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Reducing the Prevalence of Falls in the Assisted Living Facility Setting

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DOCTOR OF NURSING PRACTICE

DNP PROJECT COMMITTEE MEMBERSHIP FORM

We, the undersigned, agree to serve as members of the DNP Project Committee of:

_____ who is developing a
proposal for a project tentatively titled:

_____

(Agreement to be a member of the committee does not imply acceptance of the proposal.)

_____/___/___
Signed, Chair, Project Committee   Printed Name   Date

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Signed, 2nd Committee Member   Printed Name   Date

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Signed, Program Director   Printed Name   Date

REDUCING THE PREVALENCE OF FALLS
IN THE ASSISTED LIVING FACILITY SETTING

Presented in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Nursing Practice

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College of Nursing

Joan Louis Pierre
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NOVA SOUTHEASTERN UNIVERSITY
HEALTH PROFESSIONS DIVISION
COLLEGE OF NURSING

This project, written by Joan Louis Pierre under direction of Deirdre Krause Ph. D, APRN, FNP-BC Project Chair, and approved by members of the project committee, has been presented and accepted in partial fulfillment of requirements for the degree of

DOCTOR OF NURSING PRACTICE

PROJECT COMMITTEE

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Deirdre Krause Ph. D, APRN, FNP-BC,   Date
Chair of DNP Project Committee

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Deirdre Krause Ph. D, APRN, FNP-BC,   Date
Project Committee Member

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Certification

We hereby certify that this DNP Project, submitted by Joan Louis Pierre conforms to acceptable standards and is fully adequate in scope and quality to fulfill the project requirement for the Doctor of Nursing Practice degree.

Approved:

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Abstract

Background: Falls are an issue of concern among the elderly population; it is not only costly, but their impact can have long-term consequences on the quality of life of the elderly. Fall risk in this population increases with age, and falls are the leading cause of accidental death and disability among older adults (Morris et al., 2016). Fall prevention is needed to help reduce these events. The success of this project required consideration of the unique needs of residents in the assisted living environment.

Purpose: The purpose of this project was to reduce the prevalence of falls in the assisted living facility by developing a fall protocol.

Theoretical Framework. The Donabedian model was the theoretical framework selected for use in this project. This framework contains three areas for quality assurance: structure, process, and outcomes. The Donabedian model is a tailored plan of interventions that was created to meet the specific needs of the residents in this particular setting.

Methods. A pre-intervention survey was given to evaluate the staff's knowledge on falls. Based on the findings, a fall protocol was developed. An educational program was developed and presented to the staff. The de-identified data on the pre- and posttest was analyzed using a dependent t-test for the statistical evaluation.

Results. The results indicated that there was a statistically significant change in staff knowledge following the completion of the educational program ($p = 0.000$).

Conclusions: The results indicated that staff training may be useful for enhancing staff knowledge of fall risks. With this knowledge, staff should be able to implement the fall prevention program in the facility, leading to a reduction in the total number of falls.

Acknowledgements

It takes a village to raise a child is an African proverb that my parents used to build their foundation on raising their children, and I am living proof of this proverb. I would like to give thanks to the Lord for keeping me safe and humble. Thank you, Lord, for giving me Manecia as a mother who not only loved and cared for me but also strengthened and encouraged me all the way through. I thank my sisters for their continued love and support of me as I thrived. To my champion and only beloved brother Steve, I do not know what I would have done without your love and support. You are the best big brother a woman can have, and I love you with all my soul, thank you for being there. To my fairy Godmother, mentor, and preceptor Rose. Rose, you have been there since day one of my educational journey; I will never forget the day you taught me how to assess my first blood pressure. I will forever be grateful to you and your family. To my extended family and friends, thank you for all for your continued prayers, love, and support. I would like to express my sincere gratitude to my professors for their continuous support of my DNP study related research, for your patience, motivation, and immense knowledge. Your guidance has helped me in all the time of research and writing my capstone project. Thank you all and may God continue to bless you always.

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Chapter 1: Nature of the Problem and Problem Identification

Falls are an issue of concern among the elderly population; they are not only costly, but their impact can have long-term consequences on the quality of life of the elderly. Current data indicates that as many as 30% of older adults experience a fall each year (Dingova & Kralova, 2017). Fall risk in this population increases with age, and falls are the leading cause of accidental death and disability among older adults (Morris et al., 2016). In most instances, falls are associated with considerable risk of physical harm including fractures to the forearm and hip (Dingova & Kralova, 2017). While the physical consequences of falls are quite substantial, research also indicates that there are significant psychological consequences associated with falls (Dingova & Kralova, 2017). These psychological consequences can have damaging implications on the elderly's ability to perform ongoing activities of daily living. More specifically, the fear of a fall may result in the unwillingness of the older adult to engage in activities of daily living that will help maintain normal physiological functioning (Dingova & Kralova, 2017).

While the issue of falls among community-dwelling older adults has received considerable attention, there is evidence that certain groups of older adults within the community may be at higher risk for these events. Specifically, research indicates that older adults residing in assisted living facilities (ALFs) may be at increased risk for falls (Mielenz et al., 2014). Although researchers have failed to collect direct data regarding the number of falls that occur in ALFs, estimates suggest that the problem is one of notable concern. In particular, data suggests that between 35% and 60% of residents

residing in assisted living facilities will experience a fall each year (Mielenz et al., 2014). Given that 30% of the general population of community-dwelling older adults may experience a fall, these estimates suggest that fall rates among older adults in assisted living facilities may be significantly higher (Resnick, Galik, Gruber-Baldini, & Zimmerman, 2012).

Adding to the complexity of the issue is the fact that assisted living facilities are the fastest growing care setting for older adults in the U.S. (Silva-Smith, Kluge, LeCompte, & Snook, 2013). Although efforts are often made to design assisted living facilities to address the functional needs and limitations of older adults, falls in this setting are often overlooked in terms of prevention (Stubbs, Brefka, & Denkinger, 2015; Wood-Nartker, Guerin, & Beuschel, 2014). In addition, staff working in assisted living facilities may not have the knowledge or skills needed to prevent these events from occurring and often report falls as "accidents" (Silva-Smith et al., 2013). This may have implications for staff to understand the scope of the problem and to generate data needed to support proactive interventions to address the problem. As the number of older adults in the U.S. continues to increase with the aging of the Baby Boomer population, there is an impetus to address falls in older adults residing in assisted living facilities.

Problem Statement

The clinical problem was that falls in elderly residents in an assisted living facility that have the potential to alter their quality of life long-term by impeding their ability to perform activities of daily living.

Purpose of the Project

The purpose of the project was to develop and implement a fall prevention program for an assisted living facility currently operating in Florida to reduce the prevalence of falls at the facility. While this general purpose provides a broad overview of the program, there were additional foci for the program that included: increasing staff awareness on the issue of resident falls and the importance of reporting the falls; reducing fall prevalence at the facility, developing a fall protocol specifically designed for residents in assisted living facilities; and evaluating the impact of the fall reduction protocol in the facility. These areas for development enabled the principal investigator (PI) to establish an evidence-based program that could comprehensively meet the needs of the residents at the facilities and raise awareness of the staff on fall reduction prevention.

