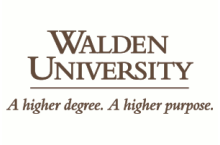

2020

Introducing Exercise and Home Safety Check to Decrease Falls in Older Adults

Alie Theresa Massicot-Gray
Walden University

Walden University

College of Health Sciences

This is to certify that the doctoral study by

Alie Massicot-Gray

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

Review Committee
Dr. Mary Verklan, Committee Chairperson, Nursing Faculty
Dr. Margaret Harvey, Committee Member, Nursing Faculty
Dr. Sue Bell, University Reviewer, Nursing Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2020

Abstract

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by

Alie Massicot-Gray

MS, SUNY Downstate Medical Center, 2010

BS, CUNY - Medgar Evers College, 2006

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

November 2020

Abstract

The lack of education related to causes of, complications from, and interventions for falls is associated with the high rate of falls and fall-related injuries in older adults (OAs) beginning at age 65. The purpose of this project was to develop a fall prevention program that included components of the Stopping Elderly Accidents Deaths & Injuries Algorithm to increase fall prevention awareness and reduce falls in OAs at one community senior center. The project practice question asked whether introducing a fall prevention program that focused on exercise and home safety checks to educate OAs could decrease the rate of falls. The development of the fall prevention program was guided by the Roy Adaptation Model and The Health Belief Model. The sources of evidence were acquired from the Walden University databases and the Centers for Disease Control and Prevention website. The education workshop was held for 1-hour. The pretest and posttest design utilized the Fall Risk Self-Assessment 12-Item Questionnaire results for de-identified data collection from 30 OAs. The project results, analyzed using descriptive statistics, found that there were only 2 occurrences in the month following the fall prevention program, a decrease from 15 for the year before the program. Results showed that a fall prevention program focused on exercise and a home safety check demonstrated a trend in decreasing the rate of falls. Continuing to monitor the fall rate over the next year will determine the long-term effectiveness of the educational program. The social change implications are for community senior centers to provide an evidence-based fall prevention program that decreases the rate of falls in OAs to enhance their quality of life.

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Dedication

I dedicate this quality improvement project to all my lovely grandparents and great-grandmother, who inspired me to seek a quality of life for older adults.

Acknowledgments

I would like to acknowledge the entire staff of Walden University who supported me throughout my journey as a DNP student. My special thanks to my dedicated Chair, Dr. Mary T. Verklan, for continuous guidance, support, and inspiration to complete my project. I would also like to thank my preceptor and the entire staff at the project site for accommodating me during my practicum rotations. I would like to thank my husband, Dwight Gray, for believing in me and providing all the love and support that I needed to succeed. I am grateful to my children and my grandchildren, whom I drew strength from to complete my ultimate educational journey.

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Section 1: Nature of the Project

Introduction

According to the Centers for Disease Control and Prevention (CDC, 2017a), a substantial number of older adults (OAs) began to experience falls beginning at 65 years of age in the United States, and lower than 50% disclosed the incident to their primary care physician. Only 1 out of 4 OAs reported falls, and 1 out of 5 falls resulted in hip and head injuries, with a reported death every 20 minutes due to injuries related to the fall (CDC, 2017a). During the aging process, adaptation to physiological changes occurs and becomes a challenge that leads to physical decline (McEwen & Wills, 2014). The New York City Hospitals have provided emergent care to at least 21,000 OAs, with 16,000 admissions related to falls annually (New York City Department of Health and Mental Hygiene [NYCDOHMH], 2015). Older adults who have not gained the awareness of a home safety check or understand the impact of daily exercise have been at risk for falling and face deterioration in their health. Falls in older adults lead to fear of further falls, weakness, and inability to complete daily tasks (CDC, 2017a). The nature of the DNP project was to develop a fall prevention program to educate OAs at a community-based senior center. In this section, I discuss the problem statement, purpose, nature of the doctoral project, and the significance.

Problem Statement

Falls have been a major public health crisis among community-residing OAs and have a detrimental impact on their health. The primary cause of disability and death in

OAs have been due to fall-related injuries (CDC, 2017a). At a community-based senior center, I assessed a substantial number of OAs with gait-balance issues who required assistive devices such as walkers, canes, and wheelchairs to assist with ambulation. Some of the OAs were witnessed to experience falls and near-missed falls due to a severe gait-balance problem.

The community-senior center did not have available data on the rate of falls for the OAs at the center because the issue of falls has never been addressed. Recent data were collected on 30 OAs at the center to identify their risk factors for falls. About 50% of the OAs were at moderate risk of falls, whereas the other 50% had an elevated risk for falls. The organization did not have any program in place to prevent falls for OAs. Their risk factors included prior falls, gait-balance impairments, and environmental hazards within their home (Marcum, Caffarelli, & Seil, 2014). Because OAs who have fallen are often fearful of further falls, they may decrease their daily activities, which leads to progressive physical weakness and further falls (CDC, 2017a).

A community-based senior center was an appropriate place to conduct a fall prevention program because the OAs spend most of their time at the center. Exercise and a home safety check have significantly reduced falls and maintain the quality of life (QOL) for OAs. The direct annual medical cost used to treat fall-related injuries has been $31 billion (CDC, 2017a). Because falls have persisted in OAs, the direct medical cost could increase to $54 billion by 2020 (A. Lee, K. Lee, & Khang, 2013). Increased senior center involvement in fall prevention measures could reduce health care spending and

decrease injuries related to falls. New York City has 250 senior centers and has been providing programs and services for over 29,680 OAs daily (Stringer, 2017).

Purpose

As an advanced practice nurse (APN), I have embarked on relevant research findings to create a quality improvement project (QIP) that could effectively decrease falls in OAs. The goal of the doctoral project was to implement components of the Stopping Elderly Accidents, Deaths & Injuries (STEADI) algorithm to reduce falls in OAs at one community senior center. The STEADI is an excellent tool used by the CDC (2017a) specifically to reduce falls in OAs and could be used by senior centers for all their members. The STEADI program allowed the senior center to identify their members who were at risk for falls and implement evidence-based practice (EBP) interventions to prevent falls. I assessed the OAs' rate of falls pre- and post-implementation of the monthly use of the STEADI program to determine if the rate of falls was reduced. The senior center provided an opportunity for me to determine the rate of falls in 30 OAs before deciding the implementation of the STEADI program. The outcome that this project was expected to provide was an opportunity for the senior center to decrease the rate of falls for its members and maintain their QOL.

Nature of the Doctoral Project

A QIP was implemented to address the incidences of falls in OAs. Public health agencies, such as community senior centers, who have been providing EBP activities, should become engaged in actions that prevent falls and complicated injuries in OAs. The

goal of the QIP project was to improve the incidence of fall rates in OAs at a senior center. A fall prevention program was developed using a before-and-after design with components of the STEADI algorithm. The components of the STEADI program that were used included the delivery of a fall prevention class that focused on exercise and a home safety check.

The OAs were given a validated Fall Risk Self-Assessment (FRSA) checklist used in the STEADI algorithm by the CDC that was developed by the VA Greater Los Angeles Healthcare System Geriatric Research Education & Clinical Center (GRECC) and Affiliates (CDC, 2017a). The FRSA checklist was used as a screening tool and contained a 12-item questionnaire that obtains information related to the OAs' risk for falls. The questionnaire provided a total possible score of 14 points; however, OAs who scored 4 points or over were considered at risk for falling. Because the tool was used as a pre-score analysis of the OAs' risk for falls, it also determined which OAs would be included in the fall prevention program. The OAs were given brochures to take home to provide reinforcement on the education provided. The OAs were reevaluated within 30 days to determine the effectiveness of the program. They completed the 12-item questionnaire that collected data on the post-score analysis of the OAs' risk for falls. The OAs who experienced falls within the past 30 days were reevaluated and encouraged to continue in the fall prevention program. The project generated a better understanding of the incidence of falls in OAs and how exercise and a home safety check provided a positive impact. The data were analyzed by relying on comparative descriptive statistics

to compare the pre-fall data and the post-fall data. Descriptive statistics provided an opportunity to gain new information to better explain a phenomenon (Grove, Burns, & Gray, 2013). The executive director served as my preceptor for one year at the community senior center and authorized my plans to collect data on the OAs' risk for falls to design a fall prevention program.

The Walden University Library was used as the primary source of evidence to support the purpose of the EBP project. I organized the literature reviewed by gathering information on the incidence and risks of falls in OAs. The complications and financial cost for the U.S. health care system related to falls were included. Programs to prevent falls were explored for their effectiveness in the reduction of falls. The development of the fall prevention program used the framework of the Roy adaptation model (RAM) and showed how it impacted the aging process for OAs. The physiological decline occurs during the aging process if adaptation is not achieved (McEwen & Wills, 2014). The QI project goals also relied on the health belief model (HBM) and guided the process as the attitudes of the OAs were modified to make new health promotional decisions. The HBM provided an opportunity to modify the challenges of harmful behaviors (McEwen & Wills, 2014). As the OAs changed their belief to embrace exercise, which increased their strength and endurance, and understood the importance of removing hazards from their homes, their risk of falls decreased and thus helped maintain their QOL.

Significance

Falls and fall-related injuries have been the dominant causes of disability and death in OAs above age 65 (Bergen, Stevens, & Burns, 2016). There are at least 2.8 million OAs who have experienced a fall, resulting in almost 30% hospitalization for head and hip injuries (Berg & Carlson, 2017). Currently, the United States has 10,000 people who become age 65 daily (CDC, 2017a). The population of OAs has been increasing and could increase to 74 million by 2030, resulting in at least 49 million falls, and 12 million injuries (CDC, 2017a). As the population of OAs continues to expand, the epidemic of falls could continue to threaten their QOL.

The stakeholders who engaged in the development of the fall prevention program included the executive director, center manager, and associate director. The QIP provided an opportunity for the stakeholders to learn how falls impact the QOL for their OAs. The stakeholders also increased their awareness of how to identify the OAs who are at risk for falls for inclusion into the fall prevention program to decrease their threats for falls. Community senior centers that become engaged in fall prevention programs could prevent falls for their OAs and reduce the burden of cost on the U.S. health care system. Unless there are preventive measures in place, the United States could continue to spend more than $31 billion annually for falls and fall-related injuries (CDC, 2017a).

Furthermore, by 2020, the U.S. direct and indirect health care spending on falls will increase by over $54 billion every year (Berg & Carlson, 2017). The doctoral project was developed to help close the practice gap to reduce falls in OAs. It provided the

opportunity for social change as it allowed health providers to engage and invest in EBP interventions that prevented OAs from experiencing complicated injuries that could have led to their death. A fall prevention program provided the senior center the opportunity for inclusion of new practice guidelines to prevent falls and maintain the highest standards of health promotion activities. New practice guidelines support magnet standards of health care delivery and EBP interventions within the senior center. Magnet status is considered the "gold standard" in maintaining population health because it has been grounded in theory to allow EBPs (Jimmerson & King-Jones, 2013). Furthermore, magnet status has provided an opportunity to continue improvements in the client's safety, satisfaction rate, and financial stability of the organization (Jimmerson & King-Jones, 2013).

