Preventing Falls in Older Adults: A SAFE Approach

(Seniors Against Falls Everyday)

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April 25, 2021

Notes from the Author

A sincere thank you to the instructors of East Carolina University for the time you have invested in the future of others and me. You have guided me on this DNP journey with kindness and compassion and I will be forever grateful. A special thank you to Dr. Janet Tillman and Dr. Courtney Caiola for the hours you have invested in assisting and coaching me with this project. I appreciate my site champions, Lynn, Dorothy, and Sandy, for helping to coordinate workshops and for believing in my passion for fall prevention.

I dedicate this paper to my grandmother, parents, children, and brother. You have been in my corner since day one! You have been patient, encouraging, always believed in me, and have been my biggest cheerleaders. I am truly blessed beyond measure. Through Christ, all things are possible!

PREVENTING FALLS IN OLDER ADULTS: A SAFE APPROACH

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Abstract

In 2019, the Center for Disease and Prevention (CDC) reported that one in four older adults suffer from a fall every year in the United States. A literature review revealed that the majority of fall prevention takes place post fall in the acute care or post-acute care settings through skilled care or home health services. No best practice guidelines were found addressing public health safety awareness, however the STEAI Initiative formed by the CDC was an effort to prevent falls through the primary care provider. Materials from the STEADI Initiative were utilized to create a fall prevention program titled, Preventing Falls in Older Adults: A SAFE (Seniors Against Falls Everyday) Approach, for the public health setting. This program, A SAFE Approach, was developed and implemented in three community-based organizations. Educational workshops were held for each location and included performing a personal fall safety assessment, interactive discussion on fall prevention behaviors, and provision of a home safety checklist. Seventy-one (N=71) participants attended the workshops and results revealed that the majority of participants were willing to modify current behaviors and understood the benefits of behavior modification. The lack of research for primary fall prevention indicates the need for more research and program implementation in the public health setting.

Keywords: fall prevention, reducing falls, fall safety

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Section I. Introduction

Background

Falls in older adults (ages 65 or older) can have a significant impact on the quality of life, affecting independence and normal activities of daily living (Ciance, 2017). Falls can lead to social isolation, which is a public health concern (Sarmiento & Lee, 2017). In 2019, the CDC reported that one in four older adults suffer from a fall every year (CDC, 2019). In 2015, over 28,000 older adults died in relation to a fall-related accident (CDC, 2019). The average cost for these types of falls is greater than \$30,000 per hospitalization (CDC, 2019). Fortunately, research evidence suggests there are modifiable risk factors such as home safety, exercise, blood pressure management, medication adjustments, visual impairments, and wearing proper footwear (Rueben et al., 2017).

This Doctor of Nursing (DNP) project titled, Preventing Falls in Older Adults: A SAFE (Seniors Against Falls Everyday) Approach was implemented in three community-based organizations. The first two sites were faith-based organizations, and the third site was a community center. All three sites were located in central North Carolina. Each site had a shared interest in raising safety awareness and implementing safety prevention strategies among the older adult community and their current members.

Organizational Needs Statement

In central North Carolina, there are several retirement communities in which local organizations and community services cater to the older adult population. The community center is an example of such an organization and provides many resources for seniors to keep them informed and involved within the community. The community center mission statement is "to provide services that promote the well-being of older adults" (

2020). Both faith-based organizations partnered with for this project have active senior groups that hold regular meetings for fellowship, activities, and information sharing aimed at promoting the well-being of their older adult congregations. The sites involved in this project had each identified a Site Champion and the need to increase safety awareness and fall prevention in this older adult population.

One of the goals of Healthy People 2020 is to prevent an increase in fall-related deaths in adults 65 years of age and older (Office of Disease Prevention and Health Promotion [ODPHP], 2020). As we approach Healthy People 2030, one of the seven core objectives for older adults is to reduce the amount of fall-related ER visits among this population (ODPHP, 2020). The Triple Aim of this project intersects at three primary points (Institute of Healthcare Improvement [IHI], 2020). The first point is by improving the patient experience of care by showing a special interest in the older adult population with educational sessions (IHI, 2020). Educational sessions can facilitate and improve communication between the individual and their health care provider resulting in improved patient care and patient knowledge. Secondly, with a particular focus on the older adult population and increased safety awareness through fall prevention strategies, the health and quality of life in this population can be improved (IHI, 2020). Lastly, the capita cost of health care can be reduced and help decrease the cost strain on the health care system through fall prevention education (IHI, 2020).

Problem Statement

According to the CDC (2019), approximately three million hospital visits are fall-related and over 800,000 hospitalizations occur yearly nationwide. The average cost for these types of falls is greater than \$30,000 per hospitalization (CDC, 2019). Of these falls, over 300,000 adults ages 65 and older are hospitalized due to hip fractures every year (CDC, 2019). In North

Carolina, from 1999 to 2010, the top cause of unintentional injury death for adults aged 65 and older were related to falls (North Carolina Department of Health and Human Services [NCDHHS], 2019). The members of the three community-based sites are at risk of health and financial implications due to their age.

Purpose Statement

The purpose of the proposed DNP project is to increase knowledge on fall prevention strategies in the older adults of the three community-based sites through educational workshops in a three-month period.

Section II. Evidence

Literature Review

A literature search was performed to investigate tools and methods to utilize during implementation phase of this DNP project. Databases used for this literature search were PubMed and CINAHL (EBSCOhost) with MESH terms of "fall prevention", "reducing falls", and "fall safety" (see Appendix A). In the PubMed literature search, 73 results were found with inclusion criteria of publication of five years or less, ages 65 or older, English, academic journals, and patient safety. Exclusion criteria were older adults in acute care settings and levels of evidence I through III. There were nine remaining articles with non-acute care settings and level of evidence of IV or higher. Each abstract was reviewed, and two articles depicted non-institutionalized outpatient safety and were included in this literature review. In the CINAHL (EBSCOhost) literature search, 87 results were found with inclusion criteria of publication of five years or less, ages 65 or older, English, academic journals, and patient safety. Exclusion criteria were older adults in acute care settings and levels of evidence I through III. There were five remaining articles with non-acute care settings and level of evidence of IV or higher. One of

the articles was a duplicate from the PubMed literature search. Each abstract was reviewed, and two articles depicted non-institutionalized outpatient safety and were included in this literature review. A total of four articles were included from both databases, CINAHL (EBSCOhost) and PubMed (See Appendix B).