Project Objectives

The following objectives were identified to guide development of the project in practice:

1. Assess the prevalence of falls in the assisted living facility.
2. Develop a fall protocol based on the Hendrich II fall risk model (HIIFRM).
3. Educate, train, and implement the facility's staff on the fall protocol using Lewin's change theory.
4. Evaluate the effectiveness of the fall protocol on reducing the prevalence of falls at the facility within 3 months.

Theoretical Framework

The theoretical framework selected for use in this project was the Donabedian model. A review of the model provided by Kelly, Vottero, and Christie-McAuliffe (2014) indicates that the framework contains three areas for quality assurance: structure, process, and outcomes. According to these authors, structure refers to the environment or conditions in which care for the patient is provided, while process refers to the specific activities that are undertaken to provide health care to the residents. Outcomes refer to the changes that occur for the residents as a result of the care provided (Kelly et al., 2014). Structure, process, and outcomes are interrelated, providing an interconnected framework upon which to build care for the patient.

In applying the Donabedian model to the project, the three core elements of the model were used as follows: structure was focused on the care environment, which is the assisted living facility setting. Process referred to the specific protocols that were established for fall prevention among residents living in the ALF; and outcomes were measured through pre-/post-program implementation assessments of falls among residents. Through the use of the Donabedian model, a tailored plan of intervention was created to meet the specific needs of the residents in this particular setting.

Significance of the Study

Healthcare Practice

The development and implementation of a fall prevention program tailored to meet the specific needs of an assisted living facility served two purposes. First the program elucidated the specific issues facing residents living in these facilities. Second, the program created a foundation for modeling additional practice changes that could be

extended to assisted living facilities operating across the United States. What is evident in this case is that the changes made in developing this program could have an impact on standard operating practice to enhance care provided to residents in ALFs.

Healthcare Outcomes

Reductions of falls in the assisted living facility setting have the potential to reduce healthcare costs, morbidity, and mortality in that specific population. Fall prevention can help the residents in the assisted living facility maintain their health and quality of life on a continuum. Fall prevention can also allow residents to remain in a least restrictive environment.

Healthcare Policy and Delivery

The program provided basic insight and information regarding how to improve care in the assisted living facilities setting. It also increased awareness of the staff on falls by providing them with knowledge and understanding of the consequences of falls. A policy was impacted at the organizational level, as the staff have a protocol in place to guide practice. This project shaped and promoted quality improvement efforts across all assisted living facilities as standard practice. Changes in policy also reinforced improvements in health outcomes and healthcare delivery, comprehensively augmenting care and outcomes for older adults residing in assisted living facilities.

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Summary

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Synthesis of the information provided in this chapter clearly demonstrates that there is a need to address falls and fall prevention for older adults residing in assisted living facilities. Even though the exact number of falls that occur in these facilities each year have only been estimated, data suggest that this number is quite high, especially

when compared with falls among older adults living in other community settings (Morris et al., 2016). The development and implementation of an evidence-based fall protocol tailored to meet the specific needs of residents in assisted living facilities should enable nurses and other staffs working in these settings to reduce resident falls while creating a foundation for improving resident safety. Given all of these benefits, there is a definitive need for action to address this issue.

Chapter 2: Review of Literature

The topic of this investigation focused on the prevention of falls for older adults residing in assisted living facilities (ALFs). The information provided in this chapter includes a review of the literature on this topic to assess current gaps and opportunities for future research. In order to conduct this literature review, a search of the following electronic databases was undertaken: Academic Search Complete, Expanded Academic Search Complete, CINAHL Plus with Full Text, MEDLINE with Full Text, ScienceDirect, and Journals@OVID. Limiters were utilized to ensure that timely, high-quality sources were located for inclusion. More specifically, limiters included full-text articles published in peer-reviewed journals over the last 5 years (2012-2017). Initial keywords used for the literature search included "falls" and "assisted living." This returned 546 articles. The first 200 abstracts were reviewed, and nine articles were located for inclusion in this literature review. A subsequent search using the terms "falls," "prevention," and "assisted living" was also undertaken. This search produced 112 results. No new articles relevant to the literature review were located through this search.

Literature Review

The first issue addressed through the literature review was an effort to assess the scope of the problem. Although extensive information regarding falls among community-dwelling older adults is currently available in the literature, the scope of the problem in assisted living facilities is not as well elucidated. Mielenz et al. (2014) highlighted this point by asserting that the rate of fall injuries among community-dwelling older adults is

estimated to be double of that for younger adults. Mielenz and coauthors further argued that when the number of falls among community-dwelling older adults are aggregated across those living in assisted living facilities, between 35% and 60% of the population in these communities will experience a fall each year. This finding suggests that the rates of falls in ALFs have only been estimated in the current literature. Zimmerman et al. (2017) further highlighted the challenges associated with assessing the scope of the problem, asserting that estimates indicate that 15% of older adults in assisted living facilities fall each year, suggesting that as many as 110,000 older adults are affected by this problem. Additional data provided by Resnick et al. (2012) demonstrated that between 30% and 50% of older adults living in assisted living facilities experience a fall each year.

The impact and costs of falls on the patient and healthcare organization are also important to consider when reviewing this issue. Hoffman, Hays, Shapiro, Wallace, and Ettner (2017) argued that fall related injuries cost Medicare $13 billion annually. Further, these authors reported that the average cost per patient for a fall-related injury was $9,389. While these costs demonstrate the impact of a fall that results in physical injury to the patient, not all falls will cause physical harm to the patient. However, research does indicate that when falls occur, they often result in the development of fear for the patient (Lee, Choi, & Kim, 2017). Fear of falling can result in the decision of the patient to restrict activity and to disengage from health promotion activities such as regular exercise (Lee et al., 2017). This can have a deleterious impact on health that results in a loss of the patient's independence over time (Lee et al., 2017). Thus, reducing fall risk and the number of falls experienced by patients is imperative.

While the numbers presented in the current literature are not exact, the estimates do suggest that falls are a prevalent problem. In addition to the fact that estimates regarding the number of falls in ALFs are quite high, the problem is one that appears to be growing in scope. Silva-Smith et al. (2013) asserted that assisted living facilities are currently the fastest growing care settings for older adults. Further, staff working in these facilities are often inclined to report falls generally as "accidents," a process that may be hiding the true scope of the problem in these facilities (Silva-Smith et al., 2013). Wood-Nartker et al. (2014) argued that fall prevention may be overlooked in assisted living facilities due to the fact that these care settings are designed to help address sensory issues for older adults that may lead to falls. In short, falls may not be viewed as a significant issue of concern by those who are responsible for providing care in these facilities.

Fall Prevention in ALFs

Even though some challenges exist with regard to delineating the scope of the issue, literature on this topic does indicate that several different approaches to addressing falls in assisted living facilities have been proposed in the literature. Smee, Anson, Waddington, and Berry (2012) noted the use of a fall-screen program to identify those at risk for falls and to provide individualized support to prevent these problems from occurring. McGough, Logsdon, Kelly, and Teri (2012) also supported assessment and individualized interventions to prevent falls. These authors maintain that in assisted living facilities, residents at high risk for falls should be screened. This approach helps to ensure that those most vulnerable to falls have proactive supports in place to prevent these events.