Summary

Falls have been a growing epidemic among community-residing OAs and pose a serious threat to their health. Those who experience fall and fall-related injuries may face head and hip injuries and sometimes death. The significance of falls and fall-related injuries in OAs has impacted the U.S. health care system and has threatened the QOL for OAs. Falls in OAs have placed a demand on community senior centers to act and address the problem. The goal of the DNP project was to implement a fall prevention program at one senior center to reduce falls in OAs and provide an improvement for the practice gap to reduce falls in the OAs. The fall prevention program relied on components of the STEADI algorithm to educate OAs on how to reduce falls with daily exercise and a home

safety check. The purpose of utilizing the STEADI algorithm was to develop a program that would decrease falls in OAs by 50%. The executive director of the senior center approved the piloting of the program. The program included a before-and-after design with the inclusion of an FRSA checklist to determine the OAs' risk for falls. The OAs were provided with handouts to maintain educational reinforcements. The effectiveness of the program was analyzed within 30 days. Section 1 provided details on the impact of falls in OAs, and how one community senior center could become engaged to decrease the rate of falls by implementing a fall prevention program. In Section 2, I discussed the concepts, models, and theoretical frameworks, the relevance of the DNP project to nursing practice, local background and context of the problem, the role of the DNP student, and the project team.

Section 2: Background and Context

Introduction

Fall-related injuries are the primary cause of morbidity and mortality in OAs (CDC, 2017a). The emergent care centers within New York City Hospitals have been encumbered with 21,000 falls and 16,000 hospitalizations for adults age 65 and above each year (NYCDOHMH, 2015). Falls in OAs have led to fear of further falls, decreased activities, and increased weakness and incidence of further falls (CDC, 2017a). Falls have been a significant health problem for OAs in long-term care and for OAs living at home. The doctoral project sought to answer the practice-focused question, would the introduction of a fall prevention class that focused on exercise and home safety checks decrease the rate of falls in OAs by 50%? The purpose of the doctoral project was to determine if a fall prevention program using components of the STEADI algorithm could reduce the prevalence of falls in OAs at one community senior center. The framework of the RAM was used to better understand the coping mechanism needed to address the aging process, and the HBM was included to guide the education intervention. Senior centers could become involved in closing the practice gap to reduce falls in OAs and the financial burden on the U.S. health care system.

Concepts, Models, and Theory

When considering a new practice protocol for a community senior center, it should be well planned to ensure the improvement of service delivery for OAs. The best EBP models were selected and incorporated into the QIP to maintain the success of the

new fall prevention program. The framework of the RAM was used with a focus on the physiological mode that explained the impact of the aging process in OAs. The HBM guided the successful education of the OAs and elicited changes in their attitudes and behavior to make new decisions related to health promotion.

The RAM was developed by a middle-range theorist, Callister Roy, and was constructed with four interrelated adaptive modes (McEwin & Wills, 2014). The first mode, physiologic-physical, is used to maintain physical integrity as the body adapts to the physical changes (McEwin & Wills, 2014). The second mode, self-concept-group identity, is used to maintain the psycho-spiritual integrity to identify the individual's purpose in the world (McEwin & Wills, 2014). The third mode, role function, is used to allow the individual to adjust to their duties in society as an individual or a group (McEwin & Wills, 2014). The last mode, interdependence, is used to discuss how adaptation occurs within direct relationships that people, or individuals create among themselves (McEwin & Wills, 2014). The RAM is composed of two subsystems of coping mechanism, the regulator for physical coping skills and the cognator for cognitive coping skills (McEwin & Wills, 2014). The RAM has been recognized as a grand nursing theory because it identifies essential interactive constructs to the adaptation processes (Grove et al., 2013). The project focused on the physiological assumptions for the RAM model.

The physiological component of RAM addressed the coping mechanisms needed to adapt to the physical changes in OAs. As OAs age, their risk factors for falls could

continue to increase. However, exercise has significantly improved their mobility and provided QOL (Azizan & Justine, 2015). The OAs needed to learn the impact of physical activity and how it influences their fall risks. Maintaining physical activity in OAs has played a vital role in health-promoting actions. Older adults who have chosen to remain physically active will support healthy functions and live longer than others who have chosen a sedentary lifestyle (Li, Du, Zhang, & Wang, 2013). The national guidelines for OAs recommended increasing physical activities of any kind to decrease negative health consequences (Rogers, Keller, Larkey, & Ainsworth, 2012). The utilization of RAM supported the theoretical framework that physical decline in OAs has been interdependent on physical activities to achieve adaptation (Rogers et al., 2012). Therefore, the RAM was used to educate OAs on the progressive physical changes ahead and the positive impact of exercise to increase endurance, gait/balance.

The HBM was chosen as the most efficient model to guide the fall prevention education for the OAs at the senior center. The HBM was designed in the 1950s by several social psychologists employed by the U.S. Public Health Service to focus on motivating the community to get screened for primary care services (McEwin & Wills, 2014). The model determined the individual's readiness to learn and implement the best interventions for solving falls in the OA population. The HBM has provided a framework that supports and predicts a person's attitude and belief systems to determine their course of action for health choices (McEwin & Wills, 2014). The APNs could assess the client's

perception of health concerns to establish the baseline for health education (Sheeran et al., 2016).

The HBM consists of five health-related behaviors that explain the perceptions that motivate one's health actions. The first perception, perceived susceptibility, is the belief about the probability of getting a health problem (McEwin & Wills, 2014). Once a person has learned that there is a risk of developing a health problem, they could become motivated to engage in preventative measures (Sulat, Prabandari, Sanusi, Hapsari, & Santoso, 2018). The second perception, perceived severity, is the belief of how severe a health problem is and the consequences of the threat (McEwin & Wills, 2014). The higher the perception for the severity or adverse outcome of the threat, the more the individual could become motivated to decrease the consequences of the threat. However, if the individual could not perceive the threat as a significant influence on his/her health, then health actions may be delayed (Sulat et al., 2018). The third perception, perceived benefits, is the belief that the advisement given could reduce the risks or threats and provide beneficial results (McEwin & Wills, 2014). Perceived benefits occur when the perceived susceptibility and severity are high enough to provide a level of confidence that the behavior selected will successfully reduce the threat or health concern (Sulat et al., 2018). The fourth perception, perceived barriers, is the belief that the actions taken have a psychological cost (McEwin & Wills, 2014). When the individual perceives a barrier, the obstacle will serve to prevent the engagement of healthy behaviors (Sulat et al., 2018).

Two other conceptual variables were not part of the original construct of the model; however, they were used to provide a positive impact on the outcome of the model. The first variable, cues to action, determined the readiness to change the behavior, and the second variable, self-efficacy, the confidence needed for the individual to successfully alter the pattern of the response (McEwin & Wills, 2014). The OAs' health-related behavior predicted their cues to action.

The HBM provided an understanding of the OAs' health-related behaviors to take measures in a fall prevention program. The HBM supported the paradigm that the perception of good health reflects good habits. The goal of the first perception, perceived susceptibility, predicted the OAs' risk for falls. A Fall Risk Self-Assessment Questionnaire (FRSAQ) provided the opportunity to predict the risk for falls. The goal of the second perception, perceived severity, was used to help the OAs understand the impact of falls and fall-related injuries. The completed FRSAQ provided the opportunity to educate the OAs on fall-related injuries and complications. The perceived severity and susceptibility allowed the OAs to participate in a fall prevention program that increased their knowledge to take action and promote healthy behaviors. The goal of the third perception, perceived benefits, provided closure of the knowledge gaps for OAs who did not know how to identify their risk for falls. The goal of the fourth perception, perceived barriers, helped determine what prevented the OAs from taking actions to modify their behaviors to engage in fall prevention. The goal of the first conceptual variable, cues to action, provided the opportunity for the OAs to commit their readiness to participate in

activities that prevented falls. The goal of the second variable, self-efficacy, assessed the OAs' confidence level that their chosen actions increased their ability to decrease falls.

Relevance to Nursing Practice

The CDC (2017f) has used the STEADI algorithm to improve nursing practices that have decreased falls in the OA population. Nurses could utilize the STEADI algorithm to improve nursing practices by increasing fall prevention awareness, thereby minimizing the consequences of falls and fall-related injuries. Nursing practice guidelines could avoid unnecessary time spent in hospital emergency rooms, long-term care centers, and the burden of fall-related costs. One of the adverse effects of hospitalization that OAs have faced is delirium (Bull, Boaz, & Jermé, 2016). Delirium has caused confusion and an increased risk of falls in OAs. Another consequence of falls is fear of further falls, which has led to a reduction of physical activities, increase physical weakness, and further falls (CDC, 2017a). The statistical analysis of the prevalence and incidence of falls in OAs by the behavioral risk factor surveillance system has produced a national public health concern (Bergen et al., 2016). Nurses who have chosen to collaborate with community senior centers to develop practice guidelines will decrease the rate of falls and provide a positive impact on health awareness on the importance of home safety checks and exercise. The QIP showed relevance to nursing practice as it identified the practice gap for community-dwelling OAs at one community senior center. The QIP has provided the opportunity for the development of EBP interventions to improve nursing practice by decreasing the rate of falls in OAs. The patterns of falls in the community

milieu of OAs have shifted nursing practices to rely on EBP developed from scientific knowledge to create new practice guidelines.

Local Background and Context

The QIP was conducted at one community senior center that provided a structured day of activities for OAs aged 60 and above. Most of the OAs are 65 and above, retired, and have been receiving their pension or government aid, including Medicaid and Medicare. Some of the OAs have also relied on federal grant funding for employment at the senior center; however, the budget cuts placed on federal grants have created a barrier for employment for some of the OAs. A substantial number of OAs have gait-balance issues and have been utilizing assistive devices such as walkers, canes, and wheelchairs to support ambulation. The OAs were at risk for falls and fall-related injuries and have encountered falls and near-missed falls because of impaired gait-balance. The senior center has a daily occupancy of 60 to 100 male and female OAs, who have a predominantly Afro-Caribbean cultural background. They live within the community and have been visiting the center daily to participate in the activities offered and consume a free breakfast and lunch.

The employees for the senior center consist of the executive director, my preceptor, associate director, center director, program coordinators, social workers, case managers, computer assistants, transportation assistants, dietary aids, crime, and victim prevention assistants, senior employment, human resources, and daily program presenters. The stakeholders directly involved in the QIP included my preceptor,

associate director, and center director. The senior center is a nonprofit organization that has been receiving most of its funding from two regulatory bodies, The New York City Department for the Aging and the NYCDOHMH. The organization has limited funding to invest in the development of a new practice protocol. However, a fall prevention program with components of the STEADI algorithm was a cost-effective EBP program that brought improvement to the practices for the senior center. From 2007 to 2016, the death rate of falls in OAs in the United States has increased by 30% (CDC, 2017a). The STEADI algorithm has decreased falls in OAs, allowing them to maintain their activities of daily living (CDC, 2017a).

Role of the DNP Student

Throughout my classes in the DNP program at Walden University, I have learned that quality improvements in health care require knowledge from the latest relevant research findings. My classroom and practicum experiences have broadened my concept of EBPs and influenced the development of clinical practice guidelines to improve care outcomes. My role in the project included serving as the designated leader. The community senior center did not have any practice guidelines to prevent falls. I selected interventions for the fall prevention program from the CDC (2017f) STEADI algorithm that has proven to decrease the rate of falls in OAs.

Interventions chosen from the STEADI algorithm focused on exercise and home safety checks. The following steps used describes the beginning to the end of the project. First, I met with my preceptor to discuss the design of the project and the expected

outcome. My preceptor and I carefully selected the project team and their roles to ensure their commitment and support to assist in developing the project to make it successful. Secondly, I met with the selected team to discuss and clarify their roles, as discussed with my preceptor. Third, before the development of the fall prevention class, I educated the team to increase their awareness of the incidence and prevalence of falls in OAs. I ensured that the team understood the positive impact that the fall prevention program could have on the OAs. I encouraged the group to share their insights on how the program could maintain quality improvements during the development of the project. Fourth, I created flyers and posted them throughout the center four weeks prior to advertising the fall prevention program.