Current State of Knowledge

In this literature search, it was discovered that there is little focus on non-acute care, non-institutionalized, or community-based interventions. The vast majority of articles focused on fall prevention secondary to an initial fall with implementation strategies in an acute care setting or post-acute care setting through skilled care or home health services. The concepts for fall prevention found in this search focused more on healthcare intervention through primary care offices or required nursing support through home care. No best practice guidelines were found addressing public health safety awareness for fall prevention.

Current Approaches to Solving Population Problem(s)

SURE STEPS is a fall prevention program used in the setting of home health care where nurses do an in-depth screening of patients at risk for falls (Ciance, 2017). The assessment includes a review of medications, home safety, vision, cognition, balance, and mobility (Ciance, 2017). The nurse works in conjunction with a physical therapist and the patient's primary care provider to develop a treatment plan, including patient education and learning exercises to increase strength and balance (Ciance, 2017). This program effectively provides a safer environment and reduces the risk of falls in older adults (Ciance, 2017).

The STEADI (Stopping Elderly Accidents, Deaths, and Injuries) initiative was developed by the Centers for Disease Control and Prevention (CDC) to provide health care providers the tools to implement fall prevention in the primary care setting (Powell-Cope et al., 2018;

Sarmeinto & Lee, 2017). This initiative provides a plethora of educational materials for primary care providers and older adults to promote a safer environment and increase knowledge on modifiable risk factors related to falling (Powell-Cope et al., 2018; Sarmeinto & Lee, 2017). The STEADI initiative provides an algorithm for providers to assess fall risk (Sarmeinto & Lee, 2017). The CDC encourages primary care providers to utilize the STEADI program by providing training to office staff and integrating assessment tools and educational materials into practice (Powell-Cope et al., 2018; Sarmeinto & Lee, 2017).

The STRIDE (Strategies to Reduce Injuries and Develop confidence in Elders) intervention has been utilized by nurses who co-manage patients with primary care providers (Reuben et al., 2017). This program promotes the engagement of patients in their care through motivational interviewing (Reuben et al., 2017). It also provides materials to perform risk assessments of modifiable risk factors in conjunction with CDC materials from the STEADI initiative (Reuben et al., 2017). There are algorithms for fall risk factors in this program that are utilized in conjunction with implementing a falls care plan (Reuben et al., 2017).

Evidence to Support the Intervention

After reviewing the literature and details for each program, the STEADI initiative appeared to be the most appropriate intervention since the project sites were community-based, and participants would not receive nursing support for assessments and implementation of athome safety checks (Sarmeinto & Lee, 2017). Older adults could be educated on how to perform athome safety checks and involve their family in the home assessment. The STEADI initiative has a variety of materials that would be beneficial in this non-acute setting. Disseminating the STEADI concepts in a public health setting could be beneficial due to time constraints at routine

primary care visits. Implementing similar strategies by educating older adults in community settings can improve health outcomes for older adults.

The STEADI initiative is one of the first and most extensive efforts to prevent falls promoted by the CDC (Reuben et al., 2017). This initiative was disseminated at Oregon Health and Science University. Within 18 months of implementation of the program, 870 (45%) of the universities eligible older adults had been screened (Casey et al., 2016). A systematic review by Gillespie et al., (2012), revealed that performing risk assessments and addressing an individual's risk factors can decrease fall occurrences by 24%. In collaborating with each Site Champion, all agreed that utilizing CDC materials from the STEADI initiative when providing educational workshops would be beneficial. Materials that specifically could be utilized for this DNP project were the personal risk assessment form, home safety checklist, and fall prevention guide.

Evidence-Based Practice Framework

Identification of the Framework

The framework utilized for this DNP project was the PRECEDE-PROCEED model created by Lawrence W. Green, as illustrated in Appendix C (Green & Krueter, 2015).

PRECEDE is an acronym for Predisposing, Reinforcing, and Enabling Constructs in Educational and Environmental Development and guides in developing an appropriate process and approach for improvement (Green & Krueter, 2015). PROCEED is an acronym for Policy, Regulatory, and Organizational Constructs in Educational and Environmental Development and is a blueprint for how to proceed with the actual intervention (Green & Krueter, 2015). PRECEDE and PROCEED each have four phases and is often used in the community setting for health promotion and disease prevention (Green & Krueter, 2015).

The four phases of the PRECEDE process include social assessment; epidemiological assessment; educational and ecological assessment; administrative and policy assessment, and intervention alignment (Green & Krueter, 2015). PRECEDE is the foundation of the project and looks at the needs within the community. The problem is defined and possible determinants or conditions that may affect the problem are reviewed (Green & Krueter, 2015). Predisposing, enabling, and reinforcing factors are identified (Green & Krueter, 2015). An appropriate intervention for dissemination is then determined. The elements of this portion of the framework have been described and applied to this DNP project in the previous section.

The four phases of the PROCEED process are implementation; evaluation; impact evaluation; and outcome evaluation (Green & Krueter, 2015). PROCEED is the actual implementation of the project based on the analysis of the proper intervention to implement (Green & Krueter, 2015). Once the project is disseminated, the intervention is evaluated to see if the desired outcome was achieved (Green & Krueter, 2015). These elements will be addressed in subsequent sections.

Ethical Consideration & Protection of Human Subjects

This DNP project was implemented in three community public health settings located in central North Carolina. An equal opportunity to attend educational workshops was offered to all senior members at each site. Participants were able to choose to attend workshops on a volunteer basis and were able to withdraw at any time without penalty. No potential harm was anticipated through the educational sessions. Surveys were taken pre and post workshop requesting age range, sex, recent fall history, current behaviors, and likelihood of modifying those behaviors. No personal identifiable information was collected during the sessions. Information collected in the surveys was entered into a spreadsheet on a password-protected computer. Benefits of

attending the educational workshops included learning risk factors for falling, doing personal fall risk assessments, and reviewing tools for fall prevention.

The sites for this DNP project formally approved the implementation of this project. CITI program modules were completed by the Project Team Leader in preparation for planning and implementing the project. The modules completed were on social and behavioral research and included learning about ethical principles, federal regulations, informed consent, privacy, and confidentiality. Additional modules were completed on public health research.

The sites in this project had no formal Institutional Review Board (IRB) process; therefore this project went through the IRB process at East Carolina University (ECU) and was deemed a Quality Improvement/Program Evaluation project.

Section III. Project Design

Project Site and Population

Three project sites were selected for this DNP project. All were located in the public health setting and were community-based. The target population consisted of older adults, ages 55 and older. Each site had an interest in safety awareness and reducing falls among older adults and promoted open enrollment for workshops for this age group.

