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PROVIDER EDUCATION ON PHYSICAL ACTIVITY FOR OLDER ADULTS

A Scholarly Project Submitted to the Graduate School
in Partial Fulfillment of the Requirements
for the Degree of
Doctor of Nursing Practice

Joseph Morris

Pittsburg State University

Pittsburg, Kansas

May 2022

PROVIDER EDUCATION ON PHYSICAL ACTIVITY FOR OLDER ADULTS

An Abstract of the Scholarly Project by
Joseph Morris

The purpose of this study was to educate nursing staff and providers on the importance of physical activity for older adults to prevent functional decline and maintain quality of life. The project was conducted online using Qualtrics survey software. Data was collected from October 25, 2021 to November 25, 2021. Nursing staff and healthcare providers (physicians, nurse practitioners and physician assistants) that are actively practicing medicine and have experience interacting with older adults participated by completing a two-part survey. The survey consisted of a pretest, an educational resource, and finished with a posttest identical to the pretest. The data collected from completed surveys were used to measure participant knowledge. The findings indicated that many health care providers and registered nurses already discuss physical activity with older adults. Having participants rate their knowledge level regarding physical activity for older adults varied. Comparison of both the pretest and posttest showed education did in fact increase participant knowledge related to the benefits of physical activity for older adults. Overall, the project findings support education as a means of increasing knowledge. Future replication of this study should be considered with a larger sample size to further support the effectiveness of healthcare provider and registered nurse education as a means of increasing knowledge regarding the importance of physical activity for older adults.

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CHAPTER I

Introduction

Clinical Problem

Physical activity for older adults is often not addressed in the clinical setting. The lack of physical activity is associated with an increase in health care costs, chronic disease, and premature death. Maintaining “functional capacity and resilience are keys to successful aging, health, quality of life and independence. These attributes are especially important because older adults often have multi-morbidities and experience acute medical conditions” (Miller, 2016, p.64). Long periods of inactivity can further compound these comorbidities, increasing the risk of functional decline. Research shows that “physical activity plays an important role in the primary and secondary prevention of major non-communicable diseases such as: cardiovascular diseases, type 2 diabetes mellitus, obesity, cancer, depression, chronic respiratory diseases, dementia, and osteoporosis to name a few” (Lehne, 2016, p.1). Physical activity education at each doctor’s visit is one approach to prevent functional decline and maintain quality of life.

According to the U.S. Department of Health and Human Services (HHS), “Physically active older adults are less likely to experience falls, and if they do fall, they are less likely to be seriously injured. Physical activity can also preserve physical function and mobility, which may help maintain independence longer and delay the onset

of major disability” (HHS, 2018, p. 67). The goal of this DNP scholarly project was to educate providers on the importance of physical activity for older adults.

Significance

Health care providers must prepare for an increasingly older population since “there are vast health, social, and economic implications of an absolute and relative increase in the population of older adults, especially if these individuals are in poor states of health with high levels of frailty and disability” (Morgan, 2019, p.2). Although we are not able to slow the aging process, we are able to promote physical activity. As advanced practice nurses, we can implement screening measures and provide education to prevent functional decline. This in return maintains a healthy older population, ensures a better quality of life, and minimizes the unnecessary use of healthcare resources. The significance of physical activity for older adults has been extensively researched. According to Physical Activity Guidelines for Americans, 2nd edition (2018) the benefits of physical activity for adults and older adults include:

- Lower risk of all-cause mortality
- Lower risk of cardiovascular disease mortality
- Lower risk of cardiovascular disease (including heart disease and stroke)
- Lower risk of hypertension
- Lower risk of type 2 diabetes
- Lower risk of adverse blood lipid profile
- Lower risk of cancer of the bladder, breast, colon, endometrium, esophagus, kidney, lung and stomach.
- Improved cognition

- Reduced risk of dementia (including Alzheimer’s disease)
- Improved quality of life
- Reduced anxiety
- Reduced risk of depression
- Improved sleep
- Slowed or reduced weight gain
- Weight loss, particularly when combined with reduced calorie intake
- Prevention of weight regain following initial weight loss
- Improved bone health
- Improved physical function
- Lower risk of falls and fall related injuries

The Physical Activity Guidelines for Americans, 2nd edition (2018) also indicates that inactive older adults are more susceptible to chronic conditions and an increased risk of falls all of which can be decreased through the benefits of physical activity.

