

Spring 2016

Implementation and Evaluation of a Community-Based Falls Prevention Program

Adelyn R. Enders

Elizabethtown College, endersa@etown.edu

Follow this and additional works at: <https://jayscholar.etown.edu/otstu>



Part of the [Occupational Therapy Commons](#)

Recommended Citation

Enders, Adelyn R., "Implementation and Evaluation of a Community-Based Falls Prevention Program" (2016). *Occupational Therapy: Student Scholarship & Creative Works*. 9.

<https://jayscholar.etown.edu/otstu/9>

This Student Research Paper is brought to you for free and open access by the Occupational Therapy at JayScholar. It has been accepted for inclusion in Occupational Therapy: Student Scholarship & Creative Works by an authorized administrator of JayScholar. For more information, please contact kralls@etown.edu.

Implementation and Evaluation of a Community-Based Falls Prevention Program

Adelyn R. Enders

Elizabethtown College

Honors in the Discipline Project

Linda M. Leimbach, Sc.D., OTR/L

April 9, 2016

Abstract

This paper documents the program development and evaluation of a fall prevention series conducted at a local continuing care retirement community (CCRC). Previous literature has illustrated the prevalence of falls in older adults, as well as the significant impacts of fall prevention programs in community-based settings for the well elderly. The methodology that guided this program was based on the Lifestyle Redesign: Well Elderly Study (Mandel et.al, 1999). Coordinators of the CCRC assisted in conducting a needs assessment as well as in selecting well-elderly participants in the independent living community who they felt would be well suited for the program. Once admitted to the program, participants were encouraged to attend a three-week lecture series regarding fall preventions delivered by this author. The sessions were tailored to the specific retirement community and utilized a variety of teaching approaches in order to address their needs. The topics in the sessions included fall prevalence and risk factors, exercise and physical activity, and home modifications as they relate to fall prevention. Information was collected relevant to fall prevention knowledge and current fall prevention practices in the first and last sessions in the form of a pre-test and a post-test. These two tests were independent of one another, however highlighted that individuals in the program gained knowledge relevant to fall prevention and implemented various changes into their daily habits and routines in order to prevent falls. However, as a result of inconsistent attendance and independently developed test measures, no widespread conclusions could be generalized to all of the participants in the program. It is recommended that participants at this CCRC would benefit from long-term fall prevention programming with a more comprehensive approach, as well as a team effort from other staff to ensure that individuals consistently attend sessions.

Introduction

Falling is not a standard part of aging; although that has been a common assumption many young and older individuals have held for years. Not only can falling lead to lengthy hospital stays and a range of physical deficits, but it also has detrimental affects on an individual's overall independence and emotional wellbeing (Akyol, 2007). There are many risk factors that may contribute to falling, with two of the most common in community-dwelling elders being lack of physical activity and poor home functionality and space (American Occupational Therapy Association [AOTA], 2012). Community-dwelling elders are at an increased probability of falling due to the fact that numerous risk factors are present in this population, and a variety of confounding dynamics may deter one's ability to make a full recovery (Centers for Disease Control and Prevention [CDC], 2012).

A wide range of fall prevention programs currently exists, with most having noteworthy results; therefore, they are an asset in reducing the prevalence of falls (AOTA, 2012). These programs range from addressing specific risk factors to encompassing multiple risk factors, and have been applied and evaluated given a variety of inclusion and exclusion criteria (CDC, 2012).

The CCRC I completed my project at offers a range of living opportunities. The retirement community aims to not only reduce the risk of falls, but also to prevent falling from occurring in the first place. Residents of this independent living community have benefited from receiving an education on common risk factors as they relate to falls, as well as education as it relates to exercise and home modification in order to prevent falls through the author's program. There is still a need for individuals to receive continual education regarding fall prevention. Throughout the course of three weeks I developed and implemented a falls prevention program

specifically tailored to the needs of individuals in this community, with the guidance of the Activities Coordinator of the facility.

Literature Review

This review of the literature first aims to examine the prevalence of and problems related to falls in community-dwelling elders. The next section examines specific factors that increase the risk of falling, and following that specific fall intervention programs are discussed. The final section of this review looks at the specific needs related to fall prevention that are present at a local independent living community for elders who reside in a range of housing options. The information obtained from the literature served as a basis for my educational service-based program that I delivered at the local retirement community.

Falls Problem/Prevalence in Community-Dwelling Elders

Falls not only affect one's well being physically, but also may negatively impact one's mental and emotional health. The likelihood of falling increases dramatically as an individual ages, therefore there is a great effort put forth by health professionals in determining risk factors as well as preventative measures to decrease the risk of falls (CDC, 2012). Specifically, the chance of falling among older adults increases to nearly 40 percent after the age of 80 years old, and this percentage number is only expected to rise (Heighton, Marci, Reid, & Rivers, 2012). Along with this, those older adults who fall once are two to three times more likely to fall again at any point after their fall (CDC, 2012). About one out of 10 falls among older adults results in a serious injury, making them the leading cause of injury deaths among older adults (Mayo Clinic, 2010). With these numbers in mind, falling at any age can be extremely detrimental to one's health. Falls are more common in older age, and also an individual over the age of 65 years typically experiences a longer recovery period after a fall (CDC, 2012).

Children and athletes have a higher incidence of falls than community-dwelling elders, however the elderly have a higher susceptibility to injury, which makes their falls so devastating (Mayo Clinic, 2010). More than 95% of hip fractures result from falls, most often from landing sideways on the hip (Mayo Clinic, 2010). The Centers for Disease Control and Prevention (2012) estimated that nearly 40 percent of individuals hospitalized from hip fractures do not return home and are not capable of living independently again. Also, aside from hip fractures, falls commonly result in ankle, femur, and wrist fractures (U.S. Department of Health and Human Services, National Institute of Senior Health [USDHHS, NISH], 2013). Not only are fractures an issue when it comes to falling, but it is also noted that falls are one of the most common causes of traumatic brain injuries in older adults (CDC, 2012). As one may conclude based on evidence, falls have the ability to remarkably limit one's independence through the physical and emotional toll it bears.

Also, it is vital to keep in mind not only how falls may affect an individual at a personal level, but also the impact they have on the economy. Fall-related injuries among older adults, especially among older women, are associated with substantial economic costs (USDHHS, ElderCare, 2014). As the number of older adults increases dramatically in the next few decades, so will the economic burden of falls. In 2013, the direct medical costs of falls, adjusted for inflation, were \$34 billion (CDC, 2012). Conversely, Haines et al. (2008) conducted a study that attempted to assess the economic burden of fall for a given individual. The cost to a health service of one cognitively intact patient experiencing a single traumatic fall was estimated to be around \$14,591 at the time of the study.