Description of the Setting

Three community-based sites were selected for project implementation. These sites were located in two counties of central North Carolina. These two counties together have a total population of 152,610 (North Carolina Center for Health Statistics, 2020). The first site was a faith-based organization with a congregation of approximately 100 members. The second site was a faith-based organization with a congregation of approximately 175 active members. The third site was a senior center with approximately 3,000 active members.

Description of the Population

The community center members were ages 55 and older, and the Site Champion encouraged enrollment to all of the members. The senior groups of each church community encouraged open enrollment of the workshop for all members of the congregation who were ages 55 or older.

Project Team

The project team for this DNP project consisted of a Project Team Leader, a Project Coach, and three Site Champions with one champion for each site. The Project Team Leader, a DNP student at ECU, was responsible for scheduling routine meetings with each Site Champion, gathering educational tools, implementing educational workshops, and evaluation of the workshops. The Project Coach, a faculty member in the ECU College of Nursing DNP program, helped guide the team leader in the process and generate feedback for improvement of the process. Each Site Champion was responsible for coordinating workshops with their members and promoting participation in the workshops.

Project Goals and Outcome Measures

The goals of this project were to perform fall risk assessments and increase knowledge of fall prevention strategies in the older adults of the three-community based sites. The PRECEDE-PROCEED MODEL was the framework utilized for this project (Green & Krueter, 2015). This eight-phase framework acted as a guide through the entire project process of planning, implementation, and evaluation (Green & Krueter, 2015). This model is promoted in the public health setting and provides direction in planning for health promotion (Green & Krueter, 2015).

Description of the Methods and Measurement

A one-time workshop called SAFE (Seniors Against Falls Everyday) was delivered to each community-based location during the implementation phase of this project. A pre-survey was given to each of the participants to describe the sample, fall history, and current behaviors (see Appendix D). Participants were guided through a CDC recommended self-assessment to identify their fall risk score (See Appendix E). Finally, a discussion was facilitated by the Project Team Leader on the following topics (see Appendix F):

- 1. Slow and steady.
- 2. Light it right.
- 3. Keep it clear to lessen fear.
- 4. Move to improve.
- 5. Communicate to eliminate.

Publicly available educational material by the CDC, *What You Can Do to Prevent Falls* and *Check for Safety* (a home safety checklist) was given to each participant along with a post-survey to identify likelihood to modify behaviors to prevent falls (see Appendix G) (CDC, 2019).

Behavior modification was measured in a post-workshop questionnaire to assess the likelihood of several factors. These factors included the likelihood of reporting a fall to their provider, getting a routine eye exam, having a regular exercise routine, reporting dizziness or lightheadedness to their provider, and the likelihood of performing a home safety assessment. The expectation was that participants would modify current behaviors and adapt safer fall prevention behaviors.

The Intervention Appropriateness Measure (IAM) (see Appendix H), a valid and reliable tool for measuring implementation outcomes, was utilized to measure suitability and appropriateness of educational materials and questionnaires for this DNP project and the

responses stored on a Microsoft Excel spreadsheet (Weiner et al., 2017). The IAM was used for each tool prepared for workshops to ensure the materials applied to the older adult population and were a good fit for the workshop settings. Post workshop, each Site Champion filled out an IAM sheet to provide feedback to the Project Team Leader.

The community-based sites in this project do not have a formal IRB process. This project was submitted to the ECU Institutional Review Board, with the guidance of the Project Coach, and did not require IRB approval; rather, it was deemed a Quality Improvement/Program Evaluation project.

Discussion of the Data Collection Process

Data from the pre- and post-survey questionnaires was collected before and after each educational workshop. Information from the pre-workshop survey was entered into the Statistical Program for Social Sciences (SPSS version 25) to include the number of participants, sex, age range, recent fall history, and current behaviors. Post-workshop survey information was entered into SPSS 25 to determine the likelihood participants were to modify their current behavioral patterns. No personal identifiers were collected from participants. The data was password protected.

Implementation Plan

Guided by the PRECEDE-PROCEED MODEL, the educational workshops were implemented through the months of September to November of 2020. Each workshop was tentatively planned to take place at one location per month and last approximately one hour each. Impact evaluation was designed to assess the immediate affects of the workshop through the post-survey questionnaires and from feedback from each Site Champion by utilization of the IAM tool (Weiner et al., 2017). Revisions were made after receiving feedback from each Site

Champion. Outcome evaluation was assessed through likelihood to modify current behaviors as per the post-survey questionnaires.

This DNP project took place during the Covid-19 pandemic; therefore, contingency plans were determined. A tentative timeline was made with each site however dates were subject to change in compliance with state regulations and guidelines. Accommodations were discussed with each Site Champion prior to the implementation to allow for proper precautions such as social distancing, hand sanitizing, and wearing a mask.

Timeline

A projected timeline for this DNP project is seen in Appendix I. Meetings were planned biweekly with the Project Coach. One workshop for each community-based site was tentatively scheduled to take place in September, October, and November of 2020. Meetings were held with each Site Champion approximately two weeks before their site workshop to discuss projected participation, specific location, and final details of the session. Post workshop meetings were held approximately one week after each workshop to discuss findings, fill out the IAM tool, and obtain informal feedback from the Site Champion (Weiner et al., 2017). The implementation of the project was projected to be completed by November 30, 2020.

Section IV. Results and Findings

Results

Data from the workshops was processed to measure current behaviors and the likelihood of behavior modification post-educational sessions. When asked about fall history in the past year, 26.8% reported having a fall in the past year and 63.2% of those falls were not reported to a provider. The post workshop survey revealed that 72.9% of workshop participants would now most likely or somewhat likely report a fall to their provider. Eighty-eight percent of participants

said they were most likely or somewhat likely to report dizziness or lightheadedness to their provider. Prior to the workshop, 15.5% of participants had a moderate to severe fear of falling. Post workshop, 6.8% admitted to still having a moderate to severe fear of falling. Providing education about fall prevention strategies lessened moderate to severe fear of falling by 56.1%.

Forty-six percent of participants stated they had not had an eye exam in the past year and 88.9% of those participants said they were now most likely or somewhat likely to schedule one. When asked about having a regular exercise routine, 42.4% did not have an exercise routine, but after the workshop, 60% stated they were most likely or somewhat likely to begin one.

Post workshop, 79.6% of participants said they were most likely to somewhat likely to do a home safety assessment, 15.3% were neutral, and 5.1% were somewhat unlikely to most unlikely to do one. Each result showed greater than 10% increase in modifying current behaviors and adapting to safer fall prevention behaviors.