Even though this approach to care ensures that the most vulnerable patients are provided with the supports needed to prevent falls, other scholars have focused on the need to build strength and physical functionality for all ALF residents to prevent falls (Stubbs et al., 2015). Chao, Scherer, Wu, Lucke, and Montgomery (2013) considered the use of Wii Fit exercise programs to engage older adults to build strength and muscle coordination. Burton et al. (2015) also considered this use of an exercise program to help build strength and functional capabilities to prevent falls in the ALF care setting. In both of these studies, 6- and 12- month fall rates for residents were noted to be lower, suggesting that these types of interventions may be effective in addressing falls as part of the health supports provided by staff in this care setting.

Hendrich II Fall Risk Model (HIIFRM)

Included in the objectives of this work is a development of a fall protocol based on the Hendrich II Fall Risk Model (HIIFRM). In order to develop this protocol, it was necessary to provide an overview of the model used. Information provided by Jung and Park (2018) indicated that the model is a modified version of a fall-risk assessment tool that was developed by Hendrich in 1995. The model consists of eight items that are used as part of comprehensive assessment of the patient's fall risk. Jung and Park reported that these eight items include: confusion/disorientation, somatic depression, altered elimination, dizziness/vertigo, gender, administration of antiepileptics, administration of benzodiazepines, and results from the timed Get-Up-And-Go test. Each of the categories is rated for a total survey score ranging from 0 (low fall risk) to 16 (high fall risk) (Jung & Park, 2018). Patients with scores over 5 are considered to be a considerable risk for a fall (Jung & Park, 2018).

Additional research on the tool indicates that it has been extensively used in the acute care setting to evaluate patient fall risk (Swartzell, Fulton, & Friesth, 2013). Fall risk assessment tools are considered to be effective if they are easy to use, perform well across patient groups, and include a small number of items (Swartzell et al., 2013). Scholars do argue that the HIIFRM meets these criteria, with research indicating that reliability for the total instrument is consistently above 0.90 (Swartzell et al., 2013). Given these attributes, each element of the risk assessment tool was utilized as a foundation for providing staff education to foster awareness of the specific issues that may increase patient fall risk in the assisted living facility.

Research regarding fall assessment protocols indicates that the HIIFRM, Morse Fall Scale, and STRATIFY are among the most commonly used (Lee, Geller, & Strasser, 2013). While all three assessments have considerable reliability and validity when used in practice, the HIIFRM has been consistently demonstrated to be easy to utilize and apply (Campanini et al., 2018). The assessment has been noted to be effective for assessing fall risk because it addresses factors specific to the health and condition of the patient (Yip, Mordiffi, Wong, & Ang, 2016). Ongoing support for the use of this tool in the literature does indicate that it provides an important resource for nurses to assess patient needs to prevent falls (Yip et al., 2016).

Summary/Synthesis

Current evidence on the topic of fall prevention in older adults residing in assisted living facilities suggests that there is a myriad of different approaches to address the problem. Research demonstrates that assessment of those at risk for falls can be useful as well as facility-wide exercise programs to help build the strength and physical

functioning of older adults. Existing research on the topic clearly supports the need to

address this issue, as a large percentage of older adults may be susceptible to falls in

assisted living facilities. Augmenting care such that standardized practice can be

established to address the problem appears to be critical. Only by addressing this issue

through research will it be possible to determine what specific interventions should be

implemented to help ensure that those residing in assisted living facilities have the ability

to prevent falls.

Chapter 3: Methods

Assisted living facilities have been noted in the literature to represent unique environments for care (Wood-Nartker et al., 2014). Integral to the process of evidence-based practice is the integration of patient needs. The success of this project required consideration of the unique needs of residents in the assisted living environment. These events can markedly impact the patient's overall function and quality of life (Dingova & Kralova, 2017; Morris et al., 2016). Falls are also a significant source of morbidity and are the leading cause of accidental death in this population group (Morris et al., 2016). Fall prevention is needed to help reduce these events. This issue appears to be particularly acute in assisted living facilities where fall prevalence appears to be significantly higher. Evidence-based practice improved the ability of nurses to intervene in this care setting to reduce fall rates and improve health outcomes for residents over the long term.

Project Design

In collaboration with the Assisted Living Facility (ALF) administrator, a convenience sample of 20 resident records was reviewed. The de-identified data for falls was obtained from existing records that were provided by the director of operation. The data was used to evaluate current falls in the assisted living facility.

The PI created a pre-intervention assessment to evaluate staff knowledge on falls The assessment can be found in Appendix B. This assessment was a 20-question tool that included 10 true/false questions, five multiple choice questions, and five short answer

questions. Although all items on the survey were used to evaluate staff knowledge both before and after the intervention, scores were assigned based on the accuracy of the answers. The scale of grading was 0 to 100%. While true/false and multiple choice items had definitive answers, short answer questions had to be evaluated through a specific procedure. In particular, assessment of accuracy was made for the short answer questions using an answer key developed before the tests were given. The answer key can be found in Appendix C. The PI identified all possible accurate answers for the short answer questions, and credit was given for participants that included any of the pre-determined answers. The same instrument was used in the pre- and post-intervention phases of the project. To reduce test bias from exposure to the instrument before the intervention, the questions included on the posttest were ordered differently with the true/false questions reversed.

Based on findings and the literature review, a fall protocol was developed. The protocol was developed utilizing a review of the Hendrich II fall risk model (HIIFRM) to determine the most pertinent aspects of the patient assessment to prevent falls. This was accomplished through a review of the literature on patient fall assessments. Using the literature as a guide, the most pertinent elements of the HIIFRM were incorporated into the final fall protocol for use in the facility. The theoretical framework that was used to guide this project was Kurt Lewin's theory of change management. This theory comprises three stages known as the unfreezing, changing, and refreezing method (Shirey, 2013). During the unfreeze stage, staff were educated on the importance of fall prevention and on the negative impacts of falls in the elderly population. During the project implementation, changes in knowledge and implementation of a screening

protocol were undertaken at the facility to ensure that the fall prevention protocol was followed.

During the refreeze stage, outcome evaluation was shared with the facility, and a post-implementation assessment was given to the staff to assess knowledge following the educational program. The post-implementation assessment can be found in Appendix D and includes the same questions that were provided in the pre-intervention assessment tool (Appendix B). The questions were presented to participants in a different order to reduce test bias.

Kurt Lewin's three stages were used to facilitate the ability of staff at the assisted living facility to ensure that the fall protocol was integrated as part of standard operations within the facility. The number of falls will then be evaluated after 3 months of the implementation of the fall protocol.