Currently, approximately 30 percent of community-dwelling older adults over the age of 65 years fall each year (CDC, 2012). Most community dwelling older adults fall during normal,

non-hazardous activity. These include such activities as walking, changing position or performing basic activities of daily living. Hazardous activities such as climbing on ladders, standing on an unstable surface or playing sports account for a very small percentage of falls (USDHHS, NISH, 2013). A recent American Association for Retired Persons (AARP, 2010) housing survey said, “73% of older Americans want to stay in their current homes for the rest of their lives” (p.2), however studies show that most homes are not designed to accommodate the needs of people over age 65.

Fall Risk Factors

Upon evaluating the impact falls have on the community-dwelling elder, it is pertinent to discuss some of the most prevalent risk factors that increase the likelihood of falling. These risk factors may be categorized as either intrinsic or extrinsic.

At the most basic level, falls occur when a sudden change in balance or strength overcomes one’s ability to stay on their feet (Barnett, Smith, Lord, Williams, & Baumand, 2003). Intrinsic risk factors are those factors that typically may be found directly within the individual, and include elements such as changes in vestibular, proprioceptive, and sensory functions, as well as declines in musculoskeletal and cognitive functioning (Akyol, 2007). Improper nutrition, lack of physical exercise, and existing physical disabilities are also intrinsic elements that may increase one’s risk of falling (Espiritu, 2013). Many adults who may have fallen, even if not injured, experience fear of falling. Fear of falling may lead to a decrease in mobility and physical activity, and therefore actually increase one’s risk of falling (CDC, 2012). Nearly 35 percent to 55 percent of community-dwelling elders will experience this phenomenon at some point in their lifetime, with risk factors including being female and social isolation (Painter-Patton & Trujillo, 2015). Other intrinsic risk factors according to Painter-Patton, and Trujillo (2015) may include a

history of falling, physical deconditioning, and a decreased performance of activities of daily living.

Not only are there numerous intrinsic factors that impact the likelihood of falling, but extrinsic factors may account for between 33% to 50% percent of falls (Akyol, 2007). Medication usage, and more specifically the use of multiple medications, has been cited throughout the literature as one of the most modifiable factors for combating the fall epidemic in older adults (Huang et al., 2012). Other extrinsic or external factors include those relevant to the home environment such as inadequate lighting throughout the home, unsuitable toilet height, throw rugs, clutter, slippery or wet surfaces, and the absence of grab bars and guide rails (USDHHS, NISH, 2013). Falls that happen within the home occur most frequently in the bathroom, followed by the bedroom and kitchen (Akyol, 2007). One thing that is significant to keep in mind is that falls typically do not occur solely based on one risk factor, but rather occur when a variety of intrinsic and extrinsic factors interact (AOTA, 2012).

Existing Fall Prevention Programs

Upon examining various intrinsic and extrinsic risk factors documented throughout the literature, it is essential to assess current intervention programs that aim to reduce falls for community-dwelling elders. The interventions that will be discussed address not only single faceted risk factor programs, but also multifaceted programs and their impact in reducing falls.

In recent years, systematic reviews of fall intervention studies have established that prevention interventions can reduce falls (AOTA, 2012). There are countless numbers of fall intervention studies that exist, targeting not only specific risk factors relating to exercise, home modifications, and clinical features, but also multifaceted interventions that address multiple factors in a an all encompassing approach.

Exercise-based programs.

Exercise has been cited throughout the literature as one of the most significant interventions that should be addressed in order to decrease the risk of falling (CDC, 2012). According to one Australia study by Merom et al. (2013), exercise was found to be an accepted stand-alone fall prevention strategy, specifically if it targeted balance training. Another study found that exercise specifically needed to focus on balance and coordination, strength, reaction time, and aerobic capacity in order to be significant in reducing the risk of falls (Barnett, Smith, Lord, Williams, & Baumand, 2003).

According to the World Health Organization (2014), exercise should be included in every multifaceted fall prevention program and is particularly successful when applied for 10 weeks or longer. *Tai Chi: Moving for Better Balance*, is one exercise intervention listed in the CDC compendium of effective fall interventions for community-dwelling older adults. In this particular intervention, the effectiveness of a six-month program of Tai Chi classes was compared with a program of stretching exercises. Participants in the Tai Chi classes had fewer falls and fewer fall injuries, and their risk of multiple falls decreased by nearly 55 % (Li et al., 2005). Aside from Tai Chi, which specifically aims to improve balance and lessen the amount of unnecessary swaying movements, there are other effective exercise programs documented in the literature, such as the *Otago* exercise program. The *Otago* exercise program was tested in four randomized controlled trials and one controlled multi-center trial. This specific program was individually tailored and utilized muscle strengthening and balance retraining exercises of increasing difficulty, combined with a walking program. This extensively tested fall prevention program has been tried worldwide and has been proven to have equal benefit for both men and women, decreasing the rate of falls by up to 35 percent (Campbell et al., 2005).

Home modification programs.

Aside from exercise, another heavily researched area that has gained much attention over the years as it relates to fall prevention pertains to home modifications. Generally speaking, home modifications are changes made to adapt living spaces to meet the needs of people with physical limitations so that they can continue to live independently and safely (USDHHS, ElderCare, 2014). According to Eldercare, practically 60% of falls occur in the home (2014), however the National Institute of Senior Health (2013) has discovered this number to be much higher, at nearly 72.8%. It is inconclusive whether or not “the home” as referred to in these resources includes the surrounding exterior of the home, however this is a factor to consider when implementing specific home modification interventions.

A number of aspects within the home has been assessed as they relate to falling, with bathroom safety and lighting throughout the home being two of the greatest issues (CDC, 2012). Heighton et. al (2012) discovered that falls occurred most commonly in the bathroom, often due to unsuitable toilet height or the absence of grab bars and mats on the floor of the bathtub or shower. Again, it is necessary to keep in mind that not one risk factor alone leads to falling, rather a number of elements interact in such a way that a fall may occur.

Pighills, Torgerson, Sheldon, Drummond, and Bland (2011) conducted a study that related to home modifications in reducing the risk of falls. This particular study utilized occupational therapists in order to work with participants living in the community to identify potential home hazards and risky behaviors. Once these changes, whether to the home or behaviors of the individual were implemented, fall rates were reduced by 46%. The Harvard Health Letter published an article in July of 2015 stating that nearly 26% of falls could be reduced by inexpensive home fixes. This article emphasized the significance of “cheap fixes”,

which are economically feasible solutions given the amount of money that is devoted to caring for individuals who have fallen and also money that has gone into fall prevention programs.

Multifaceted programs.

