



## The Implementation of an Evidence-Based Practice Falls Prevention Program in Long-Term Care

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### Abstract

Falls in older people can cause poor quality of life and even death in residential care facilities which has raised the question if an evidence-based practice falls prevention program would have an impact on the incidence of falls and improvement in quality measures in 8 weeks using a self-efficacy scale. An eight-week pilot study was conducted on a long-term care unit in a skilled/long-term care facility to determine if the confidence and knowledge levels of nursing staff would improve after evidence-based practice fall prevention education. Data was collected using a self-efficacy scale adopted from the IOWA model. Mean confidence levels were determined pre and post survey based on the 17-item questionnaire of a participant sample of 4. Results suggested that there is significant statistical correlation between the increase in confidence and knowledge of evidence-based fall prevention and the educational intervention, but no correlation to the decrease in fall rate due to changes in decisions of recommended fall prevention interventions. It is argued that the ability to utilize recommended interventions by nursing staff would have allowed for evidence-based practice interventions to be implemented and would have had an impact on the rate of falls.

**Keywords:** Falls prevention, evidence-based practice, interventions, pilot project, long-term care, older people

### Key Practitioners Message

- Falls among older people can be life-threatening encounters.
- Healthcare workers in skilled and long-term care facilities can reduce these life threatening encounters by fall prevention programs that assist to improve the quality of care and quality of life of the older people they serve.
- This paper will identify the significance of evidence-based practice measures as it relates to falls prevention, describe the target population and proposal for a falls prevention program for a skilled/long-term care facility, theoretical framework associated with the basis of the falls prevention program, synthesis of literature, practice recommendations, project setting, the mission, vision, and objectives of the project, the project description, project evaluation and data analysis implications for nursing and healthcare, and plans for dissemination.

### The Significance of the Practice Problem

Falls in long-term/skilled care facilities can lead to major injuries and poor quality of life. Falls can also have psychological effects on older people due to having a fear of falling (Vlaeyen et al., 2015). Falls with injuries can serious consequences such as fracture which cause death in 31% of older people

in nursing facilities and about 12% have an additional fracture a year later after the initial fracture that resulted from the fall (Vlaeyen et al., 2015). Older people who suffer from fear of falling and falls suffer from poor quality of life living in fear of having a fall. Having a fall in the nursing facility associated with transportation to and from the hospital, surgical repairs of a fracture and possible

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lifelong mobility issues can be very costly to the facility as well as to the individuals' life. Falls in a nursing facility can also affect the quality of care and rating that a facility receives on a regional and national level. The quality care rating for a nursing facility is important because the ratings depict the type of care that the facility is providing to the population it serves. The higher the rating, the more likely that other healthcare entities will refer patients to that facility for care rather it be skilled or on a more permanent basis such as long-term care. When residents/patients fall in nursing facilities, this has a negative impact on the quality rating of the facility. Decreases in quality ratings can mean that the facility's ability to recruit new residents/patients can be difficult and the admissions to the facility can decrease. If this happens, then the total incoming revenue to the facility can be at a standstill or even decrease. If a skilled patient falls in the nursing facility and obtains an injury and goes back to the hospital, that individual may not return back to that same facility where the fall occurred due to a lack of quality care.

Falls in nursing facilities also pose a great risk for litigating circumstances. Falls account for 26% of nursing home litigating claims (Studdert, Spittal, Mello, O'Malley, & Stevenson, 2011). Nursing facilities who have many deficiencies are more likely to be sued often (Studdert, Spittal, Mello, O'Malley, & Stevenson, 2011). Factors that are associated with falls and litigating circumstances include fractures that resulted from falls and decreases in hours for nurses' aides (Studdert, Spittal, Mello, O'Malley, & Stevenson, 2011). These circumstances can also cause unexpected surveyor visits from regulating agencies of nursing facility operations and increase the risk of a citation if the facility fails to meet compliance in any regulated area. Falls also create other professional and legal issues such as negligence. Failure to meet the needs of a resident as well as not decreasing the risk that a patient/resident will fall can be viewed as negligence. Quality indicators can reflect negligence on the part of a facility (Studdert, Spittal, Mello, O'Malley, & Stevenson, 2011). If the quality indicators for falls are poor as evidence by an increase in falls in a nursing facility, there may be unintentional and/or

intentional negligence happening in the facility.

There is also a professional responsibility for nursing staff to do no harm to the ones they care for. This is an ethical responsibility of staff to maintain the way they care for others as to cause not harm or put the ones they care for in a harmful situation. Furthermore, falls in nursing facilities also cause stress on family members of the individual who fell. Family may have to visit other healthcare facilities if the individual had an injury related to a fall or if the individual had died as a result of a fall.