Outcomes Data

There were 71 total participants in the fall prevention workshops. 77.5% of the participants were female and 22.5% of the participants were male. 23.9% were ages 55-64, 42.3% were ages 65-74, 26.8% were ages 75-84, and 7% were ages 85 and older (see Appendix J). Home fall risk assessments were performed and 42.6% scored a fall risk of 4 or higher (a score of 4 or higher indicates increased risk for falls). Eighty-five percent of participants reported no fear to some fear of falling. Fifteen percent reported a moderate to severe fear of falling. When asked about falls in the past year, 26.8% had experienced a fall in the past year. Only 36.8% reported their fall to a provider. Forty-six percent of participants stated they had not hand an eye exam in the past year. Forty-two percent stated they did not have an exercise routine.

When assessing risks within the home, 72.9% have small throw rugs in the home and 6.3% have a lot of clutter in the home. Fifty percent of participants reported using a chair to reach things. When asked about having handrails near the stairs at home, 22.2% stated they did not have handrails. Seventy-percent of participants reported getting up during the night without turning on any lights. Fifteen percent reported having a cane or walker but rarely using it. Fifty-one percent stated that they felt dizzy or lightheaded at times (see Appendix K). When asked what age group was higher risk for falls, 94.4% were aware that older adults were at higher risk.

Process Data

Process measures included informal meetings with each Site Champion post workshop for their site. Each Site Champion provided feedback so that the Project Team Leader should assess the need for potential changes in materials or process for the next workshop. The IAM tool was given to each Site Champion to measure appropriateness of the workshops and materials (Weiner et al., 2017). Each marked that they completely agreed that the workshop was fitting, suitable, applicable, and a good match for the population.

Surveys were given pre and post workshop to identify current behaviors and likelihood of modifying behaviors after given educational sessions. The two faith-based organization sites meetings were held in person at each locations site. The community center remained closed during the implementation period of this project and the workshop was held virtually. Surveys for the virtual workshop were done electronically through a survey website that was password protected. Links were sent to all participants for pre and post surveys. Not all participants completed both surveys. Results from all completed workshop questionnaires were entered into SPSS v. 25 and results were evaluated together. Data did not show that one method (in-person versus virtual) was more effective than the other, however in-person workshops were more

interactive and each participant completed a personal fall risk assessment and both workshop surveys.

Discussion of Major Findings

During the research phase of this project, the need for more public health initiatives to promote fall prevention as primary prevention became evident. Most of the focus in the literature was on the acute care or post-acute care settings through skilled care or home health services post fall. The concepts related to fall prevention found in the literature search focused more on healthcare intervention through primary care offices or required nursing support through home care. No best practice guidelines were found addressing public health safety awareness.

According to Gillespie et al. (2012), performing risk assessments and addressing an individual's risk factors can decrease fall occurrences by 24%.

After the workshops, most participants were somewhat likely or most likely to implement safer behaviors. Results revealed that 72.9% of workshop participants would now most likely or somewhat likely report a fall to their provider. Eighty percent of participants said they were most likely to somewhat likely to do a home safety assessment.

The aim of this project was to raise awareness in the need of modification of risk behaviors related to fall prevention safety. The results of this project did reveal that the majority of participants were willing to modify current behaviors and understood the benefits of behavior modification.

Section V. Interpretation and Implications

Cost Benefit Analysis

Costs of this project for one workshop would include one to two staff members, copies of fall assessment tools and CDC handouts, pens, and food. Estimation of total cost for each

workshop is \$1,235 and can be seen in detail in Appendix L. Cost for staff could be deferred if individuals are willing to volunteer their time to the project. Cost for food can be eliminated if food is not provided.

The benefits of the project may not show any direct benefits to the organization, however the members benefit from tools given in preparing a safer environment and forming safer behaviors. The public health setting benefits in giving primary prevention strategies versus secondary prevention post fall or injury. Ultimately, our health care system would greatly benefit in seeing cost-reduction for fall-related injuries, saving approximately \$30,000 per hospitalization for a fall-related accident (CDC, 2019).

Resource Management

The two faith-based sites provided open areas for holding workshops that promoted social distancing due to the Covid-19 pandemic. Areas allowed for social distancing, mask wearing, and proper Covid-19 precautions. Food that was provided was individually wrapped and provided in single servings to decrease risk of unknown exposure to Covid-19. Original CDC handouts were obtained (at no cost) in bulk of 25 due to CDC ordering limitations. Multiple requests were made to obtain quantity needed; however copies could have been made if desired.

Site three, the community center, remained closed during the entire implementation period of this project due to Covid-19. Alternate plans were made to hold a virtual workshop during a virtual exercise class. Pre and post questionnaires were converted to online surveys that were emailed to all participants by the Site Champion. Publicly available CDC handouts were also emailed to each participant by their representative Site Champion. This allowed for successful implementation of this project at site three.

Each Site Champion provided advertisement for the workshop being held with their members. Resources from each site were utilized to the fullest capabilities considering the pandemic restrictions. The community center normally holds a Fall Prevention Fair in September of each year, but this was cancelled due to the pandemic. Participation may have been better had this workshop taken place in conjunction with the Fall Prevention Fair. The pandemic provided the greatest barrier to project implementation; however, the results were successful.

Implications of the Findings

The findings of this project provide many benefits to patients, nursing practice, and the healthcare system. The patient may appear to be the greatest benefactor of this project, however, implementing fall prevention in the public health setting can decrease healthcare strain for nursing staff by allowing public health representatives or volunteers to promote fall safety. The impact on our healthcare system would have a positive effect on cost reduction and patient outcomes.

Implications for Patients

Patients were provided primary prevention strategies in the public health setting. A fall risk assessment aided in evaluating current behaviors and determining if a patient was at risk for a fall based off of those current behaviors. This project promoted a safer environment by raising awareness of unsafe habits and hazardous areas in the home. It promoted the modification of behaviors by encouraging patients to make their home environment safer by doing a home safety assessment. A healthier lifestyle was promoted by encouraging the implementation of a regular exercise routine. This project promoted improved communication with the health care provider and the importance of regular eye exams in the older adult. Ultimately, the potential for maintaining quality of life and longevity of life was the greatest benefit. The ages included

during these workshops could have a double effect if parents of participants are still living.

Lastly, evidence-based and publicly available materials were provided to individuals.

Implications for Nursing Practice

Primary prevention is provided in the public health setting. Nursing practice can promote providers to be more involved in education of the community in a public health setting. Patient involvement in community fall prevention workshops can be encouraged. This project promoted the need for more programs in the public health setting for primary fall prevention and provided the tools and process for nurses to guide older adults in doing fall assessment scoring and educating older adults within the community (see Appendix F).