Multifaceted fall prevention programs aim to assess and improve upon numerous risk factors that are associated with falling, such as medication usage, visual problems, footwear, environmental hazards both inside and outside the home, and issues that may stem from lack of exercise such as poor mobility and balance (WHO, 2014). One particular study, the *Falls Team Prevention Program* by Logan et al. (2010), utilized a team-based individually tailored program that included group education, group and home-based strength and balance exercises, medication review, blood pressure screening, and home hazard assessments and modifications. After 12 months, the fall rate was 55% lower among people who took part in the program compared to those who did not (Logan et al., 2010).

As evidenced by the literature and various studies, a majority of the existing multifaceted fall prevention programs as published by the American Occupational Therapy Association, as well as the Center for Disease Control and Prevention, have significant practical and clinical results. These studies emphasize the importance of implementing fall prevention programs for community-dwelling older adults. As I developed my education-based fall prevention program for a local retirement community in the Lancaster County area, I utilized various studies from the literature in order to frame the basis of my program.

The Continuing Care Retirement Community

This portion of the literature review describes the needs of the CCRC as they related to fall prevention. The fall prevention program was designed with the specific needs of the community in mind.

The local continuing care retirement community in this project is an independent living facility for community-dwelling seniors, which provides a range of living options from skilled nursing to independent residences. The retirement community in the Lancaster County area promotes continual improvement, engagement in the broader community, and commitment to complete wellness in order to provide a quality and resident-focused continuum of care for the older adults served (*Homestead Village Mission Statement*, n.d.).

In years past, Elizabethtown College occupational therapy students implemented the *Safe Steps* Program for several residents living in the independent living units of this CCRC. This program included education regarding risk factors of falls and ways to combat these factors such as rearranging the home space, understanding the way vision and balance works, as well as becoming equipped with a variety of exercises that have been significantly found to reduce the risk of falls (Leimbach, Martin, Richert, Slifko, & Weaver, 2013). Overall, the *Safe Steps* fall prevention program was a multifactorial program aimed at promoting the continued health and well being of individuals living at this CCRC by possibly reducing their risk of falling as well as the number of falls (Leimbach, Dell, Ellis, & Stollo, 2014; Leimbach, Martin, Richert, Slifko, & Weaver, 2013). The *Safe Steps* program used not only an educational component to educate participants, but also used home assessments and physical activity in order to target balance and physical mobility.

There is a continuous need at the retirement community for fall prevention education, and specifically education regarding how to implement changes into habits and routines as they relate to exercise and home modifications. Although in years past there have been various educational and interactive programs directed specifically at individual elders of the community, there is still

a need in line with the community's mission statement in order to promote continual improvement and complete wellness for their residents.

Summary

An education-based fall prevention program developed for the residents of the local retirement community was accomplished through assessing their needs in relation to fall prevention. Upon review of the literature, it is relevant that falls are a continual problem for community dwelling elders. Nearly one in three older adults over the age of 65 years living in the community fall each year (AARP, 2010). Community-dwelling elders are faced with a variety of intrinsic and extrinsic risk factors that increase the risk of falling. There is evidence supporting a number of effective single and multifaceted intervention programs. Some of the most successful programs target not only one risk factor such as exercise, but address a number of problems that may arise for community-dwelling elders (CDC, 2012). Two of the most common interventions specifically target physical activity and home modification in preventing falls, and are particularly successful when used as a part of a multifaceted program (AOTA, 2012). The local retirement community I completed my project at is for older adults over the age of 65 years of various levels of function. The *Safe Steps* program was previously carried out by occupational therapy students from Elizabethtown College and was tailored for independent individuals of this community. The aim of my current program was to give general and education based information to selected residents from the community. This was done in order to increase their awareness of fall prevalence and incidence, further their understanding of risk factors, and lastly to engage them in the process of implementing fall prevention strategies in their everyday lives.

Methodology

This section discusses the development of a community-based fall prevention program at a local retirement community. I will first present the program development and evaluation methodology that guided the structure of my project. I will then discuss the needs assessment, participants, and recruitment process of the fall prevention program. This is followed by a description of the program implementation, which included three educational sessions. This section concludes with a description of the methods used for data collection and analysis.

Program Development and Evaluation Methodology

The nature of the project I completed was that of program development and evaluation. The program development and evaluation methodology of the community-based fall prevention program was based on a needs assessment (Mandel, Jackson, Zemke, Nelson, & Clark, 1999). In order to fully develop the program, I needed to collaborate with an individual who had a firm understanding of the goals of my project as well as the needs within the retirement community. As discussed in the broad overview of the *Lifestyle Redesign: Well Elderly Study*, there are a multitude of categories that impact the development of a program. Some of the categories in this program that were used and tailored to the current retirement community included didactic presentation, peer exchange, direct experience, and personal exploration (Mandel et.al, 1999). The outcomes obtained through the program development and evaluation process was in the form of subjective feedback, field notes from educational sessions, and pre-test and post-test results in order to evaluate the program, mainly from the perspective of the participants. The program development and evaluation methodology informed my understanding of the different elements of developing a community-based program, including conducting a needs assessment and formulating a conclusion regarding the impact, of the program upon the participants' understanding and awareness of fall prevention.

Needs Assessment

During an initial meeting with the Activities Coordinator and Health Coordinator of the retirement community, an informal needs assessment was conducted. Both of the coordinators explained that there is currently a lack of fall prevention initiatives present within the community. The coordinators described that there needed to be a better understanding and awareness of the exercise opportunities provided by the retirement community. They also stated that many individuals were unaware of the home modifications that could be made if management was contacted. Physical activity and home modifications therefore were deemed as important areas to cover in relation to fall prevention based on the needs assessment. The coordinators also felt it would be beneficial to give an overview of the risk factors, prevalence, and general falls problem in the community-dwelling elder population. The sessions were then focused and developed based on the areas deemed important by the coordinators, both of whom work closely with the residents of the retirement community.

Participants

Participants in the program resided in the independent living apartments, Mews, or cottages at the community. Participants in this program were considered to be in the well-elderly population. The participants may or may not have had a fall history, were ambulatory, and were invited to attend the fall prevention program solely based on the judgment of Activities Coordinator and Health Coordinator's assessments that they were cognitively intact. In order to be a part of the program, participants were required to commit to a three-week program, which took place on Wednesday evenings beginning on October 7, 2015.

Recruitment

I initially aimed to recruit between 15 and 20 participants to be a part of the fall prevention program. The Activities Coordinator and Health Coordinator of the retirement community compiled a list of approximately 40 residents who were deemed cognitively intact and whom they decided would be eligible participants for the program. An email was sent out from the Activities Coordinator to the selected residents explaining the intent of the program and an overview of the topics that would be covered. Interested applicants replied to the Activities Coordinator to sign up and were accepted on a first come, first served basis. The email invitation was sent approximately one month prior to the first session. Advertisements for the program were also placed on flyers that were located throughout the retirement community's main lobby one month prior to the first session. The Activities Coordinator was instrumental in the recruitment process and advertising throughout the weeks leading up to when the program took place.