### PICOT Question

The PICOT question identified for this project is: *"For nursing staff in a long-term care setting, how will the implementation of an evidence-based practice falls prevention program influence quality measures and the incidence of falls among residents in 8 weeks?"*

The populations for the falls prevention project were nursing staff in a long-term/skilled nursing facility which includes registered nurses, licensed practical nurses, and state tested nursing assistants. The current population in the practice setting is made up of an estimated 40 full-time direct care nurses (both registered nurses and licensed practical nurses) and 75 full-time state tested nursing assistants. The sample amount for the current study includes only a portion of that population for a pilot study. The registered nurses and licensed practical nurses are individuals who complete rigorous training in the profession of nursing and are registered (RN) and/or licensed (LPN) to practice under the guideline of the state in which they have applied and completed testing at the selected states board of nursing. These individuals are responsible for data collection and observations of care, as well as the implementation of care and interventions related to the population served. The state testing nursing assistants are individuals who go through training that involves the ability to assist a patient or resident with activities of daily living that includes bathing, dressing, toileting, eating, and mobility as well as other care services and skills such as taking vital signs. These individuals then are tested and receive licensure as a state

tested nursing assistant in the state in which they have applied upon successful passing of the test. The curriculum for such is based on state guidelines, law, and requirements.

The intervention that was utilized in the selected facility was an evidence-based practice fall intervention program. This fall intervention program focused on aspects of when to perform falls risk assessments, utilization of unique patient/resident identifiers in the patient/residents' room, identifiers that can be placed on the patient/resident, frequent rounding, and resident/patient needs anticipation. The performance of falls risk assessments was intended be more than just upon admission and if a fall has occurred. Many other factors cause falls such as medications and illnesses. Therefore, it was essential to educate the utilization of the falls risk assessment on many other occasions. There were no other current resident/patient identifiers for falls risk individuals other than what is in the chart. An identifier is typical a visual notification other than the medical record of identifying someone who is a risk to fall. Therefore, implementation of such was essential to educate staff on utilization for staff that may not have accessibility to a chart at the time. The anticipation of resident needs was essential in the prevention of falls due to anticipating those needs and meeting those needs to decrease risks to falling by way of unmet needs.

The current program that the facility had implemented is a falls intervention program along with a no pass zone policy. The falls intervention program in place only conducted falls risk assessments upon admission and if a fall occurs. Interventions were then put in place upon scoring of the initial falls assessment as well as if an additional assessment was conducted as a result of the fall. The no pass zone is a fairly new policy that was put in place as a result of a recent surveyor visit and not as a result of frequent falls but has been utilized to assist in decreasing falls in the facility. The no pass zone policy that the facility has in place was intended for all staff regardless of discipline to answer a call light if they are in an area where a call light is ringing. If the need can be met, the staff member was to provide assistance. If the need is to be met

by another staff member, the staff who responded to the call light is to leave the light on and notify the staff member who is able to provide such assistance. There had not been any in-facility data to determine if this new policy had been effective or not.

The outcome of the project was to increase confidence levels of nursing staff, decrease falls and improve in quality measures. The interventions that were put into place aimed to decrease the number of falls by more frequent assessments of falls risks given risk factors that may present with a possibility that one may fall such as a change in a cardiac medication. As a result, frequent falls risk assessments should trigger interventions to care plans that will improve care being provided when a risk to fall is suspected and the interventions to decrease such risks to be implemented in the patients/residents care plan.

The timing for this project was 8 weeks. The study was a pilot study in which meant that the study was conducted on one unit in the facility to determine if any improvements in care and decrease in falls were obtained. This study was also be feasible due to the facility's support and desire to increase quality care, improvements in falls quality scores, and over improvement in the quality of life for the residents/patients that are served.

### **Theoretical Framework**

The change model that was appropriate for this project was Lewin's theory of change. This social theory was selected as a framework for this project because each stage of the theory represents how changes affect organizations' barriers to changes and success to implementation (Sutherland, 2013). Oppositions to change in this theory are considered to be static forces as they are forces that work against the change (Sutherland, 2013). The factors that drive the change considered to be driving forces which assist to promote and move the change initiative along (Sutherland, 2013). The three stages to Lewin's theory are unfreezing, moving, and refreezing. The unfreezing stage will allow the driving forces to become strong while decreasing the effects of the static forces. The mo-

ving stage will allow for the change to take place. The refreezing stage will allow the changes made to be evaluated for the effectiveness on practice. As a result of this theory utilization, aspects of the Plan -Do-Study-Act-Cycle was also be implemented since this is a quality improvement project. During the planning phase, the goals of the project were be determined as well as the predictions. The "Do" phase was the actual implementation of the project, the observations of problems and the initiation of data analysis (IHI, 2017). The "study" phase was the completion of data analysis and comparison of data to the hypothesis, and the summation and reflection of the project. The "act" phase entailed determining what changes should be made and plans to make those changes and any plans to test the new recommended changes. This quality improvement model assisted in determining the effectiveness of the project with any recommendations in order to consider additional changes that will need to be made in order to be successful in improving quality of care for falls.

The mission of the project was to continuously use evidence-based practice knowledge and improve falls prevention and risk reduction on an ongoing basis to provide quality care, therefore it will be essential to make a plan for the change, implement or act on the change, and then study it to see the effects the change will have on the population in order to look for continuous improvements in providing quality care. The change that took place was an organizational change; therefore as an organization, it is essential to continually look at processes and way to improve care on a continuous basis.