Setting

The setting used for this project was an Assisted Living Facility (ALF) that provides permanent housing, servicing a diverse population of elderly individuals. A total of 654 residents currently live in the ALF. The age of the population in this facility varied from 85-93 years old. Research shows that fall prevalence among older adults residing in assisted living facilities is much higher than among older adults living in other community settings (Mielenz et al., 2014; Resnick et al., 2012).

Staff in the assisted living facility included multidisciplinary professionals from a wide range of disciplines including: medicine, nursing, social work, rehabilitation, pharmacy, and dietetics. Nursing staff included two advanced practice nurses, six registered nurses, and 40 full- and part-time certified registered nursing assistants and

home health aides. Because most of the residents in the facility live independently, staffing was focused on a low-skill mix to help ensure that costs are effectively controlled.

Inclusion/Exclusion Criteria

All staff, regardless of educational or position in the organization, were asked to participate. In order to participate in the project, staff had to be over the age of 18, working at the facility for at least 1 month, and able to understand English. Participants included two registered nurses (RN), one of whom is the director of operations, six certified nursing assistants (CNA), and two home health aides (HHA) who voluntarily agreed to participate in the project.

Ethical Considerations

Ethical consideration was based on the guiding principles of the Belmont Report (1979): respect for persons, beneficence, and justice. Ethical considerations were also based on the Health Insurance Portability and Accountability Act of 1996 (HIPAA). The privacy of residents' and staff was maintained at all times throughout the project. De-identified data was used at all times to protect privacy. The PI provided an anonymous questionnaire, which asks questions of the ALF staff with no identifying staff or patient information. The PI preserved the confidentiality and privacy of patients through the use of de-identified data. This project supported beneficence because it was designed to prevent falls in the elderly and preserve their quality of life. Justice was achieved through the use of a broad sample in which no discrimination based on sex, age, religion and ethnic background occurred.

Project Phases/Objectives

1. **Assess the prevalence of falls in the assisted living facility.**

- *Phase 1*: Reviewed aggregate fall data in the facility over the past 3 months.

2. **Develop a fall protocol based on the Hendrich II fall risk model (HIIFRM).**

- *Phase 2:* Conducted an extensive literature review on fall protocols to identify the most
  effective according to evidence-based knowledge. Developed the protocol.

3. **Implement, educate, and train the facility' staff on the fall protocol using Lewin's**
   change theory.

- *Phase 3:* Staff received necessary education and training after obtaining IRB approval.

4. **Evaluate the effectiveness of the fall protocol on reducing the prevalence of falls at**
   the facility.

- *Phase 4:* Evaluation and outcome of the project was completed.

Timeline

Winter 2017 (4 months): Nature of the project and identification of the problem

1. Assess the problem

   Summer 2017 (4 months): Project planning and IRB approval

2. Develop protocol

   Winter/Summer 2018 (8 months): Project implementation and evaluation

3. Implementation of the project

4. Evaluation of the project

Resources/Budget

The project relied on the use of de-identified resident records. What this suggests

is that there were no participant costs for the project. However, there were some

administrative costs such as photocopying and office supplies. The total budget for this

project was $300.

Table 1

Project Budget

Item	Cost
Personal	
• Collect, evaluate, and organize data	$0
Data Collection	
• Printer/Copier	
• Memory stick	$150
• Computer software	
• Filing Cabinet	
Stationery	
• Paper/Pens	
• Thank you cards	$70.00
• Kinkos Services	
Staff Training	
• Power Points presentation	
• Educational handouts	$120.00
• Questionnaires	
• Lunch	
• Snacks (Water, etc.)	
Total Expenses	$340.00

Outcome Measures

1. Assess the prevalence of falls in the assisted living facility.

• This objective was met by reviewing aggregate data on the facilities fall rate over the past 3 months supplied to the PI by the facility administrator.

2. Develop a fall protocol based on the Hendrich II fall risk model (HIIFRM).

• This was met by conducting an extensive literature review on fall protocols and identifying the most effective one according to evidence based knowledge. (Appendix F)

3. Implement, educate, and train the facility's staff on the fall protocol using Lewin's change theory.

• This was met by educating and training staff. (Appendix G)

4. Evaluate the effectiveness of the fall protocol on reducing the prevalence of falls at the facility within 3 months.

- This was accomplished by comparing resident fall rates from baseline and at 3 months. The fall protocol was effective and the rate of falls within the facility declined following protocol implementation.

Summary

Falls among the elderly are a serious issue. Current research on the topic has demonstrated that falls can markedly impact the patient's overall function and quality of life. The methodology developed in this chapter provided a useful foundation for examining the issue of falls in an assisted living facility. Through the use of this methodology, it was possible to complete this evidence-based practice project and to acquire data to facilitate a greater understanding of the issue while developing a foundation for improving care for older adults living in assisted living facilities. Kurt Lewin's theory of change management guided the intervention and was useful for reducing and preventing falls among older adults in this care setting. As such, implementing an evidence-based practice based on the Hendrich II fall risk model helped to educate and train staff based on their needs.

Chapter 4: Project Evaluation

The success of any project can only be determined by a systematic evaluation of project outcomes. Through this process, researchers are required to assess project outcomes and to compare them to predetermined goals and objectives to assess the results (Nunn-Ellison, Ard, Beasley, & Farmer, 2018). Undertaking this process requires a consideration of a myriad of factors including the data collection and analysis process, the expected and unexpected findings, the project strengths and limitations, the implications of the findings for nursing, and potential areas for future research. These issues are addressed in the context of this chapter to assess the impact of a staff education program on building knowledge to help prevent resident falls in an assisted living facility (ALF).

Overview of the DNP Project

The Doctor of Nursing Practice (DNP) project focused on the issue of falls among residents living in an assisted living facility. Current research indicates that annually as many as 30% of community-dwelling older adults experience a fall (Dingova & Kralova, 2017). Adults residing in assisted living facilities may be at greater risk for falls, with data suggesting that fall rates for ALF residents range between 35% and 60% annually (Mielenz et al., 2014). Falls are a significant issue of concern in the older adult population as these events are a leading cause of accidental death and disability (Morris et al., 2016). Further, research indicates that assisted living facilities are currently the fastest growing care setting for older adults in the United States (Silva-Smith et al.,

2013). While efforts are often made to improve safety outcomes for older adults living in ALF, the reality is that fall prevention in this setting is often overlooked, prompting the need to consider what can be done to change this outcome (Wood-Nartker et al., 2014).

The background provided above served as the foundation for building the current problem and purpose statements for the DNP project. The problem statement was as follows: falls among elderly residents in an assisted living facility have the potential to alter health and long-term quality of life by impeding the ability of those affected to perform activities of daily living. Based on this problem, the purpose of this DNP project was to develop and implement a fall prevention program for an assisted living facility operating in Florida. The fall prevention program was aimed at staff providing resident care with the idea that staff would be able to engage in practices that would reduce resident falls within the facility.

Data Analysis Process

Data analysis used for this DNP project included statistical evaluation of demographic and pre- and posttest evaluation data collected from 10 nursing care staff members from the assisted living facility that had volunteered to participate in the educational program. Descriptive statistics including mean and standard deviation were used to evaluate demographic data provided by the 10 volunteers. Additionally, inferential statistics were used to determine if there was a statistically significant difference in volunteer knowledge scores from the pre- and post-intervention assessments. More specifically, a dependent t-test was used to determine if the two staff knowledge score means were statistically significant. Values were considered to be statistically significant for p-values less than .05.