Program Implementation

The components of the fall prevention program included three educational sessions, presented over a period of three consecutive weeks on Wednesday evenings. Upon enrollment in the program, participants agreed to attend all three of the weekly educational sessions unless unforeseen circumstances arose.

This particular program was based on several community-based fall prevention programs as described in the literature review, and was aligned with elements within the Lifestyle Redesign Well Elderly Program (Mandel et.al, 1999). The program was adapted in order to meet the needs of the participants residing at the retirement community while complying with the regulations of the facility.

Participants were to attend three educational sessions, each of which lasted approximately 90 minutes. Either the Activities Coordinator of the retirement community or the Faculty Advisor directly supervised each of the sessions. These sessions included brief lectures, small group activities, discussions, and factual handouts relevant to the lecture. The sessions were customized in order to meet the needs of the participants, based on the needs assessment conducted with the Activities Coordinator and Health Coordinator. At the end of each session, the participants were encouraged to think critically about the information they received, and to incorporate some of the suggestions discussed throughout the lecture into their daily habits and routines, when feasible. The aim of engaging the participants to think critically about the information that was presented was to bring a greater awareness of fall prevention strategies they could use in their everyday lives.

The following topics were included in the educational sessions:

- Importance of fall prevention and risk factors related to falling (Appendix A)
- Role of physical activity and exercise in reducing the risk of falling (Appendix B)
- Home and community modifications that can reduce the risk of falling (Appendix C)

Data Collection of Program Outcomes

Assessment of the program outcomes occurred directly during the first and third sessions, in the form of pre- and post- test evaluation measures (see Appendix D and Appendix E, respectively). Attendance records also served as a form of data. Although there was no data collected to directly assess whether the number of falls were reduced after the program was implemented due to the nature of the project, subjective feedback from the participants provided substantial data that would later be used to determine the program's effectiveness. Also, it is

important to note that data was collected in the form of field notes after every session in order to get a better idea of the positive and negative aspects from each educational session that was presented from my perspective. Information collected from the field notes related to my observations regarding what elements of the session were successful and which were not, my perception of the participant's engagement and receptiveness, and any other factors that may have impacted the session.

Data Analysis of Program Outcomes

Upon completion of the fall prevention program, I analyzed the data that I collected. I drew conclusions regarding the participant's knowledge gained and whether or not there was a change in overall understanding and or habits and routines following the third session.

Attendance records. I examined and analyzed records for participants' attendance at the educational sessions to identify potential trends between the number of educational sessions and answers on the pre-test and post-test

Session Fieldnotes. A basic content analysis and identification of broad themes was completed with the information obtained in the session field notes relevant to what happened, individual's comments and feedback, and my own perception of how the session went.

Pre-test/ Post-test A basic content analysis was completed for the answers on both the pre-test and the post-test measures, independently.

The intent of the analysis also served to inform future programming not only for future students at the retirement community but also for myself in other service-delivery applications.

Results

This section discusses the results of the three-week fall prevention program completed at the continuing care retirement community. First, I will discuss the attendance records and their

overall impact on the program. I will then complete an overview of each session, explaining what was intended to happen and what actually happened. Finally, I will discuss the results of the pre-test and post-test, which were administered before the first session and after the last session, respectively.

Attendance

This section of the results discusses the attendance records as they relate to each of the three sessions. The attendance results include the overall attendance at each session as well as the number of individuals who attended one session, two sessions, and three sessions.

There were a total of 23 different individuals who were enrolled in the fall prevention program overall.

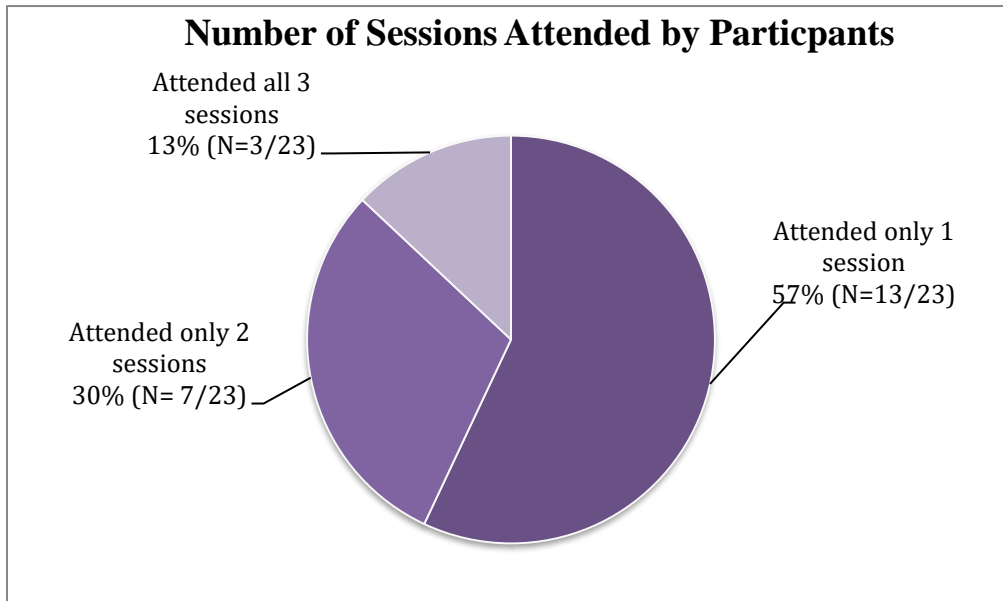
Table 1

Overall Attendance for Each Session

<u>Session Number</u>	<u>Number of Attendees</u>
Session 1	19
Session 2	5
Session 3	12

The drop in attendance during the night of the second session was due to a variety of factors such as a change in room, a lack in advertising, and also a sporting event that was on the television at the same time the session was occurring. The majority of individuals only attended one session, however for individuals who attended two sessions most attended the first and third session (see Figure 1). Again, there was a significant drop in attendance during the second session.

Figure 1. Number of Sessions Attended by Participants



The number of females versus males who attended each session was relatively equal. In the first session, 10 females attended and nine males attended. In the second session, two females attended and three males attended. In the third session there was a greater difference, with nine females attending and only three males.

Session Overviews:

This section of the results covers a general overview of each of the three sessions. Included in the description is information relevant to the intended content and topic of the program, and the teaching approaches used within the session, as well as what actually took place at each session.