### Synthesis of the Literature

A review of the literature suggests that fall prevention programs help to reduce falls in nursing facilities and help to deliver quality care to the served population. Literature also suggests that staff lack the appropriate evidence-based knowledge to make appropriate falls prevention implementations. Jackson (2016) conducted a study on multi-interventional protocols for falls reduction in long-term care facilities in which it was predicted that interventional protocols would reduce the

number of falls. This study proved that there is a significance decrease in the rates of falls if implemented over a 4 month period. The staff members also increased their knowledge of evidence-based practice by twenty percent. This study also supports the proposed falls program for the current facility due to the similar nature of providing staff with knowledge on evidence-based practice to improve quality care. This study also considers the joint responsibility of nursing leaders and staff to foster improvement in the quality of care.

This study correlates to a study conducted by Rojas-Fernandez, Seymour, and Brown (2014) on the use of algorithms to increase the number of fall-related medication changes due to the nature to provide staff will a tool to use to improve quality of care. This study focuses on the pharmacist to use the tool to prompt medication changes, however, this tool can also be utilized to provide nurses with the autonomy to conduct a falls risk assessment and make recommendations to the primary care physician and pharmacist to review and change medications that can cause potential falls if the medication is not medically indicated or if a substitute with less side effects is available. Even though further research may be needed to test the algorithm, algorithms can be used to guide practice thinking to make more appropriate informed decisions about care.

A study conducted by Nitz, Cyarto, Andrews, Fernan, Haines, Haralambous, Hill, Hunt, Lea, Morre, Renehan, & Robinson (2012) on the implementation of an evidence-based falls prevention program in a residential aged care facility proved that evidence-based practice falls prevention programs with specific interventions decrease the number of fallers in such facilities. This study correlates with a study conducted by Jackson (2012) because both studies encompassed interventional methods that were based on evidence-based practice focus and knowledge. The significance of the Nitz and her colleagues (2012) study proved to be relevant by identifying that trends for fewer falls should be sustained and that this should be the goal of evidence-based fall prevention programs in residential aged care facilities.

Urquhart Wilbert (2013) concluded in a study that medications and diagnosis were the cause of many falls. This correlates with Rojas-Fernandez, Seymour, and Brown (2014) in an aspect that the use of algorithms will help to decrease falls related to medications. Since Urquhart Wilbert (2013) came to that conclusion, inferences can be made that will suggest that due to the medications causing many falls, the use of an algorithm as suggested by Rojas-Fernandez, Seymour, and Brown (2014) would be appropriate. These studies support the current evidence-based falls prevention program/project due to the realization of medications and diagnosis as potential factors for falls thus inferring that falls risk assessments should be performed as a result of changes in medications as well as a specific diagnosis that would cause an individual to be at a risk to fall.

Batra, Page, Melchior, Seff, Vieira, and Palme (2013) addresses the psychological affects that falls have on older people in their study conducted on completion of falls prevention programs to decrease falls and fear of falling. Falls can cause psychological fear that the individual may fall again, however, according to Batra and her colleagues (2013) completion of such falls prevention programs can help to decrease attrition and increase benefits of cost and program effectiveness. Therefore, the psychological affects that falls have on older people can be reduced through compliance in a falls prevention program; however, social factors may determine the completion of such a program.

Faraq, Howard, Ferreira, and Sherrington (2015) conducted a study that determined that falls prevention programs should be considered as a cost-effective option that will allow access to a variety of intervention methods. This correlates with the study conducted by Batra and her colleagues (2013) which also determined that fall prevention programs are cost-effective. The relationship between these two studies can infer that fall prevention programs are considered to be cost-effective and the opportunity to utilize a variety of intervention can be considered as ideal. The basis of the interventions should include methods proved to be effective by way of evidence-based practice.

A study conducted by Johansson, Borell, and Jonsson (2014) concluded that falls prevention programs can be utilized as a model for other programs that are focused on being client-centered. The study also revealed that staff is challenged in their professional roles when the interventions are more so client-centered. As a result, a guided approach should be utilized when implementing interventions that are client-centered. This study gives insight to the current project that it may be a challenge for staff to implement some of the interventions such as the additional falls risk assessment based on medications or diagnosis because these are interventions that are centered around what the resident/patient currently has going on at the time of the assessment. This would also increase the amount of falls assessments and interventions that would be put in place for residents/patients and the staff who are responsible for the implementation of such. Therefore, time management and critical thinking abilities would be challenging for the staff. Furthermore, in correlation with Lewin's change model theory, this study revealed that impacts to changes would be made over time, which correlates to the refreezing stage in which staff would have to continue to practice under the new changes and adapt to the change. In return, an inference can be made that the change has impacted practice over time.

According to Hass, Mason, and Haines (2014) guided approaches should be used for goal setting and the implementation of training and follow-up support in regards to goal setting should be utilized to promote behavioral change for falls prevention. The main concept of this study can be inferred to determine that goals for falls programs should be guided. The guidance of the goals for fall prevention programs correlates to the ideals of using algorithms which can guide critical thinking and interventional approach to individuals at risk to fall. For the purpose of the current project, guidance to goals will be utilized during the implementation phase of the project which includes the educational in-services using evidence-based practice as a guide for the goals of the falls prevention program.