The procedure to collect data involved the use of a demographic survey and a pre-/posttest assessment. Both the demographic survey and the pre-/posttest assessment were developed by the author. Face validity of the assessment tool was evaluated by three advanced practice nurses currently working in the fields of primary care and gerontology. No existing validity and reliability data for the instrument was available. The pre-/posttest assessment included a total of 20 questions aimed at assessing knowledge. This included 10 true/false questions, five multiple choice questions, and five short answer questions. These evaluations can be found in Appendix B and D.

Staff members agreeing to participate in the program were asked to complete an assessment that included a demographic survey. Before the educational program was initiated, a pretest was completed to assess the baseline knowledge of the participants. Data collected from this assessment was scored based on the answers found in the answer key found in Appendix C. Scores were marked as correct or incorrect and awarded points on a scale of zero to 100. The results were then entered into an Excel spreadsheet. A similar procedure was utilized following the completion of the educational program to determine if changes in knowledge scores had occurred.

Results of Data Analysis

Data were collected from 10 nursing staff members at the assisted living facility. Staff members were recruited through flyers placed in work areas at the facility as well as through direct email to each staff member. Flyers used advertising the educational program can be found in Appendix E. A total of 60 staff members were invited to participate in this evidence-based practice project and 10 agreed to volunteer. The average age for participants were 35 years ($SD = 1.221$). In terms of gender 80% ($n = 8$)

of the volunteers were female and 20% were male ($n = 2$). In terms of position within the organization, 20% ($n = 2$) were registered nurses, 60% ($n = 6$) were certified nursing assistants, and 20% ($n = 2$) were home health aides. In terms of race, 30% ($n = 3$) were White, 40% ($n = 4$) were African American, and 30% ($n = 3$) were Hispanic. Average length of employment for all volunteers was 6.3 years ($SD = 2.197$). Demographic data for the population can be found below in Table 2.

Table 2

Demographic Data for Participants: N = 10

Variable	Result
Gender	
Female	8 (80%)
Male	2 (20%)
Age	35 years (SD=1.221)
Race	
White	3 (30%)
African American	4 (40%)
Hispanic	3 (30%)
Current Position	
Registered Nurse	2 (20%)
Certified Nursing Assistant	6 (60%)
Home Health Aid	2 (20%)
Years of Employment	6.3 years (SD=2.197)

Results from the *t*-test from the pre- and post-intervention assessments indicated that the average score from the assessment was higher following the intervention ($M = 95.50$, $SD = 3.69$) when compared with test scores before the intervention ($M = 69.00$, $SD = 7.75$). Figures 1 and 2 provided below include a visual representation of score differences for each of the 10 participants as well as a visual representation of differences

in average scores from the pre- to post-intervention phases. The *t*-test showed statistical significance ($F(1, 9) = 66.35$, $p < .001$), indicating that the intervention had a significant and positive impact on test scores. This data can be found in Table 3.

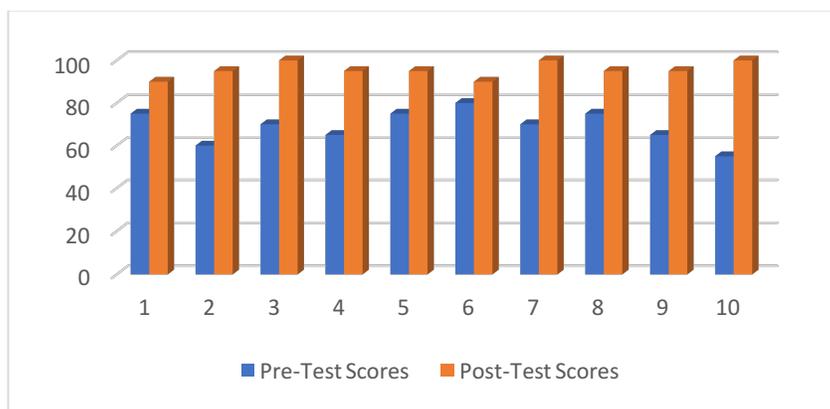*Figure 1.* Participant pre-/post-intervention assessment scores.
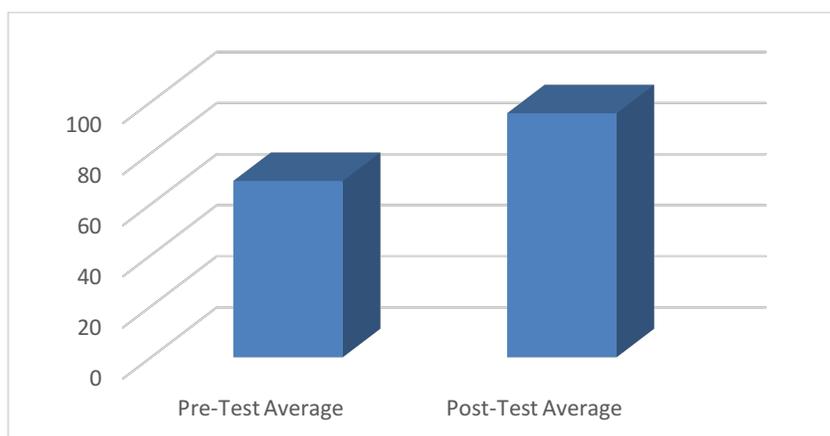

Figure 2. Average pre-/post-intervention assessment scores.

Table 3

Dependent t-Test Information

Source	Assessment	Type III Sum of Squares	df	Mean Square	F	Sig.
Assessment	Linear	3511.250	0	3511.250	66.354	.000
Error (Assessment)	Linear	476.250	9	59.917		

Meeting Objectives

Four objectives were identified for the current DNP project. These objectives are reviewed here to assess how they were or were not met

Objective 1. The first objective was to assess the prevalence of falls in the assisted living facility. The director of nursing at the assisted living facility noted that specific data on falls for residents was not formally recorded. It was possible to review patient records and to identify patients that had experienced a fall within the last 3 months. Findings indicated that 38.7% of residents living in the ALF had experienced a fall within the last 3 months. This is commensurate with the statistics provided by Mielenz et al. (2014), which suggest that 35% to 60% of ALF residents experience a fall each year. Although data for this objective was challenging to obtain, this objective was met.

Objective 2. The second objective for the project was to develop a fall protocol based on the Hendrich II fall risk model (HIIFRM). The fall protocol developed for this work can be found in Appendix F. The HIIFRM evaluates eight different risk factors that can lead to the development of falls including: confusion/disorientation, depressive symptoms, prescribed medications (antiepileptics and benzodiazepines), dizziness or vertigo, altered elimination, gender, and results from the Timed Get Up and Go Test (Caldevilla, Costa, Teles, & Ferreira, 2013). These factors were incorporated into a staff training program for the 10 volunteers aimed at increasing knowledge to assess and prevent falls in residents at the assisted living facility. Information from this objective is included in the literature review and was incorporated into the training program for staff.