Session 1:

The purpose of the first session was to give individuals who signed up for the fall prevention lecture series an idea regarding the fall problem and its overall prevalence in the community-dwelling elder population. An overview of risk factors was presented. Interactive features were built into this session in order to further the individual's critical thinking skills and

to apply concepts discussed to realistic case scenarios. Prior to beginning the education portion of the session, participants were given a pre-test, which they were told to complete independently. However, many of the couples in the groups worked with one another when filling out the pre-test. Following the pre-test was the educational portion of the session. When participants offered examples of risk factors as they relate to fall prevention, a majority of the ideas were based on home modifications such as being aware of floor surfaces and making sure there is not clutter in any of the walking paths. Many individuals mentioned the current accommodations offered at the continuing care retirement community such as grab bars in the bathroom. In one portion of the session, individuals were encouraged to share in the large group about any previous falls they had or a loved one had, and their experience with what happened after the fall. This question opened up a great deal of discussion and many individuals shared personal stories. The final activity of the first session included a variety of case scenarios in which individuals were encouraged to identify risk factors and recommend changes. Many individuals remarked that they had fun working through these scenarios and critically analyzing situations. The first session was located in the chapel room of the main building. The layout was not conducive to breaking into small groups, therefore posing somewhat of a challenge throughout the session when individuals were encouraged to pair-share in small groups.

Session 2:

The purpose of the second session was to inform participants of the continuing care retirement community about the benefits of exercise and physical activity, ways to be active without going to specific exercise classes, and local programs to get involved with at the continuing care retirement community. Due to technical difficulties, the presentation originally planned was adapted in order to be discussion-based primarily instead of lecture-based. When

the session was intended to begin, there were only five residents present. The individuals who attended were given the option to change the session to a different day to see if more individuals would attend, however they chose to proceed. Given that there were significantly less individuals at the session, the discussion style was more appropriate and allowed everyone to engage more in conversation. One couple from the previous session answered a majority of the questions and discussion points; however, other participants were continually encouraged to participate and contribute to the discussion. Most of the information delivered was not new per se, and all of the individuals in attendance (N=5) already engaged in exercise classes either at the continuing care retirement community or outside of the retirement community. With that being said, they were given a blank schedule and encouraged to write out all of their commitments such as doctor's appointments, work, and other activities. Filling in the blank schedule/calendar during the session was meant to encourage individuals' to make time for physical activity and prioritize it just as they would an appointment or meeting. Many of the participants expressed interest in this activity. At the conclusion of the session, individuals were shown a chair exercise with minimal risk. The ankle pump exercise was one of the individuals' favorite parts of the session, and some individuals even asked for more chair exercises.

Session 3:

The purpose of the third and final session was to give participants information regarding home modifications and the environment, and its impact on fall prevention. The attendance for the third session was greater than the second session, however less than the first. The projector was initially not working, therefore, the program started behind schedule. However, eventually the technical difficulties were resolved. The individuals who attended this particular session seemed to already have a great amount of knowledge about home modifications and what is

offered in their current retirement community. Some of the other topics discussed throughout the lecture and discussion elicited more of a conversation amongst residents. For example, the topic of medical alert systems as a means to ensure help when a fall does occur was a very controversial topic. Some of the participants expressed concern with wearing a medical alert system due to the stigma that is associated with them. Similar to the previous two sessions, one couple did a large amount of the talking; therefore, it was difficult to gauge the entire groups' knowledge because most of the discussion took place with the two individuals. During the session, residents viewed a video that showed various areas of the home that could possibly represent fall hazards. They were asked to spot the hazardous areas and to explain why they were dangerous. Many of the residents participated and engaged in discussion when viewing this video. Following the conclusion of the third session, many of the individuals shared that they enjoyed learning about fall prevention and gaining more insight into how serious of an issue it is and how they can be proactive in their everyday lives in order to prevent falls.

Program Outcomes:

The purpose of this section is to discuss the responses to the pre-test and post-test as completed by individuals who attended the program. The pre-test and post-test included different questions and were developed specifically for the program at the continuing care retirement community by the student. Comparisons could not be made from pre-test to post-test due to the fact that the test measures were different. For several different questions on the pre-test, some individuals responded with the same answer, therefore there is repetition in some of the data collected.

Pre-test:

The pre-test aimed to capture a baseline of the participant's knowledge of fall prevention prior to the sessions. The pre-test also attempted to assess any concerns individuals had about fall prevention, and anything they were currently doing in order to prevent falls. The first question asked was "What do you know about fall prevention?" 18 out of 19 individuals answered this question. Themes that arose from the question included the notion that falls are a very serious matter, and that they can be deadly and harmful in breaking bones and causing other injuries. One participant responded, "It can be your last fall if you aren't aware". Other frequent answers from participants included knowledge from personal experience or from a family member. One participant responded, "Personal experience: in 2014 with 2 falls, the second severe and [now] I am constantly aware of danger." From the question, "What do you know about fall prevention?" several individuals mentioned environmental hazards and their impact in increasing the likelihood of falling. Some of the specific responses relating to the environment included, "Stay[ing] off the ice", "Be aware of your surroundings", and "Clear loose carpets."

The second question asked was, "What are you currently doing in order to prevent falls?" All individuals who answered the pre-test responded to this particular question. Many individuals mentioned the use of an assistive device, being cautious and aware of surroundings in one's environment, and maintaining balance whether it is through physical therapy or other exercise classes. Specifically, of the 19 individuals who responded to this question, 11 individuals responded by either mentioning the use of their assistive device (N=5), working on balance through physical therapy and exercise, or both (N=3). Other examples included: "wearing comfortable shoes, not using stairs if possible or ladders" and "stepping off a step sideways and keeping things picked up in rooms". Finally, another individual responded, "being aware of surroundings".

The third question asked was, “What are your concerns regarding fall prevention and preventing falls?” This question was the least frequently answered, with only 14 out of 19 participants responding. There were no common themes found in the responses to this question. Some of the different responses were, “my Parkinsons”, “falling and not being able to get back up or get to the phone”, “my balance at age 80”, “concerns of floor surfaces, walking on carpet, etc.”. Although many individuals expressed in the previous question that they were currently doing things such as exercise and physical therapy to address balance, this was still a concern mentioned by several of the individuals who responded to the question. Several other individuals voiced concerns relating to their lack of knowledge when it comes to fall prevention. One individual expressed a concern of the consequences of a fall after it has occurred, such as breaking bones. There was some repetition in responses from individuals throughout the three distinct pre-test questions.

Post-test:

The post-test aimed to gather information regarding participant’s knowledge of fall prevention following their attendance at the three sessions, any lifestyle changes made by participants in order to prevent falls, and lastly how confident individuals were on a Likert scale ranging from 1 to 10 that they could prevent falls in their everyday lives. All twelve participants who attended the final session except for one answered the post-test questions. Again, the post-test measure was not the same as the pre-test measure due to the fact that the post-test was able to detect more behavioral and lifestyle changes made in relation to fall prevention compared to the pre-test. Each post-test question had responses that could be selected based on content from each of the three sessions. There were only three individuals who took the post-test that attended all three of the sessions.