According to Hang, Francis-Coad, Burro, Nobre, and Hill (2016) education and training should be provided in order to implement falls prevention programs. This also correlates the Hass, Mason, and Haines (2014) due to the ideals that the goal setting for falls prevention programs should be guided for purposes of goal setting. Hang, Francis-Coad, Burro, Nobre, and Hill (2016) noted that residential aged care workers have low levels of evidence-based knowledge in regards to falls prevention. Therefore, as a result of the lack of knowledge, goals for such a fall prevention program should be guided as references by Hass, Mason, and Haines (2014).

Education on evidence-based practice falls prevention program can also serve as motivation to staff who lack the knowledge as it can be inferred that it is seen as a sense of empowerment to utilize the newly gained knowledge in practice and provide an improved degree of care amongst those served in a nursing facility.

Furthermore, Heinrich, Rapp, Stuhldreher, Rissman, Becker, and Konid (2013) suggests that the ultimate decision on cost-effectiveness on a falls prevention program is dependent upon the amount that the decision maker is willing to spend on such a program. According to a study conducted by Heinrich and his colleagues (2013) on determining if a multifactorial fall prevention program will be cost effective in a nursing home revealed that there is a cost-effective probability rate of 83%. However, this may be over the time period of a year. This takes into consideration the costs analysis of falls with an injury that lead to fractures, which can be very costly in terms of hospital stays, surgeries, litigations, and even death. Therefore, the amount and time it takes to reveal cost savings may prove to be effective versus the amount that was spent to implement the program. This also correlates with studies conducted by Batra and her colleagues (2013) and Farraq, Howard, Ferreira, and Sherrington (2015) which both came to the inference that fall prevention programs are considered cost-effective, especially when costs associated with one fall are taken into consideration.

## Practice Recommendations

Based on a review of literature and recommendations, the practice recommendation was to utilize a falls prevention program to decrease falls. A review of ten studies indicated a common theme that staff in nursing home facilities has a lack of knowledge and ability to assess falls in older people which can result in behaviors that do not reflect falls prevention knowledge. Therefore, this evidence substantiated the need for falls prevention education and evidence-based intervention to decrease falls in long-term/skilled care facilities. The recommendation was to educate and train staff on evidence-based practice related falls prevention as well as use a resident/patient-centered care from a multidisciplinary approach which should serve to be cost-effective. These practice changes included in-service education on falls, situations that would prompt a falls assessment, anticipation of resident/patients' needs and identification of residents/patients' that falls risk.

The in-service education on falls included reasons why an individual would fall as well as situations in which a falls risk assessment should be completed such as cardiac or psychotropic medication changes as well as sudden weakness in mobility and newly acquired acute illnesses. These additional situations would supplement the current practice which conducts falls assessment upon admission, history, and if a new fall had occurred. The in-service also served to educate staff on anticipated needs of residents/patients. This identified that during the times that falls occur the most, and the situations that the fall was based on, determined the need to intervene and provide the anticipated need in order to prevent the fall. Therefore, if the staff member can anticipate what the resident/patient will need, then they provided that service for them to meet that need in order to prevent the fall.

The identification of residents/patients was currently in a computerized medical record system. The recommendation to have physical identifiers was recommended so that staff can immediately prioritize the ability to meet a need if the individual is a high risk for falls. This also assists in alerting non-clinical staff to intervene for a non-medical need such as picking the remote off the floor for a resident/patient to help reduce their risk to fall.

## Project Setting

The setting of the falls prevention project took place in a 247-bed skilled nursing and long-term care facility. This is a Jewish facility which takes care of residents and patients on a tertiary level. These residents have co-morbidities and illnesses which prevent them from living in the community on their own and the facility provides all of the care for the resident. The typical resident in this facility is on average 75 to 80 years old with a mix of male and female gender. The mission of this facility was to provide care for the aged in the community. It was originally meant to provide care for the Jewish aging community but then opened later to provide services for all older people in the community. The organizational structure starts with a president of the company, an administrator/ vice president, and assistant administrator. There was also a director of nursing along with nursing administration and administrative staff. Finally, there was direct care and frontline staff. The organizational culture was reactive in the sense that education and changes were made as a result of something that had happened. The intention of this project was to attempt to promote education and interventions that are more proactive as a part of the implementation of this project.

The organizational need was identified as a result of a recent increase in the number of falls and the decrease in quality measures as presented in a quality meeting after review of recent star quality measures on a regional level. The dialogue was

conducted by the pilot project manager with the director of nursing and the director of staff development in regards to some of the biggest improvement that can be made to increase star quality rating and falls was on the top of the list. The facility had an intervention policy but did not have a falls prevention program. This was considered the problem trigger.

The stakeholders that were impacted by the change were the residents because it was intended for them to have fewer falls, the staff because they were to manage the falls through implementation, and administrative nursing and administrative staff because they were to report improvements in this area of quality to improve star ratings. The organization was in support of this project because it was intended help to decrease falls and help to improve quality care for residents. The project was intended to assist in improving quality star ratings for the facility. Support for the project was confirmed through dialogue with the director of staff development and director of nursing in terms of how the program can improve the current practice of falls assessments and preventions which can improve the quality of care for the residents.