Impact for Healthcare System(s)

Primary prevention in the public health setting can improve patient outcomes. Fall-related ER visits could decrease, lessening the financial strain on our healthcare system. The health care system may greatly benefit in seeing cost-reduction for fall-related injuries, saving approximately \$30,000 per hospitalization for a fall-related accident (CDC, 2019). Using the STEADI Initiative approach in the public health setting can promote addressing an individual's risk factors by performing risk assessments and potentially decrease fall occurrences by 24% (Gillespie et al., 2012). Primary prevention could ultimately lessen the need for secondary prevention, hospitalizations, and post-fall outpatient services.

Sustainability

The community center that participated in this DNP project holds yearly fall prevention fairs. This SAFE (Seniors Against Falls Everyday) approach will continue to be promoted at this fair. The faith-based organizations would also like to continue to hold regular workshops promoting fall preventions and other topics that would benefit their senior groups. Workshops

can be done in other senior groups or faith-based organizations within the community. Sites have proper facilities to hold workshops and also may have virtual capabilities. Cost is minimal and could be less than projected if volunteers within the community are involved. Personnel involvement will be a key factor in this health promotion. This Project Team Leader has willingness to stay involved in the promotion of fall prevention workshops within the community with the involved organizations and other organizations desiring workshops. This Project Team Leader is willing to train others in the process of holding fall prevention workshops.

Dissemination Plan

Results from this project will be reported to the three community sites that participated in the project. Findings will be discussed with each Site Champion and a copy of this DNP project paper will be given to each Site Champion. This Project Team Leader will continue to work within the community to promote fall prevention workshops. Fall prevention workshops will be offered to other faith-based organizations senior groups within the community of central North Carolina. This Project Team Leader has communicated interest in involvement with the yearly Fall Prevention Fair and future fall prevention workshops with the community center.

This project paper will be presented to the College of Nursing through the ScholarShip repository at East Carolina University. Dissemination of this project will include a public presentation and submission to the ECU digital repository. In addition, the North Carolina Public Health Association holds a yearly educational conference. This SAFE approach to primary fall prevention in the public health setting would be an appropriate topic to promote at that educational conference. (See Appendix M for a detailed dissemination plan.)

Section VI. Conclusion

Limitations

A review of literature revealed fall prevention programs are more prevalent in the postfall setting as secondary prevention in areas such as hospitals and nursing homes. There were few prevention programs that implemented fall prevention in primary care settings. A review of literature revealed a lack of public health approaches to primary fall prevention.

The greatest limitation to the implementation of this project was the Covid-19 pandemic. Delays occurred in the implementation phase due to public shut downs. Churches were closed for several weeks and reopened with preventative measures to limit risk of exposure to the virus. The community center remained closed the during the entire implementation phase, however exercise meetings were held virtually. The project champion for the community center site arranged for the workshop to be held virtually. The pandemic may have affected the number of participants that were involved all three of the workshops.

Recommendations for Others

During the planning phase of this project, it would be beneficial to arrange for multiple sites to implement the project in the event one or more of the sites had to withdraw or could not participate. If the Project Team Leader prefers not to copy handouts from the CDC, one would need to allow time for a sufficient number of materials to arrive due to limitations on ordering in bulks of 25. One should allow for enough time for promotion of the workshop in the sites among the organization and its participants. Consider and explore alternate ways to evaluate behavior modifications. During this first phase of the project, it would be beneficial to build the SPSS (v. 25) or Microsoft Excel data collection tool.

Flexibility is one of the most important factors of the implementation phase of the project. Spacing out workshops will allow for sufficient time to prepare for each workshop and follow up with each Site Champion. Suggestions or changes to the workshop could be modified

prior to the next workshop if indicated. Holding formal meetings with each Site Champion before and after each workshop may be more beneficial. Once data is collected from each workshop, entering results from questionnaires into SPSS 25 or Excel is suggested.

Early in the evaluation phase, ensure that all data is entered for each workshop site.

Results could be compared from in-person workshops versus virtual workshops if indicated. One should also consider opportunities within the community to hold future workshops.

Recommendations Further Study

The lack of research for primary fall prevention indicates the need for more research and program implementation in the public health setting. Implementing a fall prevention program such as this SAFE Approach can have long-term beneficial outcomes by reducing falls in a population over time thus decreasing the burden of fall-related health care costs. Studying the impact within the community after program implementation may reveal a decrease in hospitalizations, lower health care costs, and improved community satisfaction. Developing more practice guidelines for addressing public health safety awareness would be beneficial.

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 Falls risk factor assessment and management, patient engagement, and nurse comanagement. *Journal of the American Geriatrics Society*, 65(12), 2733–2739.
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 https://doi.org/10.1186/s13012-017-0635-3

Appendix A

PubMed and CINAHL (EBSCOhost) Literature Review Process

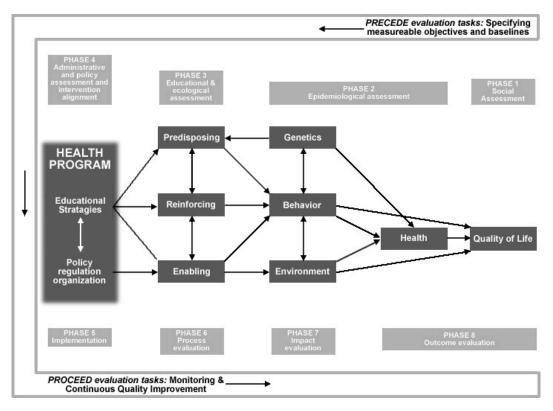
"Fall Prevention"
"Reducing Falls" & "Falls" &
"Fall
Safety" (Inclusion
Criteria: Published
<5 years, Ages 65 or
Older, English,
Academic Journals, Exclusion Criteria (Older adults in 2 Articles- Nonacute care settings and levels of Abstract Review institutionalzed PubMed 73 Articles 9 Articles Performed **Outpatient Safety** evidence IV or higher) & Patient Safety) "Fall Prevention"
"Reducing Falls" & **Exclusion Criteria** "Fall Safety" (Inclusion Criteria: Published (Older adults in 2 Articles- Non-institutionalzed CINAHL (EBSCOhost) acute care settings **Abstract Review** 87Articles 5 Articles and levels of Performed <5 years, Ages 65 **Outpatient Safety** evidence IV or higher) or Older, English, Academic Journals, & Patient Safety)