The first question asked was, “What are the top three things you know now or know better after participating in these courses?” All 11 participants who answered the post-test answered the first question. Individuals were then to select three of the nine pre-determined responses that they felt best represented their knowledge. There were approximately three responses that corresponded with each of the three sessions, therefore creating a total of nine different responses. The possible answers one could select that pertained to information from the first session included:

- General risk factors of falling
- Developing healthy habits and routines
- Things I can do to prevent my risk of falling

The possible answers one could select that pertained to information from the second session included:

- How exercise can prevent falls
- Ways I can incorporate exercise into my schedule
- Resources for exercise at the CCRC and in my area

The possible answers one could select that pertained to information from the third and final session included:

- The importance of assessing my home environment on a regular basis
- What to do in case of a fall
- Factors in home that increase the risk of falling

Although individuals were told to only select three responses, several individuals selected more than three responses; therefore all of their responses were used in the data analysis.

The three most frequently answered responses to the first question were:

- Things I can do to prevent my risk of falling (N=7)
- The importance of assessing my home environment on a regular basis (N=5)
- Developing healthy habits and routines (N=5)

The least frequently answered responses to the first question were:

- Resources at Homestead Village and in my area (N=1)
- Factors in home that can increase my risk of falling (N=1)

One of the least frequently answered responses, “Resources at Homestead Village and in my area”, was covered in the second session, which had the least number of participants attending.

The second question asked was, “Have you made any changes within the past two weeks in order to prevent falls?” Individuals were then to select two of six responses in order to answer the question.

The possible answers individuals could select that primarily pertained to the first session included:

- Made or had a doctors’ appointment to review my medications or to assess my vision
- Became more aware of fall hazards in my community

The possible answers individuals could select that primarily pertained to the second session included:

- Attended exercise classes at the CCRC or outside of the CCRC
- Incorporated physical activity into everyday tasks

The possible answers individuals could select that primarily pertained to the third session included:

- Rearranged furniture/space
- Installed a new adaptation in my home

Again, some individuals selected more than two responses for the question. Out of 11 individuals who filled out the post-test, only six individuals responded to this question. There was a relatively even distribution of responses, that is there was not one response that was selected a significant number of times more so than any of the other responses.

- Rearranged furniture/space (N=3)
- Became more aware of fall hazards in my community (N=3)
- Attended exercise classes at HV or outside of HV (N=2)
- Incorporated physical activity into everyday tasks (N=2)
- Made or had a doctors' appointment to review my medications or to assess my vision (N=1)
- Installed a new adaptation in my home (N=1)

The third and final question asked on the post-test was, "How confident are you that you can prevent falls in your everyday lives (1=low, 10=high). Out of 11 individuals who filled out the post-test, only five individuals completed this question. Responses ranged from 4 to 10, with a median score of 7.4.

Discussion

The purpose of the fall prevention program implemented at a local CCRC was to inform some individuals in the community regarding fall prevention and ways to reduce falls through a three-week educational program. This section discusses the overarching program outcomes, the specific pre-test and post-test outcomes, the personal learning insights gained through the project, as well as limitations of the program, and recommendations for future program development at the CCRC.

Overarching Program Outcomes

The educational structure of my program along with the interactive components within each session engaged the participants as demonstrated through their willingness to openly share information and apply fall prevention knowledge to their everyday lives. A number of different factors were addressed in the fall prevention program, such as general risk factors and the prevalence of falls in community dwelling elders, the role of exercise and physical activity, and home modifications. Again, participants were more responsive when completing case studies with a partner that required problem solving and also when sharing knowledge in small group discussions, as opposed to sitting through lecture-based portions of the session.

Pre-test and Post-test Outcomes

The pre-test and post-test outcome measures were independent measures developed for the purposes of this specific program. The post-test was able to give a general idea of the participants' knowledge and current preventative practices surrounding fall prevention, however was unable to evaluate a change in knowledge and behavior as a direct result of the program. Individuals who attended the third session and responded to the post-test reported gains in knowledge as well as changes in lifestyle routines or habits; therefore the program did provide positive outcomes according to their post-test responses. Individuals' confidence in preventing falls as measured on the post-test was in the upper-quartile range, which may or may not be related in some way to their level of fear of falling. According to Scheffer, Schuurmans, van Dijk, van der Hoof, and de Rooij (2007), having knowledge of risk factors may be useful in developing strategies to decrease fear of falling and improve quality of life. Individuals in this program were equipped with knowledge of risk factors, which therefore may have contributed to their confidence level on the post-test. It is possible that as a result of attending the sessions,

participants either remained relatively confident in fall prevention or their confidence of preventing falls increased.

Individuals who attended each session expressed an interest regarding fall prevention during the program, however no conclusive results from their post-test answers could be made due to the varying attendance combined with the program evaluation and outcome measure. There were only three individuals who attended all three sessions, and a significantly greater number of individuals who attended only one session. One study carried out by Yardley et. al (2006) identified factors that facilitated or discouraged attendance in community-based falls prevention program. In this particular study, it was noted that compliance for fall-prevention programs increased when individuals were personally invited by a health practitioner to attend the program and individuals received social approval by friends or family. Again, although individuals in my program were initially invited by an activities coordinator and health coordinator of the CCRC, there were no direct follow up phone calls or reminder emails, which may have contributed to the decrease in attendance the following evenings.

Personal Learning Insights

Through developing, implementing, and evaluating a community-based falls prevention program under supervision, I was able to see the difficulties that come about with running groups in retirement communities. For example, it is important to not only have the program well advertised, but also to continually follow up with participants in order to remind them of the times and locations of the sessions. Due to a change in room, a lack of advertising, and a popular sporting event being televised at the time of the session, there was a significant drop in attendance in the second evening, which may have affected the post-test responses of participants who did not attend this session. Along with this, I learned the importance of preparing for

sessions in case a problem arises that was not accounted for. For example, in the second evening there was a problem that occurred with the technology in the room and I was unable to display my PowerPoint on the projector. The session for that evening was modified at the last minute in order to accommodate the situation. Although this was accomplished, problems may have been minimized if there was a back-up plan in place or other staff who would be able to respond to such problems.

Limitations

A limitation of this program development project was that the pre-test and post-test outcome assessment was developed for the purposes of the project, and had not been previously validated or tested. Another limitation, as mentioned previously was the ability to form conclusions about the overall success of the program due to the inconsistent attendance on the part of the participants.