Additionally, I personally invited the OAs during breakfast the day before the scheduled program to voluntarily join the fall prevention program. For the fifth step, on the day of the class, the OAs were given the FRSA checklist to complete, which determined their risk of falls and inclusion into the program. The fall prevention class was delivered, and brochures were provided at the end of the class for education reinforcement. Finally, the OAs met within 30 days after the fall prevention class, and the FRSA checklist was used to collect data on the further risk of falls for possible continuation in the fall prevention program. I provided the senior center with a fall prevention procedure (figure 1) to maintain the steps of the fall prevention program.

Role of the Project Team

The project team ensured that the project objectives were supported throughout the development of the project until it was implemented. The team included my preceptor, associate director, and center director. The team was engaged in the design of the fall prevention program, ensured that resources were available, and decided on a date to implement the project. My preceptor approved the plan of the project and authorized the piloting of the fall prevention program. The associate director oversaw that the resources needed to accomplish the project objectives were met and encouraged the OAs to participate in the program. The center director scheduled the dates for the fall prevention class, including the 30-day reassessment. The center director was also responsible for reminding the OAs weekly during breakfast, one month before the scheduled date of the class.

Summary

Falls in community-residing OAs have become a public health concern. The aftermath of falls and fall-related injuries has led to an increase in emergent care and hospitalization. The doctoral project confirmed that exercise and a home safety check could decrease falls in OAs by 50% with the inclusion of components from the STEADI algorithm. In order to ensure a successful fall prevention program that would reduce falls in OAs, the RAM and the HBM were used to maintain EBP interventions. The first mode of the RAM, physiologic-physical, was used to address the physical changes that OAs must cope with daily. Also, the OAs better understood the impact of exercise to increase

their mobility, including gait/balance, and thereby reduced falls. The second model, the HBM, guided the fall prevention education for the OAs by determining their readiness to learn new actions that reduced their risk of falls. The QIP is relevant to nursing practice because it identified a practice gap for community-dwelling OAs who needed to increase fall prevention awareness to decrease their rate of falls. Nurses who have been using the STEADI algorithm have provided improvements for the nursing practice as OAs learned the importance of home safety checks and exercise that prevented the outcome of falls and fall-related injuries. The project was held at a community-senior center for OAs aged 65 and above who were mainly Afro-Caribbean. Most of the OAs utilized assistive devices for ambulation. Some of the OAs were retired while the center employed others through federal funding. The senior center has been providing meals and EBP activities for the OAs with the assistance of The New York City Department for the Aging and the NYCDOHMH funding, which has also played a vital role in regulating the operations of the center. My role in the QIP provided a leadership opportunity to collaborate with my preceptor and project team to guide each step of the fall prevention program. Section 3 discussed the causes of falls in OAs, the complication of falls in OAs, interventions initiated, and the evidence generated for the doctoral project, which included the participants, procedures, protections with the inclusion of analysis and synthesis of the results.

Section 3: Collection and Analysis of Evidence

Introduction

A fall is defined as when a person is unintentionally on the ground (Noohu, Dey, & Hussain, 2014). According to the CDC (2017a), a substantial number of OAs began to experience falls beginning at 65 years of age in the United States, and less than 50% disclosed the incident to their primary care physician. One out of four OAs have reported falls, and one out of five falls resulted in hip and head injuries, with a reported death every 20 minutes due to injuries related to the fall (CDC, 2017a). The increase in population growth of OAs has contributed to the burden on the U.S. health care system. Currently, the U.S. health care system is overwhelmed with $31 billion for the annual medical cost for fall-related injuries (CDC, 2017a). The doctoral project was designed to determine whether a fall prevention program that included components of the CDC (2017a) STEADI algorithm with a focus on exercise and a home safety check would improve the prevalence of falls by 50% at one community senior center. The practice gap revealed a need for the development of a practice guideline to decrease the rate of falls by increasing health awareness on the importance of a home safety check and exercise has improved the nursing practice as the rate of falls in OAs decreased. Section 3 provides sources of evidence that supported the EBP fall prevention program and evaluated whether it could reduce falls in OAs with the implementation of exercise and a home safety check.

Practice-Focused Question

A substantial number of OAs began to experience falls at the age of 65 in the United States (CDC, 2017a). The rate of falls has been increasing as the population of OAs grow, thereby increasing the rate of fall-related injuries. The CDC (2017a) projected that, by 2030, the United States will have a population containing 74 million OAs, of whom 49 million will fall, with 12 million falls resulting in injuries. The project site did not have a fall prevention program for its OAs, which would increase their awareness of how to prevent falls. A significant number of OAs have impaired gait-balance with risk for falls. The community senior center has been providing EBP activities but lacked an EBP program that encourages exercise and a home safety program to maintain the safety of the OAs. The project offered the opportunity to identify the practice-gap for community-dwelling OAs at one community senior center. The practice-focused question was: Will the introduction of a fall prevention class that focuses on exercise and home safety checks decrease the rate of falls in OAs by 50% within 30 days?

Sources of Evidence

An in-depth literature review for the years 2014-2019 was initiated by using Walden University databases as the primary sources of evidence to support this EBP project. The databases included CINAHL, ProQuest Nursing & Allied Health Journals, Medline, Ovid Nursing Journals, and Cochrane Database of Systematic Reviews to develop a more profound knowledge regarding the problem. Search terms for the literature review included *quality of life, health, belief, adaptation, exercise, home safety,*

fall in older adults, self-assessment, behavior, injury, quality improvement. The inclusion criteria were falls, falls in OAs, exercise, the complication of falls, and *the management of falls.* The search generated 2,071 articles related to falls in OAs, causes, complications, management, and preventative measures. The selection of articles was based on the focus of the project, the aim of the study, research design, implications and findings, sample, and support for the DNP project.

The most appropriate measurements of falls were searched for in the Test and Instruments area of the Walden database. However, the CDC website provided the latest comprehensive fall reduction program with instruments tailored for use in the project, including educational materials and evaluation of interventions. The sources of evidence located provided support for a fall prevention program that included exercise and a home safety check that decreased the fall rate in OAs.

Review of Findings

The causes of falls in older adults. Through a retrospective study, Kim and Portillo (2018) showed the link between environmental hazards and falls in OAs at a senior living center. The study was designed with 88 independent OAs, which included interviews and the Westmead home safety assessment tool for data collection that identified their specific environmental risks at home. Intrinsic causes of falls such as age, chronic diseases, and physical restrictions/impairments and extrinsic factors such as lighting, flooring, and living space were used to determine elements of fall risks. The study suggested that age and mobility influenced falls due to progressive physical

changes and the need for assistive devices to ambulate (Kim & Portillo, 2018). The study also concluded that the bathroom was the most frequent place of falls due to inadequate lighting, or grab bars to access the shower, and poor flooring, which resulted in severe fall-related injuries and hospitalization (Kim & Portillo, 2018). The study supported the DNP project by providing an opportunity to develop a fall prevention program that increased the awareness of OAs on environmental hazards that causes falls. The study also supported the need for home modification with devices such as handrails, grab bars in the bedrooms, and bathrooms with adequate lighting to maintain safe ambulation at night.

Bogen, Aaslund, Ranhoff, and Moe-Nilssen (2019) conducted a prospective observational study with a 2-year follow-up to determine whether the pattern of gait variability is influenced by the aging process in 85 community-dwelling OAs. The participants selected were asked to ambulate for 10.5 minutes with an inertial sensor that captured the character of their gait pattern, which included normal to fast speed, on even-uneven surfaces in a laboratory. The study showed that speed and variability are directly correlated. Therefore, as OAs age, gait variability increases, and actions that are controlled by gait and posture, such as walking balanced, are affected. The involution of the musculoskeletal system and aging have shown progressive muscle loss and atrophy that begins at the age of 60 years (DiGirolamo, Kiel, & Esser, 2013). Bogen et al. concluded that the pattern of gait variability influences the aging process. The study supported the DNP project because it provided an opportunity to educate OAs about the

importance of daily exercise that decreased their risk of complicated fall-related injuries and deterioration of gait variability that maintained their gait/balance.

Halaweh, Willen, Grimby-Ekman, and Svantesson (2016) used a cross-sectional study that explained the relationship between fall-related efficacy and physical functioning of 176 community-dwelling older adults aged 60 and above. The researchers collected data from instruments that measured physical functioning including handgrip strength, a timed up and go test that measured mobility, a short physical performance battery that assessed functions of lower extremities, a history of the falling checklist that measured past falls and the Arabic version of the Falls Efficacy Scale International that explored the fear of falls during physical and social interventions (Halaweh et al., 2016). The study results showed that non-fallers had increased physical functioning ($p < 0.05$) and Falls Efficacy Scale International has a positive correlation to time up and go and a negative correlation to handgrip (Halaweh et al., 2016). The implications of the study confirmed that functional mobility is interdependent on body strength and self-efficacy of falls and thereby could predict the prevalence of falls. The study supported the project because it provided an opportunity to increase the awareness of OAs during a fall prevention class by including exercise that increased strength/balance and decreased their fear of falls.

The complication of falls in older adults. Kramarow, Chen, Hedegaard, and Warner (2015) study used the National Center for Health Statistics data report of unintentional injuries among adults 65 years and above that resulted in deaths during the

year 2000-2013. The study reported that falls in OAs accounted for 55% of unintentional deaths related to injuries in 2013. Older adults falling have increased from 29.6 to 56.7 per 100,000, which resulted in the death of 90,640 OAs above 65 years of age due to intentional falls (Kramarow et al., 2015). The study has increased the awareness of the trends in the rising mortality rates of unintentional injuries related to falls within the United States. Murphy, Xu, Kochanek, and Arias (2018) provided data that concluded that accidental injuries in OAs have been part of the first ten selected leading causes of death in the United States and has increased to 4.2%. The reported trends in unintentional fatal injuries among OAs provided an opportunity for community senior centers to get engaged in a fall prevention program that could decrease the rate of falls in their OAs and maintain their QOL.

Wood, Moon, Sun, Bishnoi, and Sosnoff (2019) hypothesized that the older versus the younger population falls differently due to the aging process. The author inferred that the age difference leads to a variation of head injuries and confirmed that age influences fall-related head injuries. The study included 15 young adults aged 18-30 and 10 OAs aged 55-75 who had good physical health and ability to withstand the procedure. The participants were subjected to fall sideways on a mat three times bilaterally with the acceleration of head impact documented. The study concluded that OAs have a higher proportion of head impact and postural sway than younger adults (Wood et al., 2019). Wood et al. concluded that OAs have neuromuscular changes that contribute to the decline of neck strength and function by 35-45% between 20-60 years due to influences

of the sternocleidomastoid muscles controlling neck movements. The study supported the DNP project for engagement in a fall prevention program that educated OAs on the influence of age as it impacts fall-related head injuries. The study also supported the importance of daily exercises to increase muscles that stabilizes the head to avoid the impact of head injuries during a fall.

Berg and Carlson (2017) developed a pilot study for a fall registry that collected data and identified factors of falls, such as the environment and severity of injuries for preventive programs to design appropriate interventions. The researchers gathered data from interviews, and medical records from four different states (Kansas, Maryland, Oregon, and Texas) on 49 patients, average age 78 years, admitted with fall-related injuries at a Level 1 trauma center. The study results showed that most of the fall-related injuries were head injuries that occurred at home alone while walking with impaired gait/balance (Berg & Carlson, 2017). The study provided support for the project because it guided the development of a fall prevention program that educated OAs on fall factors and consequences of fall-related head and hip injuries with the best interventions to prevent placement in rehab or long-term arrangement.