Appendix B
Literature Matrix

Title	Journal	Purpose	Instruments Used
STEADI:	Sarmiento, K., & Lee, R.	To promote	STEADI materials
CDC's	(2017). STEADI: CDC's	implementation	Most popular
approach to	approach to make older	of the CDC's	educational
make older	adult fall prevention part of	STEADI	materials-What
adult fall	every primary care practice.	materials into	YOU Can Do to
prevention	Journal of safety research,	primary care	Prevent Falls, and
part of every	63, 105–109.	practices to	Check for Safety.
primary care	https://doi.org/10.1016/j.jsr.	promote safety in	
practice	2017.08.003	older adults.	
The STRIDE	Reuben, D. B., Gazarian, P.,	The use of	STRIDE materials
Intervention:	Alexander, N., Araujo, K.,	STRIDE	Risk Assessment of
Falls Risk	Baker, D., Bean, J. F., Boult,	interventions by	modifiable risk
Factor	C., Charpentier, P., Duncan,	nurses who co-	factors: meds, PH,
Assessment	P., Latham, N., Leipzig, R.	manage with	feet/footwear, vision,
and	M., Quintiliani, L. M.,	primary care	Vitamin D,
Management,	Storer, T., & McMahon, S.	physicians.	osteoporosis, home
Patient	(2017). The Strategies to		safety, and
Engagement,	Reduce Injuries and Develop		strength/gait.
and Nurse	Confidence in Elders		Algorithms for risk
Co-	Intervention: Falls Risk		factors
Management	Factor Assessment and		Falls Care Plan &
	Management, Patient		Implementation.
	Engagement, and Nurse Co-		
	management. Journal of the		
	American Geriatrics Society,		
	<i>65(12), 2733–2739.</i>		
	https://doi.org/10.1111/jgs.1		
	5121		
Preventing	Powell-Cope, G., Thomason,	Educating family	CDC Toolkit from
Falls and	S., Bulat, T., Pippins, K. M.,	caregivers and	STEADI initiative
Fall-Related	& Young, H. M. (2018).	patients about	used.
Injuries at	Preventing Falls and Fall-	home safety	
Home	Related Injuries at Home:	strategies and	
	Teaching family caregivers	how to react if a	
	about home modification and	fall occurs.	
	what to do if a fall occurs.		
	AJN American Journal of		
	Nursing, 118(1), 58–61.		
	https://doi.org/10.1097/01.N		
	AJ.0000529720.67793.60		

Educating	Ciance, K. L. (2017).	Implementing a	Sure Step guidebook
and Engaging	Educating and Engaging	program such as	(workbook) for
Older Adults	Older Adults in the SURE	Sure Steps Falls	participants.
in the Sure	STEPS® Fall Prevention	Prevention	
Steps Fall	Program. Home Healthcare	Program can be	
Prevention	Now, 35(10), 542–548.	effective in	
Program	https://doi.org/10.1097/NHH	reducing falls in	
	.00000000000000622	the older adult	
		population.	

Appendix C
PRECEDE-PROCEED Model by Lawrence W. Green



Green, L., & Kreuter, M. (2015). Health Promotion Planning: An Educational and Ecological Approach. Mayfield Publishers.

Appendix D

Pre-Workshop Survey

You are S.A.F.E.

(Seniors Against Falls Everyday!)

Welcome to this fall prevention workshop. Please circle your response.

1. What is your gender?

A. Male

B. Female

2. What is your age range?

A. 55-64

B. 65-74

C. 75-84

D. 85 or older

3. On a scale of 1-4, how fearful are you of falling?

No fear of fal	ling Some fear	of falling Moderate fear	of falling Severely fearful of falling
1	2	3	4

4. Have you fallen in the past year?

A. Yes

B. No

5. (Skip this question if you have not suffered a fall in the past year.)

If you fell, did you report it to your provider?

A. Yes

B. No

6. Have you had an eye exam in the past year?

A. Yes

B. No

7. Do you have a regular exercise routine?

A. Yes

B. No

- 8. Please circle all that apply.
 - A. I have small throw rugs in my home.
 - B. I have a lot of clutter in my home.
 - C. I use a chair to reach things.
 - D. I do not have handrails near the stairs in my home.
 - E. I get up at night without turning any lights on.
 - F. I have a cane or walker, but rarely use them.
 - G. I feel dizzy or lightheaded at times.
- 9. What age group suffers the most from debilitating falls?
 - A. Adolescents
 - B. Young Adults
 - C. Older Adults
 - D. Middle-aged adults

Appendix E

Fall Risk Assessment

Check Your Risk for Falling

	Circle "	es" or "No" for each statement below	Why it matters
Yes (2)	No (0)	I have fallen in the past year.	People who have fallen once are likely to fall again.
res (2)	No (0)	I use or have been advised to use a cane or walker to get around safely.	People who have been advised to use a cane or walker may already be more likely to fall.
Yes (1)	No (0)	Sometimes I feel unsteady when I am walking.	Unsteadiness or needing support while walking are signs of poor balance.
Yes (1)	No (0)	I steady myself by holding onto furniture when walking at home.	This is also a sign of poor balance.
Yes (1)	No (0)	I am worried about falling.	People who are worried about falling are more likely to fall.
Yes (1)	No (0)	I need to push with my hands to stand up from a chair.	This is a sign of weak leg muscles, a major reason for falling.
Yes (1)	No (0)	I have some trouble stepping up onto a curb.	This is also a sign of weak leg muscles.
res (1)	No (0)	I often have to rush to the toilet.	Rushing to the bathroom, especially at night, increases your chance of falling.
/es (1)	No (0)	I have lost some feeling in my feet.	Numbness in your feet can cause stumbles and lead to falls.
/es (1)	No (0)	I take medicine that sometimes makes me feel light-headed or more tired than usual.	Side effects from medicines can sometimes increase your chance of falling.
res (1)	No (0)	I take medicine to help me sleep or improve my mood.	These medicines can sometimes increase your chance of falling
/es (1)	No (0)	I often feel sad or depressed.	Symptoms of depression, such as not feeling well or feeling slowed down, are linked to falls.
otal		Add up the number of points for each "yes" answer. I Discuss this brochure with your doctor.	f you scored 4 points or more, you may be at risk for falling.