Recommendations

All individuals of the CCRC would benefit from the implementation of a long-term falls prevention program with a more comprehensive program development initiative and needs assessment. Although it was sufficient for the scope of this project to meet with the Activities Coordinator and Health Coordinator of the retirement community, it would be helpful to directly speak with and interview eligible residents to gain a better understanding of their needs for a larger falls prevention program. It would be valuable to implement a program for a longer duration in order to address not only the educational components relevant to fall prevention, but also to incorporate exercise classes or even home modifications into the program itself. In previous years, students implemented the *Safe Steps* program, which included a variety of

elements. Through this comprehensive program, participants' balance and mobility, as well as scores of fear of falling improved (Leimbach, Martin, Richert, Slifko, & Weaver, 2013).

For future programming, a team effort would be advantageous in ensuring that individuals attend all sessions once signed up for the program, as this was a large problem in the current program. It would also be important to follow up with staff in order to ensure that media technology is working properly, and if possible, to ensure that the location of the sessions is consistent throughout the duration of the program. As mentioned previously, a variety of teaching approaches should be utilized when developing and carrying out a fall prevention program at a CCRC. Although my program was able to inform participants through an education-based PowerPoint, individuals were more engaged when they were able to either communicate with one another or directly participate in an activity. At the end of the second session, participants were shown and able to actively engage in a low-risk exercise that involved raising their toes to the ceiling. Activities such as this should be incorporated into future programs in order to not only engage participants at an intellectual level, but also to engage participants in hands-on activities that are more directly related to their personal everyday lives.

Conclusion

The aim of this pilot study was to develop a program for well-elderly residents of a local CCRC related to fall prevention, and evaluate the program's outcomes based on the participants' subjective evaluations. The program itself contained a variety of elements and was delivered by means of three educational sessions over the course of three weeks. The educational sessions contained information relevant to risk factors and fall prevalence, the role of exercise and physical activity in fall prevention, and home modifications. According to the National Institute for Senior Health (2013), the most effective fall prevention programs include a variety of

components such as education, exercise, and modifications in the home. Participants in the program reported gains in knowledge related to fall prevention as a result of the program. It is my hope that individuals received information that was new to them and that they were able to implement this knowledge into their daily lives and take steps towards reducing the likelihood of falling despite the fact the program itself did not directly incorporate home modifications or exercise.

References

- Akyol, A. D. (2007). Falls in the elderly: What can be done?. *International Nursing Review*, 54(2), 191-196. doi:10.1111/j.1466-7657.2007.00505.x
- American Association of Retired Persons (AARP). (2010). *Home and community preferences of the 45+ population*. Retrieved on October 25, 2015 from <http://assets.aarp.org/rgcenter/general/home-community-services-10.pdf>
- American Occupational Therapy Association (AOTA). (2012). *Occupational therapy and the prevention of falls: Fact sheet*. Retrieved from <http://www.aota.org/Consumers/professionals/WhatisOT/PA/Facts/39478.aspx>
- Barnett, A., Smith, B., Lord, S., Williams, M., & Baumand, A. (2003). Community-based group exercise improves balance and reduces falls in at-risk older people: A randomized controlled trial. *Age and Ageing*, 32(4), 407–14.
- Campbell, A. J., Robertson, M. C., La Grow, S. J., Kerse, N. M., Sanderson, G. F., Jacobs, R. J...Hale, L. A. (2005). Randomised controlled trial of prevention of falls in people aged ≥ 75 with severe visual impairment: The VIP trial. *British Medical Journal*, 331(7520), 817–20.
- Centers for Disease Control and Prevention (CDC). (2012). *Falls among older adults: An overview*. Retrieved from <http://www.cdc.gov/HomeandRecreationalSafety/Falls/adultfalls.html>
- Espiritu, E. W. (2013). *Standing tall: A self-management approach to fall prevention intervention*. Retrieved from <http://www.aota.org/-/media/Corporate/Files/Practice/Aging/Resources/Focus-On-Falls-Prevention-Home-Mod-Booklet.pdf>

- Haines, T. P., Hill, A., Hill, K. D., Brauer, S. G., Hoffmann, T., Etherton-Bear, C., & McPhail, S. M. (2013). Cost effectiveness of patient education for the prevention of falls in hospital: Economic evaluation from a randomized controlled trial. *BMC Medicine*, *11*(1), 1-12. doi:10.1186/1741-7015-11-135
- Heighton, B., Marci, C., Reid, B., & Rivers, M. (2012). *Bathroom safety: Environmental modifications to enhance bathing and aging in place in the elderly*. Retrieved from <http://www.aota.org/-/media/Corporate/Files/Practice/Aging/Resources/Focus-On-Falls-Prevention-Home-Mod-Booklet.pdf>
- Homestead Village Mission Statement* (n.d.). Homestead Village. Retrieved on November 30, 2015 from <http://www.homesteadvillage.org/>
- Huang, A. R., Mallet, L., Rochefort, C. M., Eguale, T., Buckeridge, D. L., & Tamblyn, R. (2012). Medication-related falls in the elderly: Causative factors and preventive strategies. *Drugs & Aging*, *29*(5), 359-376. doi:10.2165/11599460-000000000-00000
- Leimbach, L. M., Dell, A., Ellis, J., & Strollo, S. (2014). *Outcomes of a falls prevention program for community-dwelling elders, Phase II*. Unpublished manuscript, Department of Occupational Therapy, Elizabethtown College, Elizabethtown, PA.
- Leimbach, L. M., Martin, A., Richert, G., Slifko, H., & Weaver, A. (2013). *Outcomes of a falls prevention program for community-dwelling elders, Phase I*. Unpublished manuscript, Department of Occupational Therapy, Elizabethtown College, Elizabethtown, PA.
- Li, F., Harmer, P., Fisher, K.J., McAuley, E., Chaumeton, N., Eckstrom, E., & Wilson, N.L. Tai chi and fall reductions in older adults: A randomized controlled trial. (2005) *Journal of Gerontology*, *60A*(2), 187-94.