The interventions initiated. Guirguis-Blake, Michael, Perdue, Coppola, and Beil (2018) conducted a systematic literature review that provided one of the best fall prevention intervention that decreased falls, morbidity/mortality, and took a closer look at ineffective interventions. The design of the study included seven fall prevention interventions from 62 random clinical trials (n = 35058) and examined three interventions

that included multifactorial interventions, exercise, and Vitamin D supplements. The reviews concluded that high dosages of Vitamin D presented health concerns and had no significant effect on the prevention of falls as recommended by the United States Preventive Service Task Force in 2012 (Guirguis-Blake et al., 2018). Multifactorial interventions specific to fall occurrences, assessment, and referrals helped reduce falls but did not significantly impact the results of morbidity and mortality. Exercise interventions occurred for 12 months, three days per week, and focused on gait/balance and function, with encouragement to participate as a group and continue at home. The results of exercise interventions presented a significant outcome for fall reduction and fall-related injuries; however, there was no direct correlation between exercise and the incidence of falls (Guirguis-Blake et al., 2018). The study supported the DNP project because it provided a platform that encouraged a community senior center to provide exercise programs for OAs. The community senior center could encourage and educate OAs that exercise has been one of the best EBP actions to reduce falls and fall-related injuries.

Kurtkoti (2014) introduced a descriptive study that provided the opportunity to identify environmental hazards and determined compliance readiness for suggested home modifications. About 50 randomly selected OAs, aged 60 years and above, were observed and interviewed to identify risks within their homes for a modification that improved their QOL. The bathroom and toilet areas had the most common hazards, followed by the living room, stairs, kitchen, and finally, the bedroom. Approximately 80% of OAs did not

comply with making the necessary modification in their homes to modify the risks of falling. The study provided several safety recommendations for amendment. The bathroom in 28 homes had slippery floors, while the living room of 26 homes had curled edged carpets. The steps in the staircases of 23 homes were unequal, with doorway entrances too small. The study recommended toilet seats and showers be within reach, with avoidance of curled edged carpets and clutter. Furthermore, there should be equal steps, handrails, adequate lighting with doorways, and entrances at 36 inches wide. The study provided an opportunity to educate OAs on how to identify areas with the most common hazards to initiate home modifications that would maintain their safety and QOL.

Russell, Taing, and Roy (2017) measured the level of awareness for 1050 community-dwelling OAs and their adherence to six recommended fall prevention intervention and home modifications in Ottawa, Canada. The study was designed with telephone surveys that collected information on several degrees of awareness as it related to falls, fear of falling, annual medication reviews, eye exams, physical activity, and home safety appliances. There was 90% awareness for safety devices such as grab bars, night lights, and raised toilet seats, and 76% were cognizant of the need for physical activity. However, as participants aged, their knowledge to decrease falls became inadequate to maintain their safety (Russell et al., 2017). Influential factors such as access, cost, and health condition also determined the level of adherence. Public Health Canada has recommended that fall prevention interventions consider OAs and their

caretakers, and others involved in their health protection (Russell et al., 2017). The Ottawa Public Health's fall prevention approach included statistical measures of falls, stakeholders' engagements with a pharmacist to review medication and a primary care physician to maintain fall-related assessment (Russell et al., 2017). The Ottawa Public Health's fall prevention approach also recommended programs that encouraged physical activity, increase access, and home safety assessment to provide modification that maintains safety, self-screening to prevent falls (Russell et al., 2017). Furthermore, there has been a continuous need for programs that offer the opportunity for public and clinical experts to understand how to identify and reduce falls in OAs (Russell et al., 2017). The study supported the DNP project and provided an opportunity to understand the level of awareness of OAs to educate them on the six recommended fall prevention interventions.

Participants

The QIP that addressed the incidence of falls in OAs involved participants age 60 years and above at one community senior center. The selected community senior center has 60 to 100 male and female members who were predominantly Afro-Caribbean, with a significant number of members who ambulated with assistive devices and has impaired gait/balance. Members of the senior center who visited weekly and engaged in the activities of the center were selected as eligible participants based on their score on the FRSA 12-item questionnaire (see Appendix A). The inclusion process considered the 30 participants who scored 4 points or more and were considered at risk for falls. They were notified of their qualification to enter the fall prevention program on a volunteer basis.

The purpose of choosing the participants with a score of 4 or greater was to select a segment of the population that represented the OAs who have impaired gait/balance issues and have been utilizing assistive devices, such as walkers, canes, and wheelchairs to support ambulation due to their risk for falls.

Procedures

Once the authorization of the Walden University Institutional Review Board (IRB approval number 02-24-0620171) was obtained, I notified the executive director, center manager, and associate director at the community senior center to begin the implementation of the project. Before beginning the project, I first met with the associate director to discuss the cost of the educational materials needed for the project, including refreshments for the educational workshops. I notified the associate director that I would be taking full responsibility for the cost of the materials and refreshments to relieve the institution of the financial burden. Secondly, I met with the center manager to discuss the schedule dates, time, and location for the workshop. The center manager committed to providing the OAs with weekly reminders during breakfast, beginning one month before the scheduled date of the program proceedings. The commitment also included assisting the OAs to gather in the conference room after breakfast to begin the workshop. Finally, before I began the project, the executive director revised the details of the data collection, evaluation process, cost of materials for education, education outline, and expected outcome.

On the scheduled day of the workshop, the participants were gathered in the conference room after breakfast. They sat at a table and were briefed on the purpose and benefits, including eligibility into the program with the understanding that it was a voluntary basis. The participants were encouraged to ask questions during the presentation with feedback provided. The OAs were given the pretest questionnaire and a pencil, with instructions on how to complete it. They included the initial of their first and last name with the address of their house number on the pretest questionnaire, to create easy identification of their scores. It was estimated that it would take approximately 15 minutes for them to complete it. They placed the completed questionnaire in an envelope marked pretest questionnaire, which was collected immediately after completion. The participants were directed to enjoy the refreshments provided while their questionnaires were immediately scored at a separate table 10 feet away within the same conference room. Participants who scored 4 points and higher were eligible for the program. After scoring the questionnaires, participants were given back their results in a sealed envelope with notification of eligibility into the program. Participants were called individually to the scoring table to meet for a 5-minute discussion about their test results and eligibility into the program. During the discussion, the participants decided if they would like to volunteer in the program. Upon deciding, the participants were directed back to their designated seats in the conference room to continue into the fall prevention program. Those participants who did not make the score for eligibility into the program and felt the need to attend the education intervention were encouraged to remain. However, the

noneligible participants were not part of the data collection process for the posttest questionnaire. Before beginning the class, the pretest questionnaires were placed in a combination locked file cabinet in the center manager's office, which also remained locked.

The outline for the primary care education for the project was revised by the executive director, center manager, and associate director with suggestions for modifications discussed. The outline of the workshop was intended to increase awareness of the causes, complications, and interventions tried with falls in OAs. First, the education intervention included understanding the causes of falls in OAs, including age-related progressive physical changes affecting endurance, mobility, and environmental hazards. Second, the education intervention included information about the complications of falls in OAs such as physical injuries, most commonly head and hip, long-term placement, and death. Third, the education intervention mentioned interventions tried, such as daily exercises to increase endurance, strength/balance. The participants were encouraged to join the selected exercise program within their senior center. Also, they were encouraged to participate in recommended exercises as tolerated (see Appendix C). Participants also increased their awareness of how to identify environmental hazards at home for correction. The fall prevention class utilized the STEADI check for safety brochure to locate and fix hazards at home (see Appendix B). The framework of the RAM was used to guide the education interventions on exercise and how it impacts the aging process and falls in OAs. The HBM was also used to understand the attitudes of the

OAs during their challenges to modify their lifestyles and make new health decisions. The primary care fall prevention class consisted of a 1-hour verbal and visual presentation using a poster board. The workshop was presented in the conference room with the OAs seated at the same table where the pretest questionnaires were completed. The participants were offered refreshments throughout the workshop. They were encouraged to ask pertinent questions during the oral/visual presentation with feedback provided to them respectfully. After the 1-hour oral presentation was completed, the OAs were given brochures to take home. The brochures reinforced education provided, including safety checks, to locate and correct environmental hazards within their homes, exercise interventions, and other recommended fall prevention actions (see Appendices B, C, and D). Before the departure of the group, after the class was completed, the OAs were reminded that there would be a 30-day follow-up. They were also reminded daily during breakfast by the center manager, until the designated day of the follow-up. Participants were reevaluated within 30 days to determine the effectiveness of the fall prevention program.

On the scheduled day of the posttest follow-up, the participants met in the same conference room for 60 minutes after breakfast. The OAs were briefed on the purpose of the project follow-up. They were provided with advance notification of possible continuation in the fall prevention workshop that was also scheduled on the same day. The participants were given a questionnaire for the posttest with a pencil and clarification of each question before beginning. Also, they were briefed with instructions on how to

complete the posttest within 15 minutes of the allotted time for completion. The participants included the initial of their first and last name with the address of their house number on the posttest questionnaire, to create easy identification of their scores. The 12-item posttest questionnaire provided data collection for the post-score analysis of the OAs' risk for falls. Upon completion of the posttest questionnaires, the OAs placed them in the enveloped marked posttest. The questionnaires were collected and scored immediately at a separate table 10 feet away within the same conference room and placed in a folder. The OAs were given their scores in a sealed envelope while in the conference room. The results of the posttest questionnaire were kept in a combination locked file cabinet in the center manager's office in which the doors remained locked. As the OAs understood the benefits of daily exercise to increase their strength and balance with the removal of environmental hazards from their homes, their risk of falls decreased, and their QOL was improved. The DNP project brought urgency to consider implementing a fall prevention program to decrease the rate of falls in OAs. There was ongoing feedback from the team and final approval from the executive director to launch the project within the organization.

Retrospective data on the number of falls were collected the same day before the fall prevention education event was held. The de-identified data collected captured the incidences of falls for the past thirty days from the pretest questionnaire prior to the education event. The data collected was discussed with the executive director, associate director, and center director and was transferred into a Microsoft Excel spreadsheet

software. The data collected was kept on a personal storage device in a locked cabinet in the center manager's office.

Thirty days later, after the education event, prospective data on the number of falls were collected. The de-identified data were collected from the posttest questionnaire and discussed with the executive director, associated director, and center director. The data was placed into a Microsoft Excel spreadsheet with a secured password on my personal laptop and placed into a locked cabinet in the center manager's office that also remained locked. The number of falls before the education event was compared to the number of falls after the education event.

Instruments

Stay Independent brochure. The DNP project used components of the STEADI algorithm (CDC, 2017f), with a focus on the Fall Risk Self-Assessment Tool (FRSAT) from the CDC's (2017b) *Stay Independent* brochure, as the main component chosen for inclusion into the fall prevention class (see Appendix A). The fall prevention class included two other components from the STEADI algorithm that recommended exercise and encouragement to check for safety at home to prevent fall hazards (see Appendices B & C). The instrument was chosen to collect data on the participant's risk for falls to determine their fall rate and establish eligibility into the program. The FRSAT, one component of the STEADI algorithm, was used to score the fall risk. The tool used is a 12-item questionnaire that provided a total of 14 points with 4 points as the inclusion criteria. The questionnaire collected data on the history of falls, assistive devices,

impaired gait/balance, fear of falls, lower extremity strength, incontinence, peripheral nerve impairment, medications, and depression. There was a focus on three key questions that directly contributed to the risk of falls, including a history of falls, impaired gait/balance, and fear of falls. The questions used were in a statement format with a yes or no answer. There were twelve questions that had a response of "no" with a value of 0 points, and questions that had a response of "yes" had a 1-point value. In Addition, there were two questions out of the twelve with a 2-point value that brought the total to 14 points. Participants who scored 4 points and above were considered at risk for falls and became eligible to participate in the fall prevention program.