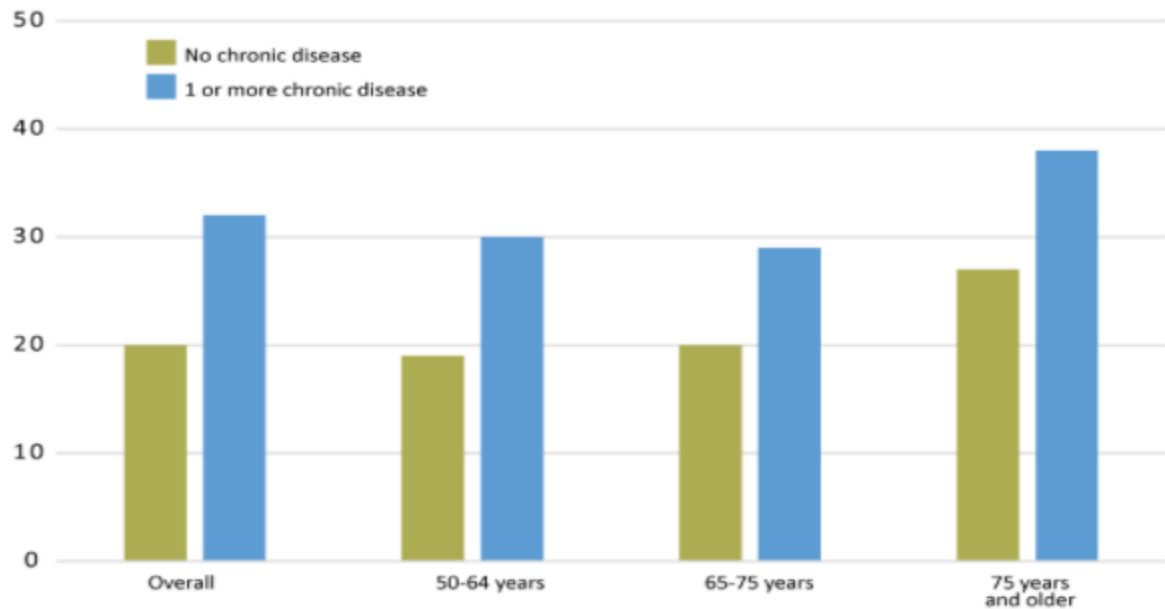
The significance between older adults and inactivity is the fact that it is closely associated with chronic conditions related to the aging process. As stated by the CDC (2019), 2/3 of adults 50+ have at least one chronic condition. The research goes to show that “inactivity is 30% higher in those with a chronic disease” (CDC, 2019). Sedentary behaviors and inactivity are closely associated with increased functional decline and decreased quality of life. The CDC graph below (Figure 1) shows how inactivity levels increase as individuals age. Individuals likely to suffer from secondary complications related to inactivity need their physical activity levels addressed. Well educated providers

able to effectively discuss physical activity for older adults would address the risk of functional decline and encourage healthy aging.

Figure 1.

CDC Physical Inactivity

Percentage of self-reported physical inactivity among adults 50 years and older by chronic disease status and age group, Behavioral Risk factor Surveillance System 2014



Falls are significant since they are the leading cause of injury for older adults.

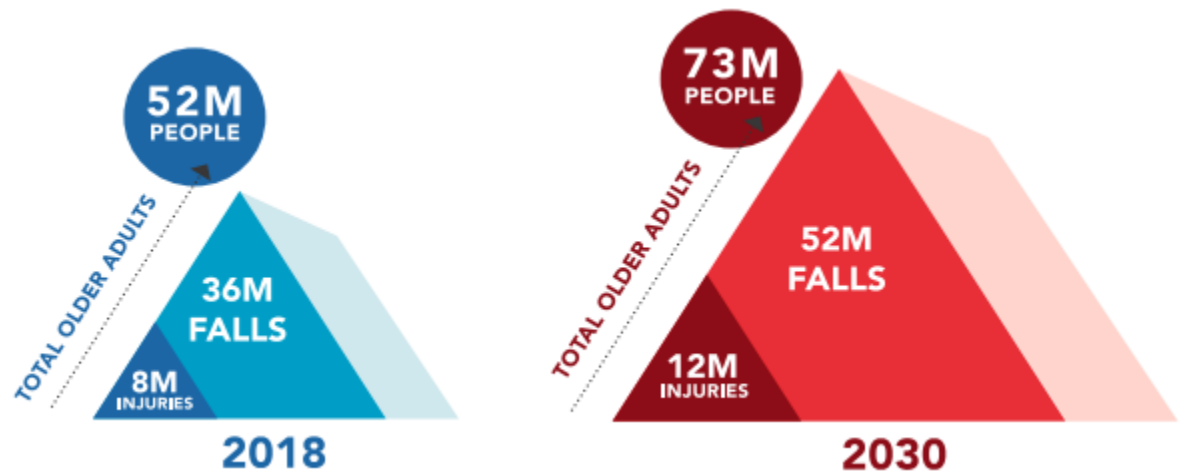
According to the CDC (Figure 2.), about 36 million older adults fell in the year 2018. As the total number of older adult increases in the future so will the risk of falls and injury.