Objective 3. The third objective for the project was to implement, educate, and train the facility's staff on the fall protocol using Lewin's three-step model of planned change. Three training sessions were provided to volunteers that had agreed to participate in the program. The training programs were scheduled for two consecutive Wednesday afternoons and were conducted in meeting facilities at the assisted living facility. Class outlines used for the program are included in Appendix G All training sessions were between 50 and 60 minutes in duration. The classes were presented using a mix of presentations, discussions and case studies. Unfreezing occurred through: acquiring the organizational support needed to implement the program, recruiting participants, developing the educational program, providing staff training, and measuring outcomes for staff learning. Moving was employed with staff utilizing knowledge from the educational program to reduce resident falls. Refreezing will occur through the adoption of the change as part of standard practice for all staff members.

Objective 4. The final objective was to evaluate the effectiveness of the fall protocol on reducing the prevalence of falls at the assisted living facility within 3 months. As noted, resident fall rate 3 months before the implementation of the program was 38.7%. The objective is to evaluate the fall rate 3 months following the implementation of the educational intervention to determine if a reduction in resident fall rates have occurred. This goal was met at the 3-month follow-up date with no reported falls at the facility.

Expected/Unexpected Findings

The expected findings focus on the outcomes that resulted from the educational program. It was anticipated that staff education to increase awareness of the problem and to implement change for evaluating resident fall risk would occur. Results from the pre-/post-intervention assessments indicated that staff knowledge did indeed increase. The increases were statistically significant, suggesting that the educational program did have an impact on staff knowledge. It is also expected that this knowledge will translate into improvements in the ability of staff to prevent falls among residents, a process that will lead to a lower resident fall rate within the facility. Given that the current fall rate is 38.7%, reductions in this fall rate will have significant implications for resident safety, health, and well-being.

Unexpected findings related to the investigation stem from two specific issues. First, although 10 staff members did agree to participate in the educational program, it was anticipated that most staff would agree to participate. Promotion of the program within the facility focused on the ability of staff members to improve health and safety for residents. This appeal does not appear to have been highly effective, as only 20% of the healthcare staff working at the facility agreed to voluntarily participate in the program. The second unexpected finding was with respect to staff knowledge regarding resident falls and fall prevention. Results obtained from the pre-intervention assessments indicated that many of the staff members participating in the program lacked basic knowledge regarding resident falls and fall prevention. This was troubling given the prevalence of the problem and the fact that steps can be taken to address the issue in practice.

Project Strengths and Limitations

The strengths of the project were derived from the results that were obtained following the completion of the educational program. Results from the paired *t*-test indicates that there was a statistically significant change ($p = 0.000$) in staff knowledge following the intervention. This suggests that the educational program was effective for increasing staff awareness regarding the steps that are needed to help prevent resident falls in the assisted living facility. Given the strength of the results from the *t*-test, it would seem that staff education could be a highly useful tool for improving fall prevention in the assisted living facility. Thus, there is an impetus to consider expanding the program and further establishing the program as a necessary component of staff training.

Although the current project did demonstrate the relevance of the program for augmenting staff knowledge on the topics of resident falls and fall prevention, there were pertinent weaknesses that need to be considered. First, the program only included 10 staff members, an issue that may limit the ability of all staff to engage in fall prevention for residents. Further, the staff included 80% females and included only 20% registered nurses. These demographic factors were not evaluated statistically; however, these limits on the sample would impact the generalizability of the findings from the research. In addition, the project did not include a control group to demonstrate causality in the results. While it is reasonable to assume that there is a correlation between the educational program and staff knowledge, this cannot be confirmed without the use of a control group. Results for the program are only being evaluated over the short-term. Longitudinal assessments of fall rates and staff knowledge would be needed to ensure

that the changes initiated as a result of the program remain a permanent part of practice to reduce resident fall rates. Finally, objective 4 for the project has not been met. Data collection for this objective is still ongoing, limiting assessment of the final results that can be achieved from staff education.

To assess the weaknesses for this project, the Donabedian model was essential. Scholars examining the use of this model argue that it provides a framework that facilitates the ability of the practitioner to evaluate and recognize differences in structure, process, and outcome to foster a more complete understanding of the results achieved from evidence-based practice (Gentry, Powers, Azim, & Maidrag, 2018). Using the three categories of structure, process, and outcome, it was possible to assess the current DNP project to identify key issues of concern. Overall, structure of the program appears to have been effective for meeting the objectives of the project. While the process was effective, there were noted weaknesses regarding the method including a small sample and the lack of a control group. Outcomes were commensurate with the literature on the topic of improving staff knowledge—i.e., that education can be effective; however, the inability to demonstrate a cause-effect relationship between the data does engender some uncertainty regarding the true effects of the educational program.

<div align="center">

Project Implications

</div>

Practice

The implications of the findings for practice are quite extensive and suggest that steps should be taken to augment fall prevention activities within assisted living facilities. Silva-Smith et al. (2013) argued that even though falls are a significant issue of concern for assisted living facilities, these events are often overlooked in terms of both reporting

and prevention. The results obtained from this DNP project not only demonstrate the salience and relevance of the problem, but also the results do suggest that efforts to address the problem can be made. Falls have a deleterious impact on the patient's overall health and quality of life, making it imperative to prevent these events in older adults (Dingova & Kralova, 2017). Clearly, the results from this project support a change in practice to educate staff and to foster efforts to improve resident assessment to prevent falls.

Additional consideration must be given to the fact that 60% of the current sample involved certified nursing assistants (CNAs). In this care environment, CNAs provide a majority of the hands-on care for the patient including activities such as helping patients navigate throughout the facility. Although CNAs are often not targeted for training to address patient safety issues, the role of this provider in the ALF may make it necessary to consider efforts to target this group and to ensure that those working in these positions understand patient safety issues and what can be done to address these concerns in the direct care of the patient.

Healthcare Outcomes

The implications for healthcare outcomes for older adults living in ALFs is significant as well. Research regarding the health impacts of falls on older adults indicated that these events can impact physical health, leading to accidental death (Morris et al., 2016). If falls do not result in significant physical injury to the patient, they can have a deleterious impact on the patient's quality of life (Dingova & Kralova, 2017). More specifically, research indicates that falls can result in a fear of falling that limits the willingness of the older adult to engage in independent activities (Dingova & Kralova,

2017). Over time this can result in a decline in physical activity, a situation that will impact the physiological functioning of the patient (Dingova & Kralova, 2017). The results from this DNP project suggest that by educating nursing staff, including CNAs, it may be possible to provide the foundation needed to prevent falls among residents. Fewer falls among residents will ultimately lead to improved health for the older adult.

Healthcare Delivery

Education of staff to prevent falls for residents of the assisted living facility may have implications for healthcare delivery. Because the results of this project support a practice change, it is possible that the evidence acquired from this project will be used to build evidence-based practice guidelines for the delivery of care in assisted living facilities. Although there are currently few evidence-based guidelines for delivering care in assisted living facilities, this project and the results obtained do demonstrate the need for a change in practice. Staff members need to be aware of the problem and must have the knowledge needed to prevent falls in residents of assisted living facilities. The need for this education may prompt efforts to ensure that staff training is mandated and that all residents of ALFs are consistently assessed for fall risk.