Validity and reliability of the Fall Risk Self-Assessment Tool. Rubenstein, Vivrette, Harker, Stevens, and Kramer (2011) established the validity and reliability of the FRSAT. The validity of the tool was accomplished by comparison made to the American/British Geriatrics Society clinical guidelines for fall predictions. The clinical exam (CE) has given providers an EBP checklist that utilizes questions with a scoring algorithm to make fall predictions for OAs. A statistical approach was used to provide construct validity to show that the tool could determine risk for falls with a scoring algorithm. The comparison of the FRSAQ and the CE were made by two different geriatricians. The first geriatrician conducted a standard evaluation with metrics, while the other initiated a clinical approach. Inferences were drawn based on item agreement about the fall risks in the outcome of scores and compared to the gold standard practice guidelines of the American/British Geriatrics society with consideration of four

approaches. Finally, the algorithm was revised three times to conclude validity and reliability for the acceptable use of the tool.

The first comparison utilized to draw inferences about the FRSAQ, and the CE used a sample description with responses to individual question items for which frequency and percentage of age group were considered. About 70% of the responses on both FRSAQ and CE agreed with gait/balance, fear of falls, weakness leading to falls, and were direct contributors to falls (Rubenstein et al., 2011). The statistical correlation and coefficient alpha reliability and consistency yielding per consecutive algorithms revisions were .795, .788, and .795 (Rubenstein et al., 2011). The FRSAQ was also validated by Nithman & Vincenzo (2019) who predicted an overall 95.2% specificity for the three key questions, 100% sensitivity in identifying falls in the past 12 months, and 76% sensitivity that determined future falls in a six months range (Rubenstein et al., 2011).

The second comparison utilized to draw inferences about the FRSAQ, and the CE showed similarities between questions and responses when the FRSAQ and CE were compared. Questions that were considered complex were eliminated. The FRSAQ and CE were itemized then placed together based on similarity and were validated with the history of falls, which yielded Cohen's Kappa = .800, $p < .0001$ (Rubenstein et al., 2011).

The third comparison utilized to draw inferences about the FRSAQ and the CE addressed a tally of the fall risk scores for the CE and FRSAT were calculated individually, then a comparison of scores were made by the Pearson correlation

coefficient, linear regression, and scatter plot. The FRSAT was further tested for validity by using the receiver operation characteristics to decide how efficient the FRSAT was able to identify participants at risk for falls. The algorithm revisions showed reliability because both the FRSAT and the CE showed that muscle weakness, gait/balance impairment, and history of falls were the highest fall predictors (Rubenstein et al., 2011).

The final comparison approach utilized to draw inferences about the FRSAQ, and the CE examined the FRSAT and CE scores for all algorithms by implementing an iterative revision process. The scores for the FRSAT and CE questions were further evaluated, and questions that did not show similarity indicated a low Kappa 0.30 were eliminated before the Pearson correlation coefficient was applied. The EBP frequentative process showed reliability with 96.8% sensitivity on the original algorithm and 100% on the second, and 66.7% specificity on the original algorithm with an improvement of 83.3% (Rubenstein et al., 2011). The STEADI algorithm has been validated because it provides a precise measurement of risk factors that could make reliable predictions of falls (Lohman et al., 2017). The validity of the STEADI algorithm has generated the resources needed to support providers and community-based programs to provide measures for the prevention of falls in OAs (Lohman et al., 2017).

Protections

Approval of the doctoral project was obtained from the Walden University IRB on 02/24/2020 before I implemented the project. The executive director of the senior center approved the development and implementation of the plan. The identity of the

participants who completed the questionnaire was protected with the inclusion of their first and last initials and house number on the questionnaire. The OAs were given verbal information about the details of the project including, voluntary participation, with the option to withdraw at any given time. There was a consideration for the protection of the OAs health information with the proper storage of the questionnaires. The completed questionnaires were kept with the center manager in a locked file cabinet in a folder and labeled DNP project. There was no harm to the subjects because the project was focused primarily on education.

Analysis and Synthesis

The primary objective of the doctoral project was to introduce a fall prevention program for OAs that focused on exercise and home safety checks to decrease the rate of falls by 50% within 30 days at one community senior center. Data collection for analysis and synthesis were retrieved from the members of the senior center who met the inclusion criteria for the program. Data were obtained from the pre-educational survey of the 12-item questionnaire that provided information on the OAs' risk for falling (see Appendix A). Fall prevention education was given to OAs, who scored four and above on the 12-item questionnaire. The OAs took brochures home to provide continuous educational reinforcements on fall prevention interventions. Prospective data were obtained from the post-education survey of the 12-item questionnaire that determined the effectiveness of the education provided. Descriptive statistics were used to compare the scores of the fall rate on the pretest and posttest 12-item questionnaire before and after the education was

given. The retrospective fall rate was compared to the prospective fall rate for data analysis. The data was transferred into a Microsoft Excel spreadsheet software that organized and analyzed the data with the visual data depicted in graphs and tables. De-identified data regarding the number of falls pre- and post-education were analyzed using descriptive statistics. Descriptive statistics provided a platform to obtain new information to help explain a phenomenon (Grove et al., 2013). The synthesis of the DNP project brought closure to the practice gap of an EBP fall prevention program at one community senior center that reduced falls in OAs.

Summary

Fall-related injuries in community-dwelling OAs 65 and above have been a public health matter that requires immediate attention. The doctoral project sought to answer the practice focus question by utilizing an approach to decrease the rate of falls within thirty days. The CDC website provided a comprehensive fall prevention program; however, components of the STEADI algorithm that included brochures, exercise, and home safety checks were used to educate and increase the awareness of fall prevention interventions to decrease the rate of falls in OAs. The findings reviewed provided data on the causes, complications, and interventions. The findings also provided support for improvement in environmental hazards and exercise that decreased the fall rate. The interventions provided closure for the nursing practice gap identified and improved the nursing practice as practice guidelines were implemented to decrease the rate of falls. The participants for the DNP project reflected the number of OAs who scored four and above on the pretest

questionnaire. The project was designed for OAs to engage in a fall prevention class and return for a thirty-day follow-up to complete a posttest questionnaire. The FRSAT provided validity and reliability and was used as the instrument to determine the OAs' risk for falls. Retrospective and prospective de-identified data collected on the participants were transferred into a Microsoft spreadsheet and remained protected within the facility. Section four focused on the findings and implications, recommendations, the contribution of the doctoral project team, the strength and limitations of the project.

Section 4: Findings and Recommendations

Introduction

Falls have been a significant public health concern among community-dwelling OAs. Fall-related injuries have been identified as the primary cause of hip and head injuries in OAs (CDC, 2017a). The New York City Hospitals have provided emergent care to at least 21,000 OAs, with 16,000 admissions related to falls annually (NYCDOHMH, 2015). I assessed a substantial number of OAs at a community-based senior center with gait-balance issues that required assistive devices such as walkers, canes, and wheelchairs to assist with ambulation. Some of the OAs were witnessed to experience falls and near-missed falls due to a severe gait-balance problem. Recent data identified 30 OAs at risk of falls; however, the organization did not have any programs to prevent falls for OAs. The nursing practice gap identified for community-dwelling OAs at one community senior center was the need for a fall prevention program to decrease the rate of falls. The practice-focused question was: Will the introduction of a fall prevention class that focuses on exercise and home safety checks decrease the rate of falls in OAs by 50% within 30 days?

The goal of the doctoral project was to implement components of the STEADI algorithm to reduce falls in OAs at one senior center. The CDC (2017a) designed the STEADI algorithm to improve nursing practices and decrease the rate of falls in OAs. Sources of evidence for the project included an in-depth literature review initiated by using Walden University databases as the primary sources of evidence to support the

EBP project. The search generated articles related to falls in OAs, causes, complications, interventions tried, and preventative measures. The CDC website provided the latest comprehensive fall reduction program, utilizing the STEADI algorithm. This program provided instruments tailored for the project, including educational materials and evaluation of interventions. The CDC fall prevention program has provided support for exercise and home safety checks to decrease the fall rate in OAs. The evidence obtained for the OAs' risk for falls included the FRSAT as the main component chosen for inclusion into the fall prevention class (see Appendix A). The FRSAT is a 12-item questionnaire that provided a total of 14 points with 4 points as the inclusion criteria. The analytical strategies used included a comparison of de-identified data of the retrospective fall rate to the prospective fall rate for data analysis using descriptive statistics and depicted in a Microsoft Excel spreadsheet software.

Findings and Implications

The aim of the QIP was to implement components of the STEADI algorithm to reduce falls by 50% in OAs at one community senior center. The practice-focused question was: Will the introduction of a fall prevention class that focuses on exercise and home safety checks decrease the rate of falls in OAs by 50% within 30 days? The objective of the doctoral project was to increase the OAs' awareness of falls, causes, complications, and interventions tried as they engaged in a fall prevention workshop to reduce their rate of falls. Data outcome report generated for the workshop included rate

of falls before implementation, implementation of the STEADI program, and the rate of falls after implementation for 30 OAs.

Objective

The QIP focused on increasing the OAs' awareness of falls, causes of falls, complications as a result of falls, and interventions to decrease falls as they engaged in a fall prevention workshop to reduce their rate of falls. Prior to the workshop, I assessed a substantial number of OAs at the community-based senior center with gait-balance issues who required assistive devices such as walkers, canes, and wheelchairs to assist with ambulation. Some of the OAs were witnessed to experience falls and near-missed falls due to a severe gait-balance problem. However, the organization did not have any programs to prevent falls for their OAs. I obtained authorization from the executive director to develop a fall prevention program for the senior center. Data were obtained from 30 OAs through the FRSAT (see Appendix A). The 12-item questionnaire provided data collection for the pretest and posttest score analysis of the OA's risk for falls. The initial of the first and last name with the address of the house number were used to de-identify the participants.

Data Outcome Report

Rate of falls pre-implementation. On the scheduled day of the workshop, 30 participants were presented with the 12-item questionnaire as the assessment tool to determine their risk for falls and eligibility into the fall prevention program. Participants learned of their scores privately, in a sealed envelope with notification of eligibility into

the program. Participants who scored 4 points and higher became eligible; however, noneligible participants were encouraged to remain in the program but were not part of the data collection process. After completion of the pretest questionnaire, the questionnaires were secured in a combination-locked file cabinet. The results of the 12-item questionnaire (see Table 1) showed that 15 (50%) OAs experienced a fall in the past year and were also advised to use a cane or walker to move about safely. Twenty OAs (66.67%) felt unsteady when walking and held onto furniture during ambulation, whereas 30 (100%) felt worried about falling. Ten OAs (33.33%) reported the need to push with their hands to stand up from a chair and had difficulty stepping onto a curb. There were only 5 (16.67%) OAs who rushed to the toilet and took medication that caused light-headedness. There were no reported peripheral issues, and only one (3.33%) OA reported the need to take medication to sleep and felt sad or depressed. The data generated from the 12-item questionnaire validated the need for the fall prevention program.