- Logan, P. A., Coupland, C. A., Gladman, J. R., Sahota, O., Stoner-Hobbs, V., & Robertson, K. (2010). Community falls prevention for people who call an emergency ambulance after a fall: Randomised controlled trial. *British Medical Journal (Clinical Research Ed)*, *340*(2), 1-12.
- Mandel, D. R., Jackson, J. M., Zemke, R., Nelson, L., & Clark, F. A. (1999). *Lifestyle redesign: Implementing the Well Elderly Program*. Bethesda: MD American Occupational Therapy Association, Inc.
- Mayo Clinic. (2010). Fall prevention: Simple tips to prevent falls. Retrieved from <http://www.mayoclinic.org/healthy-lifestyle/healthy-aging/in-depth/fall-prevention/art-20047358>
- Merom, D., Cumming, R., Mathieu, E., Anstey, K. J., Rissel, C., Simpson, J. M., & Lord, S. R. (2013). Can social dancing prevent falls in older adults? A protocol of the dance, aging, cognition, economics (dance) fall prevention randomised controlled trial. *BMC Public Health*, *13*(477). doi:10.1186/1471-2458-13-477
- Painter-Patton, J.A., & Trujillo, L.G. (2015). Falls prevention and fear of falling: Evidence-based approaches and resources. *American Occupational Therapy Association*, *38*(2). Retrieved from <http://www.aota.org/About-Occupational-Therapy/Professionals/PA/Facts/Fall-Prevention.aspx#sthash.X7MZ5fjV.dpuf>
- Pighills, A. C., Torgerson, D. J., Sheldon, T. A., Drummond, A. E., & Bland, J. M. (2011). Environmental assessment and modification to prevent falls in older people. *Journal of the American Geriatrics Society*, *59*(1), 26–33.
- Scheffer, A. C., Schuurmans, M. J., van Dijk, N., van der Hooft, T., & de Rooij, S. E. (2007). Fear of falling: Measurement strategy, prevalence, risk factors, and consequences among older persons. *Age Ageing*, *37*(1), 19-24. doi: 10.1093/ageing/afm169

Six low-cost or no-cost home modifications to avoid falls. (2015). *Harvard Health Letter*, 40(9), 1-7.

Stevens, J. A., & Burns, E. R. (2015). *A CDC compendium of effective fall interventions: What works for community-dwelling older adults*. 3rd ed. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.

U.S. Department of Health and Human Services, ElderCare. (2014). *Home improvement assistance*. Retrieved from http://www.eldercare.gov/Eldercare.NET/Public/Resources/Factsheets/Home_Modifications.aspx

U.S. Department of Health and Human Services, National Institute of Health Senior Health. (2013). *Falls and older adults*. Retrieved from <http://nihseniorhealth.gov/falls/aboutfalls/01.html>

Yardley, L., Bishop, F. L., Beyer, N., Hauer, K., Kempen, G. M., Piot-Ziegler, C., & Holt, A. R. (2006). Older people's views of falls-prevention interventions in six european countries. *The Gerontologist*, 46(5), 650-660. doi:10.1093/geront/46.5.650

Appendix A. Fall Prevention and Risk Factor Outline from Educational Session #1**Fall Prevention, Prevalence, Risk Factors, and Implementing Changes**

Opening question: Why are falls important?

- Falls are devastating
- Falls are deadly
- Falls are costly
- Falls are preventable

Getting the facts as they relate to fall prevalence and prevention

Question and Discussion: What are the risk factors?

- Prior falls, Changes in vision, Poor nutrition, Lack of exercise, Improper footwear, Poor body mechanics, Home layout/organization, Medications, Existing health conditions

Discussion: Previous falls and fear of falling

Addressing risk factors in relation to daily habits and routines

1. Be aware of safety hazards
2. Locating resources to make changes happen
3. Be safe by making changes
4. Keep at it!

Activity: Participants were asked what they would change in a given situation in order to reduce the risk of falls, and recommendations for the client

Example of Case Scenario discussed in session

Case Scenario 1: Carl

- Carl- 78 year old man living in a single story home
- Carl has been experiencing chronic pain due to his arthritis, but continues to be independent in home management
- New medication that causes drowsiness
- Carl begins his housework later in the evening after other daily activities
- Carl refuses to go to the eye doctor because he thinks his prescription hasn't changed in 5 years

Appendix B. Physical Activity and Exercise Overview from Educational Session #2**Exercise and Physical Activity in Preventing Falls**

Activity: List examples of current exercise activities offered at Homestead Village

Small group discussion: How does exercise relate to fall prevention?

Benefits of exercise in relation to fall prevention

- Keeps muscles and bones strong
- Improves balance, especially when walking
- Keeps joints, tendons, and ligaments flexible

General facts: How does exercise and physical activity fit into the big scheme of large fall prevention programs?

Questions and Discussion: What should I incorporate in my exercise routine?

- http://nihseniorhealth.gov/falls/personalchanges/video/fall1_na.html?intro=yes
- <https://www.youtube.com/watch?v=fd9Lb7l6YIU>

Handout: Outline daily schedule on calendar give to you, and see where you can incorporate physical activity or exercise

Handout: List of different exercise classes and gyms within the Lancaster county area that provide Silver Sneakers program

Thinking Critically: Incorporating exercise and physical activity into daily routine

- It is important to make your exercise program tailored to YOU!
 - Find classes that you would enjoy going to!
 - Start out with something simple, such as walking
- Find an accountability partner
- Track your exercise
 - Record on your calendar when you exercise

Toe taps: One exercise you can complete while in your chair

Discussion: Other benefits exercise has on general health and wellbeing

Appendix C. Home Modifications Overview from Educational Session #3

Opening Activity: What is your home like? Describe/ sketch out layout organization

Discussion: What are home modifications and why are they important?

Discussion: Harvard Health Letter study on home modifications

What are the basic features that are addressed in homes in order to prevent falls?

- Hand rails and grab bars
- Nonslip surfaces/ floor rugs
- Cluttered areas
- Lighting throughout home

Activity: Recognizing problem areas in images of homes

Discussion: Footwear inside and outside of the home

Activity: Addressing problem areas in home described above

- List two problem areas
- Discuss ways to adapt the home/environment

Video: Can you spot the home hazards?

- <https://www.youtube.com/watch?v=xHeiJbAnS4I>

What to do in case of a fall? Discussion: Medical alert systems

Appendix D. Pre-Test

Pre-Test

Name:

What do you know about fall prevention?

What are you currently doing in order to prevent falls?

Do you have any concerns regarding fall prevention? If so, what are they?

Appendix E. Post- Test

Post-Test

Name:**What are the top three things you know now or know better after participating in these courses (Circle 3)?**

1. General risk factors of falling
2. Developing healthy habits and routines to prevent falls
3. Things I can do to prevent my risk of falling
4. How exercise can prevent falls
5. Ways I can incorporate exercise into my schedule
6. Resources for exercise at Homestead Village and in my area
7. The importance of assessing my home environment on a regular basis
8. What to do in case of a fall
9. Factors in home that can increase risk of falling

Appendix E. Post-test continued

Have you made any changes within the past two weeks in order to prevent falls? (Circle 2)

Rearranged furniture/space

Installed a new adaption in my home (grab bar, nonslip mat, light in closet, etc.)

Attended exercise classes at HV or outside of HV

Incorporated physical activity into everyday tasks

Made or had a doctors' appointment to review my medications or to assess my vision

Became more aware of fall hazards in my community

Other: _____

How confident are you that you can prevent falls in your everyday lives? (1= low, 10= high)

1 2 3 4 5 6 7 8 9 10