Healthcare Policy

Changes in healthcare policy that may result from the current project may initially be limited to the ALF where the program was implemented. Leaders may be willing to adopt staff training as a standard component of providing resident care. This change in policy may require staff working in the facility to undergo initial and follow-up training to ensure that fall risk is adequately assessed for all residents and that staff are aware of the most common factors contributing to falls in ALF residents.

Recommendations for Future Research

Recommendations for future research are numerous and could include a large scale, multi-site study utilizing a randomized controlled trial. In this type of investigation, the fall education protocol implemented in this project would be provided to staff at randomly selected ALFs agreeing to participate. The remaining assisted living facilities would be placed on a waitlist for staff training. This type of research would provide a control group to demonstrate causality in the findings. The results would provide a clear understanding of the direct impact of the educational program on outcomes including staff knowledge as well as changes in fall rates that occur at each of the facilities.

Additional research to understand the topic could include qualitative investigations of staff perceptions of the fall prevention education protocol and its impact on resident care. Staff attitudes toward resident falls could be evaluated along with the ability and willingness of staff to engage in practice change to address this issue. This type of qualitative inquiry may provide insight regarding the challenges that may arise when implementing this type of program in practice. Based on the findings, change agents may be better able to address staff concerns when implementing new programs to prevent resident falls.

Summary of the DNP Project

The DNP project provided a formidable foundation upon which to address a significant issue of concern within the assisted living facility: resident falls. Even though this problem appears to be quite common, staff members lack the knowledge needed to identify the issue in practice and to engage in prevention. Through the use of an educational program to augment staff awareness, knowledge, and practice, it is possible

to enhance outcomes for staff to take a more active role in addressing the problem. Clearly, there are multiple implications from this project along with multiple avenues of future research. However, this project provides an important stepping stone in building practice to enhance the health and well-being of older adults living in assisted living facilities.

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Appendix A: IRB/Approval Letters

NOVA SOUTHEASTERN UNIVERSITY
Institutional Review Board

MEMORANDUM

To: **Joan Louis Pierre**

From: **Vanessa Johnson,**
        Center Representative, Institutional Review Board

Date: **January 12, 2018**

Re: **IRB #: 2018-23; Title, "REDUCING THE PREVALENCE OF FALLS IN THE
ASSISTED LIVING FACILITY SETTING"**

I have reviewed the above-referenced research protocol at the center level. Based on the information provided, I have determined that this study is exempt from further IRB review under **45 CFR 46.101(b) (Exempt Category 2)**. You may proceed with your study as described to the IRB. As principal investigator, you must adhere to the following requirements:

1)   CONSENT: If recruitment procedures include consent forms, they must be obtained in such a manner that they are clearly understood by the subjects and the process affords subjects the opportunity to ask questions, obtain detailed answers from those directly involved in the research, and have sufficient time to consider their participation after they have been provided this information. The subjects must be given a copy of the signed consent document, and a copy must be placed in a secure file separate from de-identified participant information. Record of informed consent must be retained for a minimum of three years from the conclusion of the study.

2)   ADVERSE EVENTS/UNANTICIPATED PROBLEMS: The principal investigator is required to notify the IRB chair and me (954-262-5369 and Vanessa Johnson, respectively) of any adverse reactions or unanticipated events that may develop as a result of this study. Reactions or events may include, but are not limited to, injury, depression as a result of participation in the study, life- threatening situation, death, or loss of confidentiality/anonymity of subject. Approval may be withdrawn if the problem is serious.

3)   AMENDMENTS: Any changes in the study (e.g., procedures, number or types of subjects, consent forms, investigators, etc.) must be approved by the IRB prior to implementation. Please be advised that changes in a study may require further review depending on the nature of the change. Please contact me with any questions regarding amendments or changes to your study.

The NSU IRB is in compliance with the requirements for the protection of human subjects prescribed in Part 46 of Title 45 of the Code of Federal Regulations (45 CFR 46) revised June 18, 1991.

Cc: Deirdre Krause Vanessa Johnson

Appendix B: Pre-Intervention Knowledge Assessment

Demographic Questions

Please answer the following questions

1. What is your gender (circle one)? Female   Male

2. What is your current age? _____

3. With which race/ethnicity do you identify (circle one)?

   White   African American   Latino   Asian   Other

4. What is your current position in the organization (circle one)?

   APRN   Registered Nurse   CRNA   Home Health Aide

5. How many years have you been employed in this

   organization?_____

Knowledge Questions

True/False: Circle the correct answer to the question

1. Patient disorientation can result in a fall. True   False

2. Gender plays a role in patient falls. True   False

3. For most residents, the bed should be left in the lowest position. True   False

4. New admissions have the same risk of falls as patients that have been in the facility

   for more than 60 days. True   False

5. The Timed Get-Up-and-Go Test is an effective assessment of patient fall risk.

   True   False

6. Medications can contribute to patient fall risk. True   False

7. Altered elimination is a risk for falls. True   False

8. Patients with symptoms of depression have a higher risk of falls than patients without

   these symptoms. True   False

9. Falls in assisted living facilities are not an issue of concern. True   False

10. Certain medications can increase patient fall risk. True   False

Multiple Choice: Answer the questions by circling **ONE** correct response

11. All of the following are non-modifiable risk factors that may increase a patient's risk of falls **EXCEPT**:

    A. Gender

    B. Race

    C. Age

    D. Smoking

12. Assessment of the Timed Get-Up-and-Go Test includes all of the following **EXCEPT:**

    A. Ability to rise in a single motion.

    B. Being able to push up in one attempt.

    C. Able to rise without assistance.

    D. Able to walk without assistance.

13. Which of the following class of medications can contribute to a patient fall:

    A. Antiepileptics

    B. Antibiotics

    C. ACE Inhibitors

    D. Statins

14. What score on the Hendrich II Fall Risk Assessment wound indicate that the patient is at risk for a fall?

    A. 5 or above

    B. 7 or above

    C. 10 or above

    D. 15 or above

15. All of the following are environmental factors that can contribute to a patient fall **EXCEPT:**

    A. Floor surface

    B. Medications

    C. Lighting

    D. Footwear

Short Answer: Answer the questions using the space provided.

