry about falling
 - b. Ask the patient if they have difficulty ambulating
 - c. Assess the patient's mental status
 - d. Review medication and stop, switch or reduce the dose of medications that could increase the risk of falls
 - e. Recommend vitamin D supplements
6. Risk factors for falls include? Circle all that apply
- a. Fear of falling
 - b. Previous history of falls
 - c. Previous history of CVA
 - d. Incontinence
 - e. Previous history of wandering
7. Which of the following is most appropriate to improve safety in an elderly patient with advanced dementia?
- a. Education only to the caregiver
 - b. Education to the caregiver and the nurses
 - c. Education to the home health aides
 - d. Education to the caregiver and the clinical team

Appendix C Post-test Questions

Some of the questions may have more than one correct answer. Please circle all that apply.

1. Which of the following statements is correct? Circle all that apply
 - a. More than one out of four people 65 and older fall each year
 - b. More than two out of four people 65 and older fall each year
 - c. More than one out of four people 18 and older fall each year
 - d. More than two out of four people 18 and older fall each year

2. Additional tools and resources are available on the CDC's Website related to fall screening, assessment and intervention. Is this statement true or false?

3. Which 3 questions should clinicians ask patients when they attend the clinic?
 - a. If they fell in the past year, have a history of diabetes and are worried about falling
 - b. If they fell in the past year, feel unsteady when standing or walking and have worries about falling
 - c. If they feel unsteady when standing, have fallen within 6 months and buy over the counter medications
 - d. If they have an unsteady gait, experience weakness and fall often

4. When screening for falls what should the physical exam include, circle all that apply
 - a. Medication review
 - b. Postural dizziness
 - c. Cognitive screening
 - d. Feet and footwear check
 - e. Use of mobility aids
 - f. Visual acuity check
 - g. Types of meals consumed

5. When should high risk patients be followed up?
 - a. Within 7 days
 - b. Within 14 days
 - c. Within 21 days
 - d. Within 30 days

6. Using the STEADI Algorithm which of the following tests is recommended?
 - a. 30-Second Chair Stand
 - b. 4-Stage Balance test
 - c. Timed Up & Go
 - d. Romberg Test

7. Is this statement true or false? Many patients who have fallen do not talk about it
 - a. True
 - b. False

8. Effective interventions to prevent falls include: Circle all that apply
 - a. Physical therapy
 - b. Corrective eyewear
 - c. Cataract surgery
 - d. Home modification by the occupational therapist
 - e. Vitamin D supplementation
 - f. Providing a home health aide 24 hours daily

9. Which of the following are MODIFIABLE fall risk factors?
 - a. Reviewing, or changing medications linked to falls
 - b. Recommending surgery
 - c. Transferring the patient to a nursing home
 - d. Telephone the patient daily to follow up

10. Three things that should be recommended to patients are: Check all that apply
 - a. Talk openly about falls, get an annual eye exam and remove clutter
 - b. Talk openly about falls, ambulate when they want to, get an annual eye exam

- c. Begin an exercise program, de-clutter when they have the strength, replace eyeglasses
- d. Begin an exercise program, take deep breaths, replace eyeglasses yearly

11. Medications linked to falls include: Check all that apply

- a. Anticonvulsants
- b. Opioids
- c. ACE inhibitors
- d. Benzodiazepines
- e. Antidepressants
- f. Proton pump inhibitors

12. A team-based approach working with pharmacists is recommended for the following reason:

- a. Medication review and management
- b. Correcting medication errors
- c. Reporting medication errors

13. A patient complains that his medications are making him dizzy. The most appropriate intervention is:

- a. Switch to a safer alternative
- b. Tell the patient to continue the medication regimen
- c. Tell the patient to come to the clinic when he gets dizzy
- d. Tell the patient to only take the medication at night

14. Patients with known ambulatory dysfunction should:

- a. Only ambulate when it is safe
- b. Be referred for physical therapy
- c. Only ambulate when they arrive at the clinic
- d. Be assisted with all transfers

15. According to the STEADI Toolkit why should vitamin D be recommended?

- a. To improve bone, muscle and nerve health
- b. To prevent incontinence
- c. To facilitate mobilization
- d. To prevent constipation

16. Over the counter medications linked to falls cause:
- a. Excessive bloating
 - b. Dizziness, sedation, confusion, orthostatic hypotension
 - c. Minimal discomfort
 - d. Stress