The strengths, weaknesses, opportunities, and threats to this project had determined the success and outcomes (see Table-1). The internal force which is the project and the strengths that are presented based on literature include; decreases in falls, improvement in quality care, improvement in residents' needs, and increase in staff's knowled-

**Table-1:** The SWOT (strengths, weaknesses, opportunities, and threats) helped to identify the barriers and strengths associated with the fall prevention program

Internal Forces (Project)	External Forces (Organization or Environment)
<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>- Decrease in falls incidents</li> <li>- Improvement in quality resident care</li> <li>- Improvement in awareness of resident need and adherence to resident rights</li> <li>- Improvement in staff knowledge of falls risk reduction</li> <li>- Administration approval of the project</li> </ul>	<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>- Improvement in the quality star rating</li> <li>- Clearer environmental paths for residents</li> <li>- Resident needs met</li> <li>- Improvement in quality care</li> </ul>
<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>- Staff compliance</li> <li>- Staff accountability</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>- Staffing under budget</li> <li>- Staff not coming to work</li> </ul>

ge of evidence-based practice. The facility's support was also a strength. The weaknesses, which are also internal, to this project lie within the target populations' ability to be compliant and accountable to interventions and educational in-services provided as it relates to aspect presented from the project. The opportunities, which are external forces, include; improvements in quality care and star ratings, clearer environmental paths for residents, and improvements in meeting residents' needs. The threats to this project were staffing under budget due to staff terminations and staff calling off for their shifts. This is a threat because the interventions were not executed to the full extent due to the lack of staff available to execute them. The risk of this project was that results may not be seen in the 8-week pilot and the facility may want to discontinue the project. Unintended consequences included that staff may not get breaks as intended if they are operating under budget staffing wise on the units and the intended interventions may not be executed as a result. This practice change must be sustained after completion because if ongoing, it can continually reduce fall risk and rates as evidenced by literature. The dialogue between nursing administration and the project manager was conducted to determine future plans for intervention implementation as recommended during the evidence-based practice educational sessions in order to sustain the practice change. It was imperative that the administrative stakeholders hold direct care staff accountable to continue with the implementation of the program, which was also discussed with nursing administration and project manager.

### **Project Vision, Mission, and Objectives**

The vision of this project is to improve current practice initiatives to reduce falls and risk to fall in order to provide quality care to the population served. The mission statement of this project is to continually implement improvements in current practice by way of gaining evidence-based best practices knowledge and utilizing that knowledge to implement best practice interventions related to falls prevention in order to continually provide quality care. The mission of the organization is to

provide care for those aging in the community who can no longer care for themselves. The vision and mission of the project is an extension and elaboration of the basic mission statement of the facility. Providing quality care with the utilization of evidence-based knowledge and practice as it relates to falls with the continuous implementation to evidence-based practice intervention assist to serve the facility's mission by providing care to the aging community. The mission of the project goes to the extent at which care for the aging community is being provided.

At the completion of the 8-week pilot project on falls prevention, it was anticipated that there will be a 10% percent reduction in falls for the pilot unit and a 50% increase in compliance with falls prevention implementation and evidence-based knowledge of staff related to fall prevention. The long-term objective of this falls prevention program was to have an 80% reduction in falls for the facility and an 80% increase in compliance with falls prevention implementation and evidence-based knowledge of staff related to falls prevention within 8 months. The potential risk that was anticipated was to have a poor outcome for the project is the risk of the pilot unit being understaffed to fully carry out the project implementation during the 8 weeks. Understaffing can be due to a variety of situations such as calls off terminations or operating under budget. Another risk was that staff may not attend the in-services if they were not mandatory.

### **Project Description**

The change model that was selected for this project was Lewin's theory of change. This model was selected because it facilitated the organizational changes in three phases: unfreezing, moving, and refreezing. Each phase of this model represented the phases of the project that the organization encounters in order to facilitate such a change. The quality improvement model that was selected was the Plan-Do-Study-Act model. This model was selected because it is a model that is focused on improving quality initiatives. This model also is supportive of evidence-based practice and this project

because the phases in each part of the model serve to execute the project through planning, executing interventions, observing the project and making recommendations based on the findings in order to improve practice based on the outcomes and evaluations of the project. The planning phase and unfreezing phase of the project was conducted prior to the start of the implementation. The project was implemented over the course of 8 weeks and was a pilot project on one long-term care unit.

**Week-1**

During the first week, implementation of the self-efficacy survey was conducted. The self-efficacy survey was adapted from Iowa University and was a survey that measures the self-confidence of nursing staff in relation to evidence-based practice knowledge. This was selected because it was to serve as the pre-questionnaire that determined the amount of evidence-based knowledge that staff had prior to the introduction of the falls prevention program education. This was also the initiation of the moving phase of Lewin’s change theory and the “DO” phase of the PDSA quality care model.

**Week-2**

During the second week, the pre-self efficacy survey continued as well as plans for holding educa-

tional sessions was determined. Staff education was initiated as well. Education included reasons for falls risk assessment to include medication changes and acute illnesses, which were beyond the current policy implementations of upon admission and if there is a new fall. This also included education on recommended interventions such as meeting anticipated needs and visible patient identifiers such as a star that will be placed in the residents’ room, wheelchair, and/or walker that will represent falls as a reflection of a falling star, as well as placing yellow socks on the residents’ feet that are fall risks.