Rubenstein, L. Z., Vivrette, R. L., Martin, J. L., Josephson, K. R., & Kramer, B. J. (2011). Development of a fall-risk self-assessment for community-dwelling seniors. *Journal of aging and physical activity*, *19*(1), 16–29. https://doi.org/10.1123/japa.19.1.16
(Note: This tool is open for public use and can be retrieved from cdc.gov)

Appendix F

Presentation Layout

Preventing Falls In Older Adults: A SAFE Approach

1. Perform Fall Risk Assessment – (see Appendix F)

(A score of 4 or higher indicates increased risk for falls)

2. Statistics – up to date statistics can be found on cdc.gov

3. Discuss the 5 SAFE approaches- (make life style modifications NOW)

1) Slow and Steady

- a. Just like the saying-"Slow & Steady wins the race!"
- b. Position changes-Normal physiologic changes can affect blood flow, reflexes, vision, and muscle tone. Take your time when changing positions. Allow time for proper blood flow. Dizziness may occur for some people with quick positional changes. Blood pressure can drop as a result. This can be aggravated by illness or medications (side effects).
- c. If you are unsteady, utilized a cane, walker, or rolater. Walk on even surfaces. If walking in the yard, use a cane/walker for stability. Do you furniture surf (hold onto furniture trying to get somewhere?) *SAFETY FIRST!*
- d. Wear proper footwear-non-slip, good traction, and good fit.
- e. Alcohol use can lead to unsteadiness. Limit or avoid alcohol.

2) Light it Right

- a. Keep areas well lit. Avoid walking in the dark.(Use night lights that come on automatically when its dark.)
- b. Eye Exams-vision changes, as we age-yearly exams are important!

3) Keep it Clear to Lessen Fear

- a. Remove clutter from your home.
- b. Remove small rugs or use non-slip rugs.
- c. Avoid slippery surfaces. (Use non-slip stickers in shower. Have non-slip rug outside of shower.)
- d. Install proper railing to get in your house or up stairs.
- e. Avoid standing on a chair-use a step stool with a handle or get family to do it!
- f. HANDOUT FROM CDC-HOME CHECK LIST

4) Move to Improve

- a. Exercise strengthens muscles and core strength.
- b. Try balance training. Walk in your neighborhood. Join a gym. Go to a senior center that has activities or an exercise program.

5) Communicate to Eliminate (COMMUNICATE WITH YOUR PROVIDER!)

- a. Dizziness-usually due to vertigo or low BP.
- b. Increased fatigue-there may be a reason! (Infection, anemia, etc.)
- c. Report ANY falls to provider (especially if on blood thinners!)
- d. Numbness in feet? Can cause stumbling and lead to falling (i.e. Diabetics)

Appendix G

Post-Workshop Survey

You are S.A.F.E.

(Seniors Against Falls Everyday!)

Thank you for participating in this workshop. Please circle your response.

1. On a scale of 1-4, after attending this educational session, how fearful are you of falling?

No fear of falling	Some fear of falling	Moderate fear of falling	Severely fearful of falling
1	2	3	4

- 2. If you fall, how likely are you to report it to your provider?
 - A. Most likely
 - B. Somewhat likely
 - C. Neutral
 - D. Somewhat unlikely
 - E. Most unlikely
- 3. If you have not had an eye exam in the past year, how likely are you to schedule one?
 - A. Most likely
 - B. Somewhat likely
 - C. Neutral
 - D. Somewhat unlikely
 - E. Most unlikely
 - F. I have had an eye exam in the past year.
- 4. How likely are you to begin a regular exercise routine?
 - A. Most likely
 - B. Somewhat likely
 - C. Neutral
 - D. Somewhat unlikely
 - E. Most unlikely
 - F. I have an exercise routine.
- 5. How likely are you to report dizziness or lightheadedness to your provider?
 - A. Most likely
 - B. Somewhat likely
 - C. Neutral
 - D. Somewhat unlikely
 - E. Most unlikely
- 6. How likely are you to do a home safety assessment?
 - A. Most likely
 - B. Somewhat likely
 - C. Neutral
 - D. Somewhat unlikely
 - E. Most unlikely
- 7. What was your fall risk score today? _____

Appendix H
Intervention Appropriateness Measure (IAM) Tracking Tool

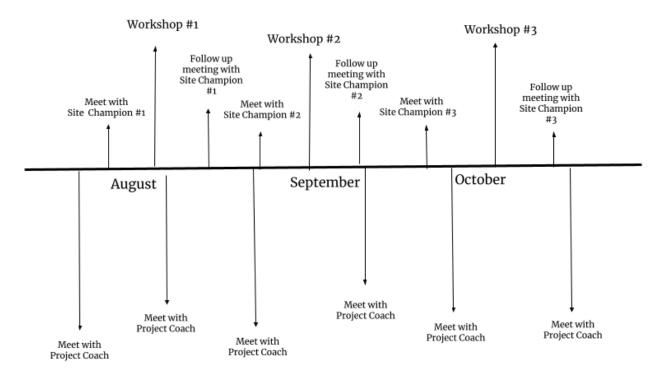
	Completely agree	Disagree	Neither agree nor disagree	Agree	Completely Agree
seems fitting.	1	2	3	4	5
seems suitable.	1	2	3	4	5
seems applicable.	1	2	3	4	5
seems like a good match.	1	2	3	4	5

Note. The Intervention Appropriateness Measure will be used in measuring appropriateness and suitability of educational materials utilized in the workshops. Adapted from "Psychometric assessment of three newly developed implementation outcome measures," by B. J. Weiner, C. C. Lewis, C. Stanick, B. J. Powell, C. N., Dorsey, A. S. Clary, M. H. Boynton, & H. Halko, 2017, *Implementation science 12*(1), p. 108. https://doi.org/10.1186/s13012-017-0635-3 (Note: This tool is open for public use.)