For individuals aged 65 years and older, many times a fall resulting in injury will require medical attention. Some instances fall related injuries can even lead to death. Falls are not a normal part of aging and can be prevented. Staying physically active is one way to prevent falls in older adults. Research shows that “exercise reduced the risk of falls by 15% in community dwelling adults 60 years and older” (Poulton, 2020, p. 42). Regular

physical activity for older adults can help increase strength and mobility allowing the older adult population to continue living free of falls.

Figure 2.

Increasing Older Adults and Falls



Keeping older adults physically active is necessary to prevent chronic conditions and the risk of falls. Providers can meet this through effective education. Educating healthcare providers to address physical activity could encourage older adults to stay goal oriented and motivated. Physical activity is significant in maintaining the older adult's quality of life.

Purpose

The purpose of this scholarly project was to educate nursing staff and providers on the importance of older adults staying physically active to prevent functional decline and maintain quality of life. The use of physical activity education will increase provider knowledge and introduce them to the benefits of addressing, educating, and encouraging older adult to stay physically active. The study introduced providers to motivational interviewing as used in King's Theory of Goal Attainment. Identifying providers current

knowledge levels and whether they currently discuss physical activity with older adults provided insight on what was needed to establish goals with older adults to remain physically active.

Theoretical Framework

The framework used for this project was King's Theory of Goal Attainment. It is a "framework for social interaction and relationships and establish rules of behavior and courses of action" (King, 1981). This theory was formulated with the basic concept that:

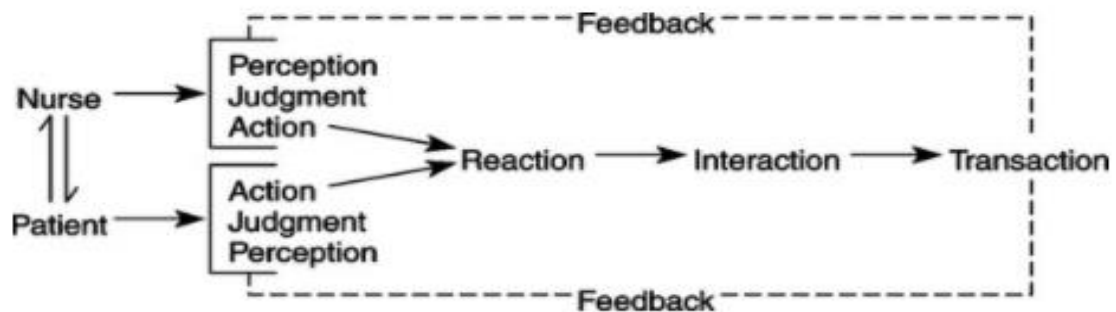
Mutual goal setting [between nurse and client] is based on a) nurses' assessment of a client's concerns problems and disturbances in health; b) nurses and client's perceptions of the interference and c) theirs sharing of information whereby each function to help the client attain the goals identified. In addition, nurses interact with family members when clients cannot verbally participate (Alligood, 2017, p. 216).

This framework establishes an interpersonal relationship that allows the patient to grow and develop during this process.

Kings Theory of Goal Attainment uses the "Model of Transaction" (Figure 3) to portray goal attainment. The concept focuses on nursing, self, and health. The basis of this model is that through constant feedback between nurse and patient a reaction will occur leading to an interaction that ends in a transaction. This model acts as an open system with no specific organization, allowing interaction to occur at any time since each phase of the activity potentially influences perception. This model breaks down the overall framework and shows how goals can be achieved.

Figure 3.

Model of Transaction



Project Questions

1. What is the healthcare providers knowledge level associated with physical activity for older adults?
2. Do healthcare providers discuss physical activity with older adults in their current practice?
3. Will an educational resource increase the knowledge level of healthcare providers and registered nurses regarding physical activity for older adults?