**Weeks 3, -4, -5, -6, -7**

During weeks 3-7, educational sessions continued for interested participants as well as audits for recommended interventions based off of the evidenced-based practice falls prevention on the unit. The checklist/audit tool (see Table-2) was used for the unit to make sure that falls assessments were conducted for specific situations for residents, if anyone was added as a falls risk as a result of the recommended falls prevention risk assessment education, if the residents had the stars in the room, and if the residents were wearing the yellow socks. These audits were conducted 3 times a week for weeks 3-7.

**Table-2:** The intervention compliance audit tool checklist\*

Resident on Falls prevention program**	Does resident have yellow socks on?	Does resident have star posted in the room and on adaptive mobility equipment?	Date of last fall’s risk assessment and indicator for falls risk assessment?	Comments
A1	Y	Y	9/2016 admission 8/2016 admission	
B2	N	Y	2/10/17 medication change	RR1, placed yellow socks on B2
C3	N	Y	1/1/2017 admission	
D4	Y	Y		
E5	Y	Y		
F6	Y	Y		
G7	N	Y		

Note-1: \* = This is the intervention compliance audit tool checklist. The values above are only examples to depict how the audit tool/checklist was filled out when conducting the audits.

Note-2: \*\* = Identified by a letter and number, i.e. A1: If a new resident, date added must be under identification.

## Week-8

During Week 8 the distribution of the post-survey to the unit as well as the evaluation of the study took place. The number of falls was tallied and compared to the previous 2 months of falls to determine if a reduction was identified. This was also a part of the "study" phase of the quality model, which served to observe what had happened during the study and recommendation. The results of the study were shared with the participants of the study as well as nursing administration, and the "act" phase of the quality model was implemented. The facility was given the opportunity to make a determination if they were going to adopt the evidence-based practice falls prevention program based on recommendations or if they were going to reject it. This was also where the organization entered into the refreezing stage of Lewin's change theory in which they were in the process of determining to adopt the program and accept it as the new way of practice, or reject it, which means that the series of the change theory would then start over and the quality model would also start over with a plan to implement additional interventions based on what did not work. The facility had decided to make a decision on sustainability and did not make a decision.

## Barriers

Barriers encountered during the project were a small number of participants who completed all three phases of the project due to challenges with staffing on the unit. There were participants who completed one or two portions of the project but did not complete all three. Other barriers encountered were small numbers of participants who came to the educational sessions due to challenges with workload during patient care. Educational sessions were offered around times that were not as busy for staff; however, attendance was still low. Additional barriers were that since this was voluntary participation, staff did not express much interest to come to the educational sessions even though they may have participated in the pre-survey due to challenged staffing which may have deterred their desire to participate fully in the study.

## Resources and Financial Support

The resources that were needed for this project was nursing staff on the specified unit which includes; 13 state tested nursing assistants, and 7 nurses (a combination of registered nurses and licensed practical nurses). Materials needed for this project included colored paper, lamination sheets, scissors, tape, copy paper, and yellow socks. The needed financial support were designated staffing ratios and support for the ordering of yellow socks for falls program residents as well as supplies needed to make the icons for individuals who were on the falls program. The budget for staff varied due to differing pay rates that were not disclosed, so the expenses for staff were estimated. However, the costs for supplies were because some of the supplies were already at the facility. As a result of the expenses and revenue, the cost of this project was estimated to be about 15% of the revenue for the unit (see [Table-3](#)). This estimate was determined as reimbursement rates vary due to MDS scoring and reimbursement rates for federally funded programs as well as private pay residents. The cost and expense were just for one unit. The role that this author took in this project was the project manager in which this author conducted the pre and post surveys, the initial education, creation of identifiers, the unit audits as well as dissemination of results to the participants and planning. This author led this project with the assistance of the facility staff development department, in which they served as a consult for setting up educational sessions, helping to present education and plans for policy change. The ordering of the socks was referred to the central supply department. This author collaborated with the selected units' nurse manager in order to deliver education to as many staff as possible as well as serve as a consultant to the nurse manager. This author attended many quality improvement meetings in which aspects of the project was shared each week in which this author served as a consultant for many quality projects that relate to falls in different aspects such as assisting with the new implementation of an electronic medical record and appropriate assessment and documentation templates for that system.

### Project Evaluation Results

The facility did not require an internal review board process to take place, but they were in full support of the project. However, Chamberlain College of Nursing did require an IRB process to take place which was completed prior to implementation. The IRB process identified human subjects as test subjects in regards to the protection of ethical considerations as well as medical information. The intervention utilized in this project served to promote improvements in quality care and decrease the likelihood that falls should occur. The participants selected were unit based and were on one of the four long-term care units in the facility. Inclusion criteria were nursing staff that included all registered nurses, licensed practical nurses, state tested nursing assistants, and nurse managers

who were on the selected unit and who were regular staff (full-time and part-time). The exclusion criteria were any nursing staffs that were not directly employed by the facility (agency) and who were not regularly scheduled nursing staff (prn-as needed). The type of data criteria that was utilized was the number of falls that occurred as compared to the number of falls for the specified unit prior to the implementation of the project as well as the results of the pre and post falls knowledge-based questionnaire. The knowledge of falls before and after the intervention and education was compared to see if the interventions and education gathered from the in-service helped to produce a change in practice to decrease falls. The tool that was used to evaluate the outcome was the Nursing Evidence-Based Practice Self-Efficacy Scale adopted from the IOWA model. The data collected was