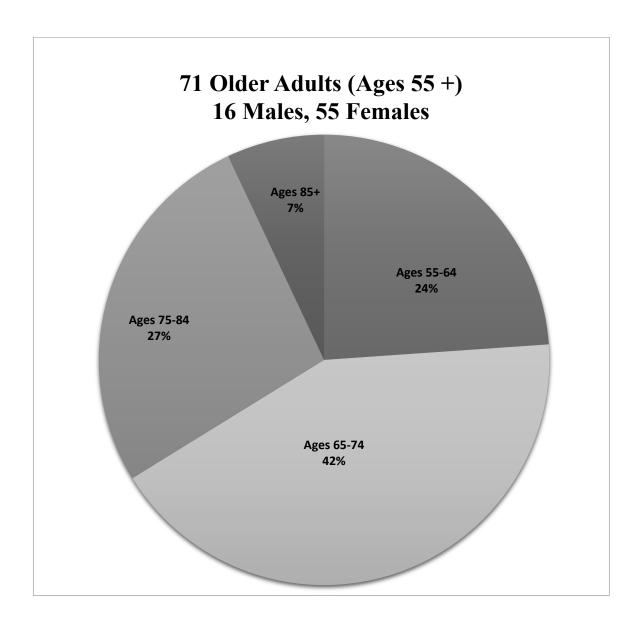
Appendix I

Projected Timeline for DNP Project

DNP Project Timeline

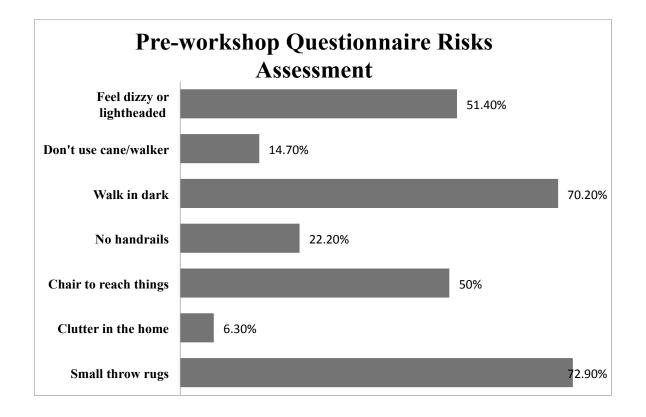


Appendix J
Participants



Appendix K

Current Behaviors From Pre-Workshop Survey



Appendix L

Project Budget

Project Supplies	Project Budget
Staff \$20/hr x 20 hrs x 2 staff members	\$ 800
Copies of CDC Brochures Fall risk assessments (B/W copies-\$0.10/each x 50) CDC Check for Safety Home Checklist (Color copies-\$0.20/each x 50) CDC What YOU Can Do to Prevent Falls (B/W copies-\$0.20/each x 50)	\$5 \$5 \$5
Pens (pack of 50)	\$20
Food (optional) 50 people x \$8/each	\$400
Total Projected Cost of Project	=\$1,235

Appendix M

Dissemination Plan

East Carolina University College of Nursing DNP Project Public Presentation	April 6, 2021	
Submission to the East Carolina University The Scholarship Repository	April 25, 2021	
Present Site Champions with DNP Project Paper and Results	June 2021	
Fall Prevention Fair at Local Community Center	September 2021	
North Carolina Public Health Association Fall Fair	October 2021	

Appendix N

Doctor of Nursing Practice Essentials

	Description	Demonstration of Knowledge
Essential I Scientific Underpinning for Practice	Competency – Analyzes and uses information to develop practice Competency -Integrates knowledge from humanities and science into context of nursing Competency -Translates research to improve practice Competency -Integrates research, theory, and practice to develop new approaches toward improved practice and outcomes	 Literature review Development of SAFE Approach Analysis of DNP project data and feedback from sites to change processes IHI module completion
Essential II Organizational & Systems Leadership for Quality Improvement & Systems Thinking	Competency – Develops and evaluates practice based on science and integrates policy and humanities Competency – Assumes and ensures accountability for quality care and patient safety Competency - Demonstrates critical and reflective thinking Competency - Advocates for improved quality, access, and cost of health care; monitors costs and budgets Competency - Develops and implements innovations incorporating principles of change Competency - Effectively communicates practice knowledge in writing and orally to improve quality Competency - Develops and evaluates strategies to manage ethical dilemmas in patient care and within health care delivery systems	 Applied evidence-based literature to develop public health approach to fall prevention Development of new process for primary prevention Writing of DNP project paper to promote improved systems Communication with Site Champions on development and implementation of new processes
Essential III Clinical Scholarship & Analytical Methods for Evidence-Based Practice	Competency - Critically analyzes literature to determine best practices Competency - Implements evaluation processes to measure process and patient outcomes Competency - Designs and implements quality improvement strategies to promote safety, efficiency, and equitable quality care for patients Competency - Applies knowledge to develop practice guidelines Competency - Uses informatics to identify, analyze, and predict best practice and patient outcomes Competency - Collaborate in research and disseminate findings	 Literature review for appropriate setting PRECEED/PROCEED model to guide project process IAM tool to measure outcomes Promotion of fall safety Use of CDC materials for public health approach Dissemination plan for project Analysis and outcome measures of project
Essential IV Information Systems – Technology & Patient Care Technology for the Improvement & Transformation	Competency - Design/select and utilize software to analyze practice and consumer information systems that can improve the delivery & quality of care Competency - Analyze and operationalize patient care technologies Competency - Evaluate technology regarding ethics, efficiency and accuracy Competency - Evaluates systems of care using health information technologies	 SPSS 25 and Microsoft Excel used for storing and analyzing data IAM model used to evaluate materials and workshops PRECEED/PROCEED model to guide process

of Health Care

	Description	Demonstration of Knowledge
Essential V Health Care Policy of Advocacy in Health Care	Competency- Analyzes health policy from the perspective of patients, nursing and other stakeholders Competency – Provides leadership in developing and implementing health policy Competency – Influences policymakers, formally and informally, in local and global settings Competency – Educates stakeholders regarding policy Competency – Advocates for nursing within the policy arena Competency- Participates in policy agendas that assist with finance, regulation and health care delivery Competency – Advocates for equitable and ethical health care	N/A-Completed in subsequent semester
Essential VI Interprofessional Collaboration for Improving Patient & Population Health Outcomes	Competency- Uses effective collaboration and communication to develop and implement practice, policy, standards of care, and scholarship Competency – Provide leadership to interprofessional care teams Competency – Consult intraprofessionally and interprofessionally to develop systems of care in complex	 Continual communication with three Site Champions and Project Coach Coordination of workshops with three community-based sites
Essential VII Clinical Prevention & Population Health for Improving the Nation's Health	Competency- Integrates epidemiology, biostatistics, and data to facilitate individual and population health care delivery Competency – Synthesizes information & cultural competency to develop & use health promotion/disease prevention strategies to address gaps in care Competency – Evaluates and implements change strategies of models of health care delivery to improve quality and address diversity	 Development of primary prevention program in public health setting Use of CDC STEADI materials in public health setting
Essential VIII Advanced Nursing Practice	Competency- Melds diversity & cultural sensitivity to conduct systematic assessment of health parameters in varied settings Competency – Design, implement & evaluate nursing interventions to promote quality Competency – Develop & maintain patient relationships Competency – Demonstrate advanced clinical judgment and systematic thoughts to improve patient outcomes Competency – Mentor and support fellow nurses Competency – Provide support for individuals and systems experiencing change and transitions Competency – Use systems analysis to evaluate practice efficiency, care delivery, fiscal responsibility, ethical responsibility, and quality outcomes measures	 Peer reviews on project papers and project posters CITI modules for Public Health completed to ensure ethical principles applied