Table 1

Fall Risk Self-Assessment Tool: Rate of Falls Pre-Implementation

Question	Number	Percentage
I have fallen in the past year.	15	50
I use or have been advised to use a cane or walker to get around safely.	15	50
Sometimes I feel unsteady when I am walking.	20	66.67
I steady myself by holding onto furniture when walking at home.	20	66.67
I am worried about falling.	30	100
I need to push with my hands to stand up from a chair.	10	33.33
I have some trouble stepping up onto a curb.	10	33.33
I often have to rush to the toilet.	5	16.67
I have lost some feeling in my feet.	0	0
I take medicine that sometimes makes me feel light-headed or more tired than usual.	5	16.67
I take medicine to help to me sleep or improve my mood.	1	3.33
I often feel sad or depressed.	1	3.33

Note. The checklist above was developed by the VA Greater Los Angeles Healthcare System Geriatric Research Education & Clinical Center (GRECC) and Affiliates and is a validated fall risk self-assessment tool (Rubenstein et al., J safety res; 2011: 42(6)493-499). Retrieved from the CDC STEADI website: https://www.cdc.gov/steadi/pdf/STEADI-Brochure-StayIndependent-508.pdf

Implementation of the STEADI program

Participants who scored 4 points and higher on the 12-item pretest questionnaire were offered the fall prevention workshop. The OAs' risk for falls was communicated among the project team, including the outline for the primary care education for the project prior to implementing the fall prevention workshop. The education interventions of the workshop focused on helping the OAs to understand fall causes, complications, and interventions. Participants were given brochures to reinforce education provided, including safety checks, with instructions to locate and correct environmental hazards

within their homes, exercise interventions, and other recommended fall prevention actions (see Appendices B, C, and D). During the 1-hour oral/visual presentation, participants responded with enthusiasm, their questions were answered, and feedback was received.

Implementing Components of the STEADI Program

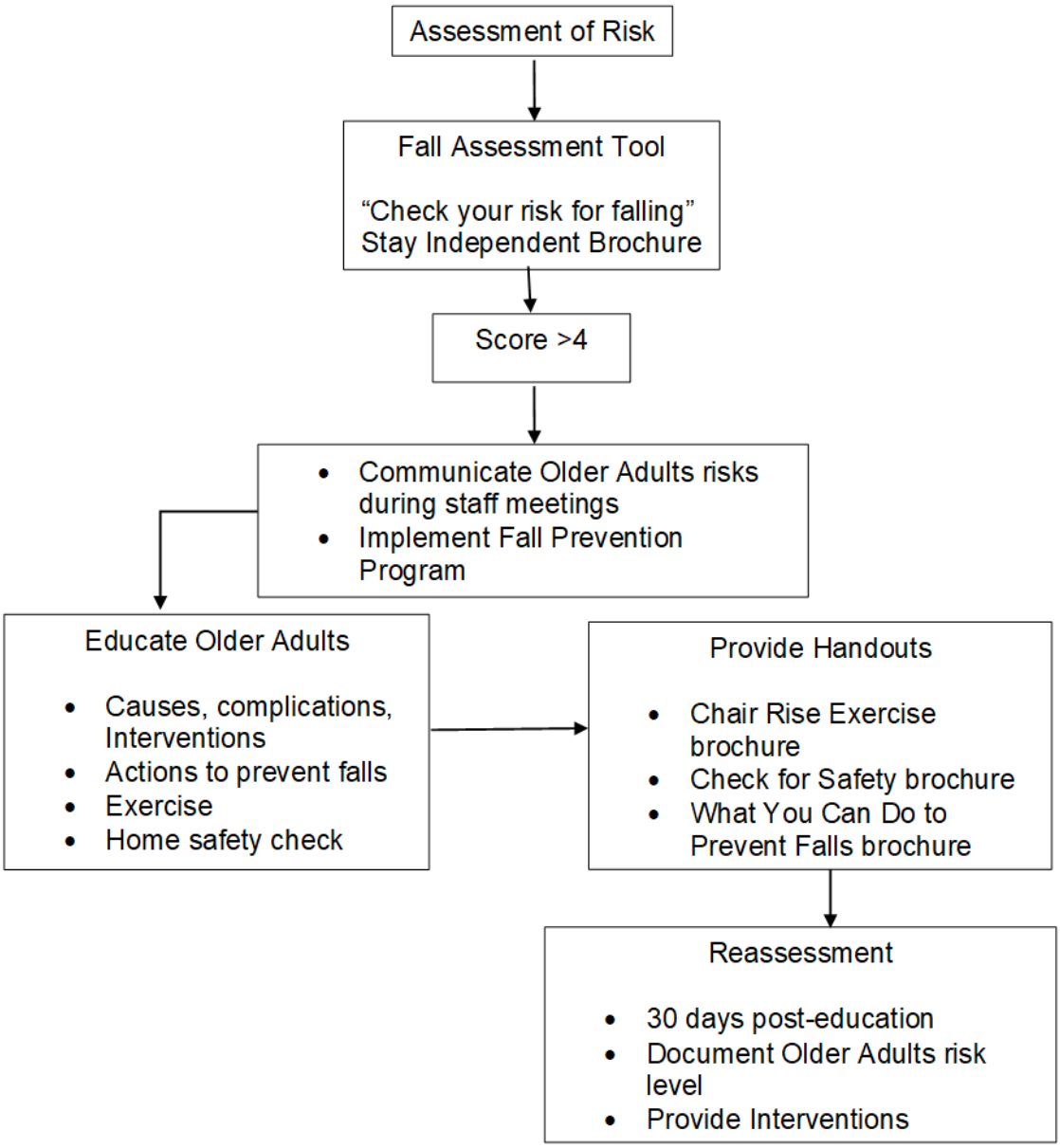

Figure 1. Fall prevention procedure. Retrieved from the CDC STEADI website: https://www.cdc.gov/steadi/pdf/STEADI.Algorithm-508.pdf

Rate of Falls Post-Implementation

On the scheduled day of the posttest follow-up, participants were provided with advance notification of possible continuation into the fall prevention workshop. Participants were provided clarification with the 12-item posttest questionnaire as the reassessment tool to determine their risk for falls and eligibility into the fall prevention program. Participants learned of their scores privately, in a sealed envelope with notification of eligibility into the program. Participants who scored 4 points and higher were encouraged to remain to continue in the fall prevention workshop. After completion of the posttest questionnaire, it was secured in a combination locked file cabinet. The result of the 12-item questionnaire detailed below in Table 2 showed that 2 (6.67%) OAs experienced a fall in the past year, and 15 (50%) were advised to use a cane or walker to get around safely. Five OAs (16.67%) felt unsteady when walking and held onto furniture during ambulation, while 5 (16.67%) felt worried about falling. Two (6.67%) OAs reported the need to push with their hands to stand up from a chair, and difficulty stepping onto a curb. One (3.33%) OA who needed to rush to the toilet and took medication, which caused light-headedness. There were no reported peripheral issues, although 1(3.33%) OA reported the need to take medication to sleep and felt sad or depressed. The data generated from the 12-item posttest questionnaire validated that the OAs' awareness of falls, causes of falls, complications related to falls, and interventions to prevent falls reduced their rate of falls. The objective for the QIP was met as the OAs' risk of falls was decreased. Although the data was only collected for one month after the

educational program, results showed that a fall prevention program focused on exercise and a home safety check demonstrated a trend in the rate of falls. Continuing to monitor the fall rate over the next year will determine the long-term effectiveness of the educational program.

Table 2

Fall Risk Self-Assessment Tool: Rate of Falls Post-Implementation

Question	Number	Percentage
I have fallen in the past year.	2	6.67
I use or have been advised to use a cane or walker to get around safely.	15	50
Sometimes I feel unsteady when I am walking.	5	16.67
I steady myself by holding onto furniture when walking at home.	5	16.67
I am worried about falling.	5	16.67
I need to push with my hands to stand up from a chair.	2	6.67
I have some trouble stepping up onto a curb.	5	16.67
I often have to rush to the toilet.	1	3.33
I have lost some feeling in my feet.	0	0
I take medicine that sometimes makes me feel light-headed or more tired than usual.	5	16.67
I take medicine to help to me sleep or improve my mood.	1	3.33
I often feel sad or depressed.	1	3.33

Note. The checklist above was developed by VA Greater Los Angeles Healthcare System, Geriatric Research Education & Clinical Center (GRECC) and is a validated fall risk self-assessment tool (Rubenstein et al., J safety res; 2011: 42(6)493-499). Retrieved from the CDC STEADI website: https://www.cdc.gov/steadi/pdf/STEADI-Brochure-StayIndependent-508.pdf

Comparison of Pre and Post Test Scores

The objective of the QIP was met in reducing the OAs' risk of falls. The analytical strategies compared the de-identified data of the retrospective fall rate to the data of the prospective fall rate using descriptive statistics and were depicted in a Microsoft Excel spreadsheet software. The findings of the comparison for the pretest and posttest analysis of the 12-item questionnaire showed a significant improvement in the OAs' awareness to prevent falls after the workshop. The percentage of OAs at risk for falling before the workshop decreased from 50% to 6.67% (Figure 2). The fall prevention workshop did not present any limitations or outcomes that impacted the findings.

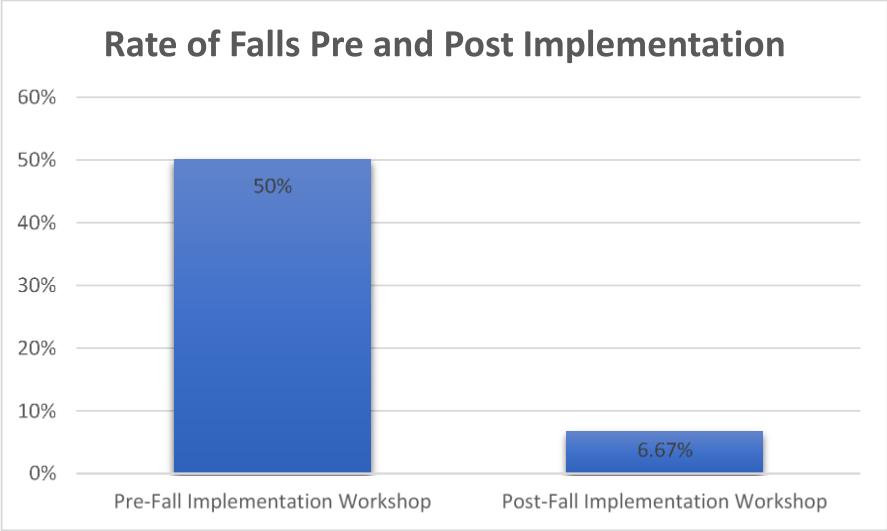

Figure 2. Rate of falls pre and post implementation.

Implications

Implications of the project outcome provided evidence that validated that the senior center's lack of a fall prevention program contributed to the high rate of falls among OAs. The findings from the pre-education questionnaire provided support for the urgent need for institutions, such as community senior centers, to implement a practice protocol for falls. An EBP fall prevention program used for their OAs could increase awareness of the importance of a home safety check and exercise. Therefore, improving the rate of falls in OAs could bring closure to the practice gap. The implication of the project outcome is a positive social change that could be enforced by future DNP graduates to encourage community leaders and local government to support policies that provide funding to maintain EBP programs for senior centers to maintain QOL.