16. While ambulating a patient, he states that he is dizzy. What should the nurse do?

    _____

    _____

17. An elderly patient has been prescribed a benzodiazepine to combat anxiety. What should the nurse do?

    _____

    _____

    _____

18. What is the proper procedure for conducting the Timed Get-Up-and-Go Test?

    _____

    _____

19. Why is incontinence considered a risk for falls in patients?

    _____

    _____

20. List three side effects of benzodiazepines (Ativan, Valium) that can contribute to a patient fall.

    _____

    _____

    _____

Appendix C: Assessment Tool Answer Key

Knowledge Questions

True/False: Circle the correct answer to the question

1. Patient disorientation can result in a fall. **True**   False

2. Gender plays a role in patient falls. True   **False**

3. For most residents, the bed should be left in the lowest position. **True**   False

4. New admissions have the same risk of falls as patients that have been in the facility for more than 60 days. **True**   False

5. The Timed Get-Up-and-Go Test is an effective assessment of patient fall risk. **True**   False

6. Medications can contribute to patient fall risk. **True**   False

7. Altered elimination is a risk for falls. **True**   False

8. Patients with symptoms of depression have a higher risk of falls than patients without these symptoms. **True**   False

9. Falls in assisted living facilities are not an issue of concern. True   **False**

10. Certain medications can increase patient fall risk. **True**   False

Multiple Choice: Answer the questions by circling **ONE** correct response

11. All of the following are non-modifiable risk factors that may increase a patient's risk of falls **EXCEPT**:
    E. Gender
    F. Race
    G. Age
    H. Smoking

12. Assessment of the Timed Get-Up-and-Go Test includes all of the following **EXCEPT:**
    E. Ability to rise in a single motion.
    F. Being able to push up in one attempt.
    G. Able to rise without assistance.
    H. Able to walk without assistance.

13. Which of the following class of medications can contribute to a patient fall:

   E. **Antiepileptics**

   F. Antibiotics

   G. ACE Inhibitors

   H. Statins

14. What score on the Hendrich II Fall Risk Assessment wound indicate that the patient is at risk for a fall?

   E. **5 or above**

   F. 7 or above

   G. 10 or above

   H. 15 or above

15. All of the following are environmental factors that can contribute to a patient fall **EXCEPT:**

   E. Floor surface

   F. Medications

   G. Lighting

   H. **Footwear**

Short Answer: Answer the questions using the space provided. **Any of the bold answers or similar**

16. While ambulating a patient, he states that he is dizzy. What should the nurse do?
   ___**Stop ambulating, rest, evaluate, get assistance**_____

   _____

17. An elderly patient has been prescribed a benzodiazepine to combat anxiety. What should the nurse do? _____**Be aware that that will place the resident at higher risk of falling**_____

18. What is the proper procedure for conducting the Timed Get-Up-and-Go Test? ____
   On the word GO you will stand up, walk to the line on the floor, turn around and walk back to the chair and sit down. Walk at your regular pace._____

19. Why is incontinence considered a risk for falls in patients? _____**Muscle weakness, underlying worsening health problem, new acute health problem**_____

20. List three side effects of benzodiazepines (Ativan, Valium) that can contribute to a patient fall. ____**Lightheadedness, dizzy, sleepy, weakness, confusion**_____

Assessment D: Post-Intervention Knowledge Assessment

Knowledge Questions

True/False: Circle the correct answer to the question

1. Antileptic medications can increase patient fall risk. True False

2. Patient disorientation can result in a fall. True False

3. The Timed Get-Up-and-Go Test is an effective assessment of patient fall risk.
    True False

4. Altered elimination is a risk for falls. True False

5. New admissions have the same risk of falls as patients that have been in the facility
    for more than 60 days. True False

6. Gender plays a role in patient falls. True False

7. Medications can contribute to patient fall risk. True False

8. For most residents, the bed should be left in the lowest position. True False

9. Patients with symptoms of depression have a higher risk of falls than patients without
    these symptoms. True False

10. Falls in assisted living facilities are not an issue of concern. True False

Multiple Choice: Answer the questions by circling **ONE** correct response

11. All of the following are environmental factors that can contribute to a patient fall
    EXCEPT:
    I. Floor surface
    J. Medications
    K. Lighting
    L. Footwear

12. What score on the Hendrich II Fall Risk Assessment wound indicate that the patient is
    at risk for a fall?
    I. 5 or above
    J. 7 or above
    K. 10 or above
    L. 15 or above

13. Assessment of the Timed Get-Up-and-Go Test includes all of the following **EXCEPT:**

    I.   Ability to rise in a single motion.

    J.   Being able to push up in one attempt.

    K. Able to rise without assistance.

    L. Able to walk without assistance.

14. All of the following are non-modifiable risk factors that may increase a patient's risk of falls **EXCEPT**:

    I.   Gender

    J.   Race

    K. Age

    L. Smoking

15. Which of the following class of medications can contribute to a patient fall:

    I.   Antiepileptics

    J.   Antibiotics

    K. ACE Inhibitors

    L. Statins

Short Answer: Answer the questions using the space provided.

16. List three side effects of benzodiazepines (Ativan, Valium) that can contribute to a patient fall.

    _____

    _____

    _____

17. Why is incontinence considered a risk for falls in patients?

    _____

    _____

18. An elderly patient has been prescribed a benzodiazepine to combat anxiety. What should the nurse do?

    _____

_____

_____

19. While ambulating a patient, he states that he is dizzy. What should the nurse do?

_____

_____

20. What is the proper procedure for conducting the Timed Get-Up-and-Go Test?

_____

_____

Appendix E: Flyer for Recruiting Participants

Appendix F: Fall Protocol

Risk Factor	Scale	Points	Patient's Score
History of Falls (Within the last 60 days)	Yes	25	
	No	0	
Secondary Diagnosis (Two or more medical diagnosis)	Yes	15	
	No	0	
Ambulatory Aid	Furniture	30	
	Crutches/ Walker/Cane	15	
Incontinent	Yes		
	No	0	
Gait/Transferring	Impaired	20	
	Weak	10	
	Normal/ Bes rest/ Immobile	0	
Mental Status	Forget limits	15	
	Oriented to own ability	0	

Total Score: _____

High risk = > 51

Moderate risk = 25-50

Low risk = 0-24

Appendix G: Class Outlines

Classroom Session 1

Topics Reviewed:

- Prevalence and risk of falls in community dwelling older adults including residents of the assisted living facility.

- Hendrich II Fall Assessment: What it is and how it can be used in practice.

- The impact of confusion/disorientation/impulsivity on patient fall risk.

- Effect of incontinence on fall risk.

- The role of dizziness/vertigo in fall risk

- Demographic factors leading to falls.

Teaching Methods

- Pre-education assessment of attendee knowledge using Appendix B.

- Topics introduced through lecture.

- Whiteboard used to outline key points.

- Attendees provided with pens and paper to take structured notes.

- Question and answer session following instruction.

- Discussion regarding application of knowledge to the ALF.

- All attendees provided with a copy of the Hendrick II Fall Assessment Tool

Classroom Session 2

Topics Reviewed:

- Review of information from first session.

- Role of medication in fall risk.

- Overview of the Timed Get-Up-and-Go Test

Teaching Methods

- Topics introduced through lecture.

- Whiteboard used to outline key points.

- Attendees provided with pens and paper to take structured notes.

- Post-education assessment of attendee knowledge using Appendix D.

- Question and answer session following instruction.

- Discussion regarding application of knowledge to the ALF.

- YouTube Video shown to the class demonstrating Timed Get-Up-and-Go test (https://www.youtube.com/watch?v=j77QUMPTnE0).