**Table-3:** Budget

Expenses		Revenue
Direct		Billing 48 residents on the unit with average cost at \$7,000 a month X 1 months = \$336,000 + 1 week at \$84,000 = \$420,000
Salary and benefits -varies due to varying salaries	\$64,400	Grants
Estimate salary for 13 stna's full time: \$10.50hr X 40hrs X 5weeks = \$27,300		
Nurses (RN,LPN) for 7 full time: \$26.50hr X 40hrs X 5weeks = \$37,100)		
Supplies	\$73.00	Institutional budget support
Copy paper 1 pack (2.00)		
Scissor 1 pair (0.00 already have on hand)		
Lamination paper 1 pack (4.00)		
Colored paper 1 pack (3.00)		
Tape 2 rolls (2.00)		
Yellow socks 1 pair @ 2.00 per pair (estimate 10 residents on unit at risk for falls with each resident getting 3 pairs of socks a piece =\$60.00)		
Services		
Statistician	0	
Indirect	0	
Overhead	0	
Total Expenses	\$64,473	Total Revenue
Net Balance		\$420,000
		\$355,527

pre-intervention and education implementation, and post-intervention and education implementation to see if the self-efficacy of the staff had improved as it related to fall prevention. According to a study conducted by Tucker, Olsen, and Frusti (2009) on the preliminary reliability of the self-efficacy scale, the tool had proved to be reliable and valid for evidence-based practice implementation, however, may need to be used on a larger number of small groups. Therefore, this tool was used for the pilot study of one unit with future anticipation to utilize for other units upon decisions from the facility to further expand the study. In determining the progress of utilizing recommended interventions, audits were performed three times a week to determine if the recommended interventions were being put in place and if the staff participated in the intervention plan (see Table-2).

standard deviation of the responses that the staff members would be responding to on the scale. A paired t-test was also conducted to determine statistical significance. From these results, it was determined what the average staff member knew about falls prevention prior to implementation and after as well as the significance of the educational intervention. Extraneous variables were controlled by only using the data obtained from participants who complete the pre-survey, education, and post-survey. The audit tools served to identify if the recommended interventions were being implemented. Residents on the audit tool were identified with a letter and number so that their identity would not be revealed. Staffs who were participants in the study had a double letter and number assigned. The assigning of a let-

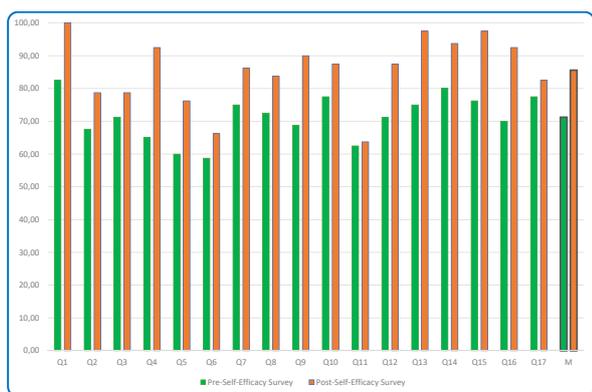
**Table-4:** The mean response for the self-efficacy survey data (N = 17)

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	M	SD	SEM
Pre-self-efficacy survey mean responses (March and April)																			
82.50	67.50	71.25	65	60	58.75	75	72.50	68.75	77.50	62.50	71.25	75	80	76.25	70	77.50	71.25	6.88	1.67
Post-self-efficacy survey mean responses (May and June)																			
100	78.75	78.75	92.50	76.25	66.25	86.25	83.75	90	87.50	63.75	87.50	97.50	93.75	97.50	92.50	82.50	85.59	10.38	2.52

Note-1: N demonstrates the number of items on the survey and Q shows the question number.

Note-2: M = Overall mean, SD = Overall standard deviation, SEM = Overall standard error of mean

Note-3: The difference in overall mean responses was -14.34. There was a 14.34% increase in Overall Confidence of evidence-based practice as it relates to falls prevention as a result of the educational intervention; however, the amount of falls did not decrease. The two-tailed t-test value resulted in  $p = .0001$ , which represent a statistical significance.



**Figure-1:** Mean Response for each item of Pre-/Post-S

The data that was produced by the self-efficacy scale was interval data. The type of data that was gathered was the mean, average mean, and

ter and numbers to particular staff and residents on the falls program served to protect the identity and health information of the resident as well as the identity of the staff.