Recommendations

The increase of falls and fall-related complications in OAs aged 60 years and older have constituted a substantial risk to the OAs at the community senior center. With the moderate level of falls, impaired gait/balance, and use of assistive devices, the absence of a fall prevention program contributed to their high prevalence of falls. The recommendations (below) provided a focus on assessing the OAs on their risk for falling with the education provided on fall prevention interventions and follow-up to ensure that their risk for falls was addressed to maintain their safety and QOL.

Assessment

Initial assessment of the OAs' risk of falls has been crucial for community senior centers to identify their members who are at risk for falling to provide necessary EBP interventions. The assessment identified the need for a fall prevention program to decrease falls and fall-related injuries, including the complications of falls. A comprehensive assessment could identify critical factors, such as environmental hazards and physical mobility limitations that have directly contributed to falls in OAs (Kim & Portillo, 2018). A recommendation was provided to the community senior center to assess every OA with the FRSAT as the initial assessment to determine the OAs' risk for falling, thereby preventing fall-related injuries and complications.

Education

Insufficient awareness of physical restrictions/impairments and environmental hazards has shown a direct link to the high prevalence of falls, fall-related injuries, and complications in OAs (Kim & Portillo, 2018). Falls in OAs have been linked to complications such as head and hip injuries that sometimes lead to death (CDC, 2017a). One recommendation that must be considered is that OAs need to be educated on the causes and complications of falls and interventions to decrease/prevent falls. Recommendations have been essential for OAs to learn the impact of daily exercise to increase their strength and balance, and home safety checks to remove environmental hazards from their homes to decrease their risk for falls and improve their QOL. The community senior center should encourage their OAs to engage in their fall prevention

program and provide brochures on home safety checks, exercise, and actions to prevent falls (Appendices B, C, D) for reinforcement of education provided. Recommendations were provided to the community senior center to utilize the falls prevention procedure (Figure 1) as a guideline to provide the systematic steps for the fall prevention program to prevent falls for their OAs.

Follow-up

The community senior center should provide follow-ups with the OAs during their visit to the senior center and via telephone weekly for 30 days after the initial fall workshop to encourage daily revision of the education handouts and participation in the exercise program of the center. The follow-up of OAs' risk for falling could provide the opportunity to continue in a fall prevention program (CDC, 2017a). Furthermore, the Ottawa public health's fall prevention approach recommended programs that encouraged ongoing self-screening of OAs' risk for falling with interventions provided to modify and maintain their safety (Russell et al., 2017). A recommendation was provided to the senior center for ongoing assessment of the OAs' risk for falling to determine progress in the fall prevention workshop. It is also recommended to continue to monitor the fall rate over the next year to if the program was effective in decreasing falls rates in OAs in the long-term.

Contribution of the Doctoral Project Team

The project team consisted of the team leader, executive director, center manager, and associate director of the community senior center. The project team played an

essential role in the successful planning, implementation, and evaluation of the fall prevention program. The team maintained continuous communication via email and telephone conferences weekly throughout the project development to discuss the progress of the procedural steps and concerns regarding the project. The Associate Director oversaw that the resources needed to accomplish the project objectives were met and encouraged the OAs to participate in the program. The Associate Director allowed the use of the facility computer laboratory to print handouts and decrease the cost of educational materials needed for the project. As the team leader, I decided to facilitate the cost of refreshments to relieve the financial burden of the institution. It was imperative that a reasonable budget was established to maintain the goals of the project. A budget could provide the discipline needed for an organization to explore available funding and maintain their level of income (Guiliana, 2016). The center manager designated the scheduled date, time, and location for the fall prevention workshop, including the 30-day follow-up reassessment. The center manager was also responsible for reminding the OAs weekly during breakfast, one month before the class's scheduled date. The center manager also reached out to OAs weekly via telephone to encourage them to read the education handouts. Constructive feedback on the delivery of the fall prevention workshop was discussed during collaboration with the team. The support of team engagement in the outcome objectives has provided a better understanding of the project's purpose, significance, and measurable results (Kettner, Moroney, & Martin, 2017). On the day that the workshop was scheduled for implementation, the project team

showed enthusiasm. The center manager assisted the OAs to gather in the conference room after breakfast to begin the workshop. The center manager also helped maintain the security of the de-identified data of the OAs for data analysis reporting. The executive director revised the data collection, evaluation process, cost of materials for education, education outline, and expected outcome. The key to project planning has been to consider all aspects of the project to maintain success. The executive director approved the plan of the project and authorized the piloting of the fall prevention program. I was inspired by my preceptor for her transformational leadership skills as she encouraged and motivated the team to maintain respect and cohesiveness. Transformational leadership has provided an opportunity for team engagement to maintain the quality outcome of interventions (White, Dudley-Brown, & Terharr, 2016).

The outcome evaluation for the project was discussed with the team, and the executive director ensured that the board members were also aware of the data outcome. The board was also assured by the executive director that the fall prevention program met the EBP guidelines to meet annual regulatory state requirements. During the final meeting with the team, the executive director suggested that I assist in developing the fall prevention policy for the institution to maintain quality outcomes. Policies have been a vital component of leadership and health care delivery to guide interventions for the achievement of clinical outcomes (Dewald, 2020). The executive director authorized the project for launching within the community senior center, and the team was educated on how to utilize the fall prevention procedure (Figure 1). The project's outcomes provided a

positive impact on the team, and the executive director recommended that I extend the project to their other neighboring facilities. The stakeholders also decided that a cost-effective proposal would be needed to establish and secure adequate funding from the local government to maintain the program. Cost-effectiveness takes into consideration the project goal, data outcome, expenses generated to maintain the success of the project (Kettner et al., 2017). The community senior center has the option to include the fall prevention workshop as one of their EBP activities for the OAs.

Strengths and Limitations of the Project

Strengths

The fall prevention project was a complete success for achieving its goals to determine the OAs' risk of falling, increasing the OAs' awareness of causes of falls, complications related to falls, and interventions to prevent/decrease falls. The strength of the fall prevention project included the enthusiasm and collaborative support of the team. The executive director understood the urgency for implementing a practice guideline that concentrated on EBP interventions to improve nursing practices related to decreasing falls and decrease the rate of falls in OAs. A practice guideline should include EBP interventions that were tested with a critical appraisal tool (Buccheri & Sharifi, 2017). The strength of the project also relied on the FRSAT that ensured critical appraisal and dissemination of the fall prevention program. Evidence-based guidelines are reflected by a critical appraisal tool that provides the opportunity to evaluate the evidence with a checklist (Buccheri & Sharifi, 2017). The OAs were willing to participate by filling out

the questionnaires to learn of their risk for falling and why it matters. They maintained attendance throughout the project without any immediate ailment of health concerns. The OAs also felt self-accomplished as they learned the impact of daily exercise on their gait/balance and how to identify hazards within their home with a home safety check.

Limitations

One limitation was time constraints for the team to meet in person to discuss the project, rather it was more convenient to communicate via email and telephone conferences. The project was limited to one education intervention for consideration in the data outcome report. Furthermore, continuation in the fall prevention workshop after the posttest follow-up limited further evaluation of OAs fall rate due to the project time frame of eight weeks. The project is considered limited if there was no balance between the budget, time, and the goals intended. The risk for falling tool assessed falls for the past year to determine the history of falls; therefore, future projects addressing falls in OAs at the community senior center should consider a longitudinal time frame of one year posttest implementation to determine the fall risk in the OA population (Kim & Portillo, 2018). The project was designated at the community senior center and limited the opportunity to assist the OAs in the completion of the home safety check of their home to ensure accurate home modification. Furthermore, the FRSAT was a self-reported questionnaire that also relied on recall of past risk for falling, which may lead to recall bias. The accuracy of data collection that has relied on a recollection of information may present A biased recollection of information (Lukaszyk et al., 2016). The period of data

collection on the fall rates for one month is also a limitation. It has been recommended that data collection be continued for the next 11 months following the project to determine its effectiveness in decreasing the rate of falls in OAs.

Summary

The DNP project site urgently needed a fall prevention program to educate the OA on falls and its causes, complications, and preventive strategies. It was also important that the OAs learned the positive impact of daily exercise and beneficial home safety checks to decrease their risk of falls. The primary care prevention used to reduce the rate of falls in OAs assessed their risk for falling and provided an opportunity for increased education. The FRSAT was implemented in the project to determine the OAs' risk for falls and provided a solution. I utilized the fall prevention procedure (Figure 1) guideline and educated the team on how to utilize the guideline for the fall prevention program. The executive director of the senior center authorized the fall prevention program guideline. The analysis of the pretest and posttest results demonstrated that implementation of the guideline was successful in determining the OAs' risk for falls and provided an opportunity to increase their awareness of falls and preventative measures. The result of the FRSAT pre- and post-implementation of the fall prevention workshop showed a reduction in the rate of falls. After the implementation of the tool, the rate of falls in OAs was decreased to 2 falls in the month following the educational program, as compared to the 15 falls documented in the year prior to the program. Results showed that a fall prevention program focused on exercise and a home safety check demonstrated

a trend in decreasing the rate of falls. Continuing to monitor the fall rate over the next year will determine the long-term effectiveness of the educational program. Section five discussed the dissemination plan and analysis of the self.

Section 5: Dissemination Plan

Introduction

Translation of the findings provides a systematic way of incorporating assimilated knowledge into practice to bring closure to a practice gap for the improvement of patient care outcomes (Curtis & DeMaio, 2017). The dissemination of the project's implementation and findings will include the project team. Discussions will include sharing insights into the project, increasing the awareness of falls in OAs, introducing the fall prevention procedure (see Figure 1), and implementation of the findings. Dissemination will also entail encouraging the team to embrace the fall prevention procedure guideline to continue to decrease the rate of falls in OAs. It is imperative that the team understands the outcome impact of fall-related complications in OAs. I plan to disseminate the results of the workshop and the fall prevention procedure via video conference using poster boards to decrease time constraints. The poster board presentation will include results of the pre- and post-education, as well as handouts, tables, and graphs that provided support for the findings of the project. I will utilize the poster board to discuss the rate of falls in OAs before and after the education intervention to demonstrate the effectiveness of the educational workshop. The poster board will maintain an EBP scholarly approach to synthesize the evidence and present clarity in communicating key components, including the focus, purpose, and relevance to practice with implemented actions specified (Williams & Cullen, 2016). Disseminating the outcome of the project will play a pivotal role in helping staff to accept proposed changes

to improve the QOL for OAs. Disseminating my knowledge on the project findings will appeal to the broader nursing professional to continue to develop and refine evidence-based fall prevention programs for community senior centers to decrease fall-related complications among the OA population to maintain their QOL. The dissemination of knowledge could provide the opportunity to utilize relevant research findings to bring improvement to health care organizations and bring closure in the clinical practice gap that could maintain successful client care outcomes (Curtis & DeMaio, 2017).

Analysis of Self

Project Manager

During my practicum experiences at one community senior center, I had the opportunity to identify a problem affecting OAs and convinced the stakeholders with EBP literature that practice change was needed to urgently implement a fall prevention program. As the project leader, I understood the nursing practice change that was needed to improve knowledge of the OAs about the risk for falling and helped them to understand the impact of increasing their awareness of falls, including the causes, complications, intervention tried, and preventative measures. The mission statement of the senior center has been imbedded in focusing on the QOL for OAs as the major objective. The CDC (2017a) recommended that fall prevention programs are a necessity for all OAs, yet the senior center did not establish any practice guidelines to prevent falls. As the project leader/developer, I had to learn how to plan, design, develop, and implement a QIP that has been derived from EBP literature that provided support for the

project. As the DNP leader, I saw myself as the changing agent who could improve nursing practices for the senior center and decrease the rate of falls for OAs.