The number of falls that took place before and during the project was determined through secondary data from quarterly reports. The data prior to the initiation of the project was from March and April of 2017 and included a total number of 17 total falls for the pilot unit. The data from the initiation of the project which was from May and June 2017 and included a total number of 18 falls for the pilot unit. There were a total of four participants who completed all 3 parts of the pilot project in which the pre and post-self-efficacy scales

were compared to determine significance in education and falls correlation. This data was based on the self-efficacy questionnaire. Knowledge of falls prevention and confidence for the pre-survey was gathered first. Then the educational session was provided. Towards the end of the pilot study, the post-test was conducted to determine if confidence levels had changed as a result of the falls prevention program intervention. The average mean of the pre-self-efficacy survey was 71.25% for all participants and the average mean for the post-self-efficacy survey was 85.59% for all participants (see Table-4, Figure-1). There was a 14.34% increase in confidence and knowledge of evidence-based practice in relation to falls prevention as a result of the educational intervention. The paired t-test calculation showed a two-tailed p-value of less than .0001 which by normal distribution is interpreted to be extremely statistically significant which means that the projected outcome was supported in terms of increasing confidence levels of staff; however, this did not have an effect on the rates of falls. During the audits, it was identified that staff members were not utilizing the star identifiers in the resident room's particularly due changes in position on the decision to utilize these identifiers by nursing administration. However, the uses of yellow socks were utilized. Due to the preferences of the residents, all did not wear the yellow socks. Staff who participated in the study utilized the anticipated needs of the residents to provide care to prevent falls per verbal report. Falls risk assessments would have been conducted more often, yet there were a small number of nurses who participated in the study and not many changes occurred in the 8 weeks the study was conducted. The falls rates compared to the rate of confidence increase did not have any correlation with each other which could have been caused by a small sample number and changes in decisions to recommended interventions.

### **Discussion and Implications for Nursing and Healthcare**

The initial question that was tested was to see of an evidence-based practice falls prevention program would decrease falls and improve qu-

ality measures in 8 weeks. It was hypothesized that the evidence-based practice falls prevention program would decrease falls and improve quality measures. Based on data collected from the falls prevention pilot study, it can be inferred that the evidence-based practice falls prevention educational intervention improved the confidence and knowledge levels of the staff but did not have a direct effect on the rate of falls. The outcome of the study was to decrease the rate of falls, improve quality measures and improve the confidence of nursing staff in evidence-based practice falls prevention. The data presented a positive correlation between the pre and post survey in relation to the educational intervention. The educational intervention yielded a 14.34% increase in confidence in evidence-based practice falls prevention which means that staff are more confident in their ability to utilize best practices for falls prevention. Limitations to the study include minimal adherence to falls prevention intervention recommendations as presented in the educational sessions due to challenges and changes in the decisions of nursing administration. The validity of the data gathered from the study was limited due to a small number of participants in the study. If there were more participants as well as the implementation of the recommended interventions, then results for the study may have shown a correlation between the confidence of the staff and the rate of falls.

This project can be applied to other long-term care settings as well as residential care facilities such as assisted living for older people. The interventions utilized in this project yielded increases in staff knowledge and confidence which has a positive effect on practice behavior changes that can decrease the likelihood of a fall occurring. Such implication should be facilitated through quality improvement programs in long-term care and residential care facilities. As a result of this project, it is recommended that an increasing number of participants are utilized to validate the results. It is also recommended that if this project will be utilized in another setting, nursing administrative staff should set clear decisions about utilization of any interventions that are recommended to decrease falls risk in order to allow staff to use any enhan-

ced knowledge of evidence-based practice falls prevention derived from the project intervention, as a way to practice on a higher level. Further steps for this project entails, extending the falls prevention program to other long-term care units in the current facility in order to expand the number of participants in the study as well as seek further decisions on the use of recommended interventions for falls prevention in order to determine a correlation between evidence-based practice falls prevention knowledge and the number of falls.

### Dissemination

The information was presented during a falls meeting. The previous trend of the previous falls intervention was compared to results and implementations in the change project. The final outcome of the project change was reviewed and then presented with recommendations and consultation on a proposed policy as a result of the project. During the project, the recommended interventions discussed during the educational sessions were not all implemented due to a change in a decision with the director of nursing. Therefore, the recommendation for interventions was still in the process of determination as is the sustainability. The director had concerns about thoughts and views of state surveyors and identifying residents who are falls risk in which initial recommendations were made to discreetly place identifier in rooms and utilize yellow socks.

### Summary and Conclusion

In conclusion, falls are a danger to the lives of older people in long-term/skilled nursing facilities. Falls can cause injury which can conclude to death and poor quality of life. Older people in long-term/skilled nursing facilities can benefit and improve quality of life through improvements in quality of care by way of evidence-based practice falls prevention programs. The falls prevention program was conducted to address the significant problem of falls amongst older people in such facilities to improve current practice methods and improve knowledge and practice in order to support quality of care and improve quality of life for

the older people served. This falls prevention program was developed through a rigorous search of evidence-based practice literature and recommendations with the common theme being to educate staff on evidence practice knowledge on falls prevention utilizing a resident/patient-centered approach. This paper has described in detail the implementation of an evidence-based practice falls prevention program utilizing Lewin's theory of change and the Plan-Do-Study-Act quality improvement models; as well as practice recommendations, the setting for the project, the mission, vision, and goals; the project description, evaluation, implications, and dissemination. Therefore, the ability to promote and actuate a practice change that will improve the quality of care and influence quality measures was presented.

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