As the Practitioner

My journey during my DNP practicum experiences has enlightened me on how to address stakeholders about a clinical practice problem identified within their organization. I quickly learned that an EBP approach was needed to identify and convince stakeholders of the causes, complications, interventions tried with falls in OAs. As an advanced practitioner, I was able to learn how to develop a fall prevention program with interventions that the senior center needed to incorporate in order to effectively prevent falls. The advanced practitioner can create, initiate, accomplish, and evaluate beneficial interventions grounded in nursing science (AACN, 2006). My role as an advanced practitioner has taught me that population health should be viewed as a holistic approach, including primary care interventions that focus on fall prevention. Clinical prevention and population health have been essential components for improving health (AACN, 2006).

As the Scholar

As a DNP scholar, I utilized a community senior center to educate OAs and increase their awareness on how to prevent falls with a fall prevention workshop, thereby decreasing their rate of falls. I was able to increase the stakeholders' awareness of utilizing the fall prevention procedure (see Figure 1) to educate their OAs on preventing fall-related injuries. My practicum experiences as a scholar have significantly improved

my communication skills as I learned how to engage with the project team to discuss evidence-based data of practices that provided a positive outcome with a new practice protocol for the OAs. The DNP student's role includes effective communication skills used to maintain "quality improvement with patient safety initiatives in health care systems" (AACN, p. 11). As a DNP student at Walden University, I feel confident that my classroom experiences and practicum exposure provided professional growth and has taught me how to disseminate falls in the OA population on a scholarly level to any health organization or at a political platform.

Project Completion

The DNP project was completed with a successful outcome for the OAs at the community senior center. The number of OAs who fell after initiating the fall prevention program was significantly improved, which increased their QOL as their safety was maintained. The DNP program has prepared advanced nurses to bring together nursing science and acquired knowledge from a biophysical, psychosocial, ethical, and analytical of EBPs to collaborate with organizational sciences to serve as the framework for achieving the highest level in the field of nursing (AACN, 2006).

Meetings with the project team were essential in helping them to understand the project objectives and development. There were challenges in the project that were overcome with strategic planning. First, the project team was not always available to meet and discuss project development. However, the solution was met by increasing the team's awareness to understand the importance of meeting objective goals. The team then

finally decided to communicate via email and telephone conferences. Secondly, there were concerns for the OAs to maintain adherence to reading the handouts provided during the fall workshop. However, that problem was solved as the center manager volunteered to provide weekly reminders for one month to the OAs to maintain the guidelines of the fall prevention procedure (see Figure 1). Finally, one of the major challenges to the project that I overcame was narrowing QOL for OAs at the senior center. After assessing a substantial number of the OAs with gait-balance issues, which required assistive devices to ambulate, and learning about their experiences with falls and near-missed falls, I realized that their QOL included preventing falls. The insight gained from developing the DNP project was recognizing the importance of community-based senior centers to consistently reassess their health promotional activities provided for their members. Another key insight learned was that education is a vital component of self-development as it increases awareness for health organizations and the OA population. As the DNP student and the changing agent, I was able to take the lead in the fall prevention workshop to translate the evidence into a fall prevention procedure (see Figure 1) that has proven to show effectiveness for the health outcome of the OA population. My long-term professional goals will afford me to work alongside senior centers in New York City to implement cost-effective, evidence-based fall prevention programs to improve the QOL for their OAs. Cost-effectiveness has been a vital component of a business case framework to alleviate the financial burden of an organization and maintain financial stability (Bartlett Ellis, Embree, & Ellis, 2015). As

the change agent, I will continue to engage with community leaders to advocate for increased funding for senior centers to provide EBP activities that will improve their health. The APNs could convince political leaders to take part in the functions in all levels of government to provide improvement in the outcome of health care delivery (AACN, 2006).

Summary

The purpose of the DNP project was to develop a fall prevention program to decrease the rate of falls in OAs. The objective of the QIP was to provide an opportunity to acquire knowledge of fall causes, complications, and interventions tried and increased the awareness of OAs. The OAs were able to identify their risk for falling to determine their participation in the fall prevention program. The dissemination of the outcome for the project will take place through video conferences with poster boards to decrease time constraints. The fall prevention program improved the rate of falls, translated the findings, and brought closure to a practice gap at one community senior center with a new fall prevention procedure (see Figure 1). I played three pivotal roles in the project, which included the practitioner, the scholar, and the project manager, which has helped me to better understand how to overcome the challenges during the development of the project. One of the challenges faced was time constraints for meetings and the assurance that the OAs would revise the handouts given after the fall workshop. The project team understood the impact of the project objectives and collaborated with enthusiasm to achieve a successful fall prevention program. I have presented the fall prevention

procedure (see Figure 1) to the community senior center, and I look forward to working with the organization to develop a policy for fall prevention.

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Appendix A: Fall Risk Self-Assessment Tool

Check Your Risk for Falling

Circle "Yes" 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.
Yes (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.
Yes (1)	No (0)	I often have to rush to the toilet.	Rushing to the bathroom, especially at night, increases your chance of falling.
Yes (1)	No (0)	I have lost some feeling in my feet.	Numbness in your feet can cause stumbles and lead to falls.
Yes (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.
Yes (1)	No (0)	I take medicine to help me sleep or improve my mood.	These medicines can sometimes increase your chance of falling.
Yes (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.
Total _____		Add up the number of points for each "yes" answer. If you scored 4 points or more, you may be at risk for falling. Discuss this brochure with your doctor.	

This checklist was developed by the Greater Los Angeles VA Geriatric Research Education Clinical Center and affiliates and is a validated fall risk self-assessment tool (Rubenstein et al. J Safety Res; 2011: 42(6)493-499). Adapted with permission of the authors.

Stay Independent Brochure: Retrieved from the CDC STEADI website: https://www.cdc.gov/steadi/pdf/STEADI-Brochure-StayIndependent-508.pdf

Appendix B: Home Safety Check

Use this checklist to find and fix hazards in your home.

STAIRS & STEPS (INDOORS & OUTDOORS)

Are there papers, shoes, books, or other objects on the stairs?

- ☐ Always keep objects off the stairs.

Are some steps broken or uneven?

- ☐ Fix loose or uneven steps.

Is there a light and light switch at the top and bottom of the stairs?

- ☐ Have an electrician put in an overhead light and light switch at the top and bottom of the stairs. You can get light switches that glow.

Has a stairway light bulb burned out?

- ☐ Have a friend or family member change the light bulb.

Is the carpet on the steps loose or torn?

- ☐ Make sure the carpet is firmly attached to every step, or remove the carpet and attach non-slip rubber treads to the stairs.

Are the handrails loose or broken? Is there a handrail on only one side of the stairs?

- ☐ Fix loose handrails, or put in new ones. Make sure handrails are on both sides of the stairs, and are as long as the stairs.

FLOORS

When you walk through a room, do you have to walk around furniture?

- ☐ Ask someone to move the furniture so your path is clear.

Do you have throw rugs on the floor?

- ☐ Remove the rugs, or use double-sided tape or a non-slip backing so the rugs won't slip.

Are there papers, shoes, books, or other objects on the floor?

- ☐ Pick up things that are on the floor. Always keep objects off the floor.

Do you have to walk over or around wires or cords (like lamp, telephone, or extension cords)?

- ☐ Coil or tape cords and wires next to the wall so you can't trip over them. If needed, have an electrician put in another outlet.

KITCHEN

Are the things you use often on high shelves?

- ☐ Keep things you use often on the lower shelves (about waist high).

Is your step stool sturdy?

- ☐ If you must use a step stool, get one with a bar to hold on to. Never use a chair as a step stool.

BEDROOMS

Is the light near the bed hard to reach?

- ☐ Place a lamp close to the bed where it's easy to reach.

Is the path from your bed to the bathroom dark?

- ☐ Put in a nightlight so you can see where you're walking. Some nightlights go on by themselves after dark.

BATHROOMS

Is the tub or shower floor slippery?

- ☐ Put a non-slip rubber mat or self-stick strips on the floor of the tub or shower.

Do you need some support when you get in and out of the tub, or up from the toilet?

- ☐ Have grab bars put in next to and inside the tub, and next to the toilet.

Check for Safety Brochure: Retrieved from the CDC STEADI website: https://www.cdc.gov/steadi/pdf/STEADI-Brochure-CheckForSafety-508.pdf

Appendix C: Exercise

RECOMMENDED EXERCISE

Chair Rise Exercise

What it does: Strengthens the muscles in your thighs and buttocks.
Goal: To do this exercise without using your hands as you become stronger.

How to do it:

1. Sit toward the front of a sturdy chair with your knees bent and feet flat on the floor, shoulder-width apart.
2. Rest your hands lightly on the seat on either side of you, keeping your back and neck straight, and chest slightly forward.
3. Breathe in slowly. Lean forward and feel your weight on the front of your feet.
4. Breathe out, and slowly stand up, using your hands as little as possible.
5. Pause for a full breath in and out.
6. Breathe in as you slowly sit down. Do not let yourself collapse back down into the chair. Rather, control your lowering as much as possible.
7. Breathe out.

Repeat 10-15 times. If this number is too hard for you when you first start practicing this exercise, begin with fewer and work up to this number.

Rest for a minute, then do a final set of 10-15.

CDC Centers for Disease Control and Prevention
National Center for Injury Prevention and Control

2017

STEADI Stopping Elderly Accidents, Deaths & Injuries

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Chair Rise Exercise Brochure: Retrieved from the CDC STEADI website: https://www.cdc.gov/steadi/pdf/STEADI-Brochure-ChairRiseEx-508.pdf

Appendix D: Actions to Prevent Falls

Four things YOU can do to prevent falls:

① Talk openly with your healthcare provider about fall risks & prevention.

Tell a provider right away if you fall, worry about falling, or feel unsteady. Have your doctor or pharmacist review all the medicines you take, even over-the-counter medicines. As you get older, the way medicines work in your body can change. Some medicines, or combinations of medicines, can make you sleepy or dizzy and can cause you to fall. Ask your provider about taking vitamin D supplements to improve bone, muscle, and nerve health.

② Exercise to improve your balance and strength.

Exercises that improve balance and make your legs stronger, lower your chances of falling. It also helps you feel better and more confident. An example of this kind of exercise is Tai Chi.

Lack of exercise leads to weakness and increases your chances of falling.

Ask your doctor or healthcare provider about the best type of exercise program for you.

③ Have your eyes and feet checked.

Once a year, check with your eye doctor, and update your eyeglasses, if needed. You may have a condition like glaucoma or cataracts that limits your vision. Poor vision can increase your chances of falling. Also, have your healthcare provider check your feet once a year. Discuss proper footwear, and ask whether seeing a foot specialist is advised.

④ Make your home safer.

- Remove things you can trip over (like papers, books, clothes, and shoes) from stairs and places where you walk.
- Remove small throw rugs or use double-sided tape to keep the rugs from slipping.
- Keep items you use often in cabinets you can reach easily without using a step stool.
- Have grab bars put in next to and inside the tub, and next to the toilet.
- Use non-slip mats in the bathtub and on shower floors.
- Improve the lighting in your home. As you get older, you need brighter lights to see well. Hang light-weight curtains or shades to reduce glare.
- Have handrails and lights installed on all staircases.
- Wear well-fitting shoes with good support inside and outside the house.

What You Can Do to Prevent Falls Brochure: Retrieved from the CDC STEADI website: https://www.cdc.gov/steadi/pdf/STEADI-Brochure-WhatYouCanDo-508.pdf