Definition of Key Terms/ Variables

The definitions of terms used in this project are provided below.

Older Adult- individuals 65 years or older and can be susceptible to higher risk of chronic disease. (Office of Disease Prevention and Health Promotion).

Functional Decline- The loss of independent function that often accompanies an acute illness or the cumulative effects of a chronic illness, a restriction in activities, or a change in diet, especially in older persons. (The Free Dictionary by Farlex, n.d.).

Physical activity- any bodily movement produced by skeletal muscles that requires energy expenditure. Includes exercise as well as other activities which involve bodily movement and are done as part of playing, working, active transportation, house chores and recreational activities (World Health Organization, n.d)

Sedentary- doing a lot of sitting, not physically active (Merriam-Webster Dictionary, n.d)

Education- the knowledge and development resulting from the process of being educated (Merriam-Webster Dictionary, n.d)

Quality of life- a broad multidimensional concept that usually includes subjective evaluations of both positive and negative aspects of life; health being one of its most important domains (CDC, 2018)

Motivation- the aggregate of all the individual motives, needs, and drives operative in a person at any given moment that influence the will and cause a given behavior (The Free Dictionary by Farlex, n.d.).

Goal- the end toward which effort is directed (Merriam-Webster Dictionary, n.d)

Function-Based Care- based on functional ability to perform activities of daily living, including bathing, dressing, and other independent living skills, such as shopping and housework. Many functional assessments tools are available to quantify functional ability. (The Free Dictionary by Farlex, n.d.).

Motivational Interviewing- A form of directive, client-centered psychotherapy in which patients are encouraged to explore the discrepancies between what they hope to attain in their lives and how they currently live and behave. (The Free Dictionary by Farlex, n.d.).

Frail- vulnerable older people at high risk of adverse outcomes including falls, worsening disability, institutionalization, and death (McMillan, 2012, p. 1060).

Logic Model

The logic model (Figure 4) for this project shows how the healthcare providers received education on the importance of keeping older adults physically active. The model shows the education process from beginning to end. It took into consideration short-term, medium-term, and long-term outcomes. This was carried out with the participation of healthcare providers including physicians, physician assistants, nurse practitioners, and registered nurses.

The short-term outcomes focus on determining providers knowledge and if their current practices involve addressing older adult physical activity. The medium-term outcomes are for healthcare providers to identify different components used to address physical activity. Education was presented to the provider on the recommendations and benefits of keeping older adults physically active as they age. During the education, providers were introduced to physical activity screening as an option to address older adult's functional status. Increased knowledge on the benefits of keeping older adult physically active could encourage providers to implement screening practices that would allow them to identify whether a patient is remaining physically active or has room for improvement. The long-term outcome goal is that with increased knowledge more health care providers will use the education received to educate older adults on the importance of keeping physically active. The education will raise awareness on the providers role in assessing, educating, and encouraging older adults to remain physically active. With increased knowledge providers will have a better understanding towards the importance

of addressing older adult physical activity through screening and education practices. These outcomes will improve our approach towards physical activity for older adults. The increased physical activity education received by providers will provide the knowledge needed to help prevent the functional decline of older adults. The overall goal and consideration for future studies is to increase the number of providers receiving physical activity education for older adults.

Figure 4.

Older Adults Physical Activity Logic Model

INPUTS	OUTPUTS		OUTCOMES		
	Activities	Participants	Short-term	Medium-term	Long-term
<ul style="list-style-type: none"> -Planning and Research -Clinical Practice Guideline -Pittsburg State University School of Nursing 	<ul style="list-style-type: none"> -Pre-Test/ Post-Test -Educational Resource 	<ul style="list-style-type: none"> -Health Care Providers -Nursing Staff -PSU DNP and MSN Students 	<ul style="list-style-type: none"> -Determine level of provider knowledge regarding physical activity for older adults -Evaluate if providers are currently addressing older adult's physical activity status -Increase provider knowledge of physical activity for older adults 	<ul style="list-style-type: none"> -Identify Older Adults -Identify Physical Activity -Identify Physical Activity Assessment -Identify Physical Activity Education 	<ul style="list-style-type: none"> -Increase the number of providers addressing older adult physical activity -Increase number of providers using physical activity screening - Increase the number of providers educating on the importance of physical activity

Summary

The number of older adults is increasing. This presents healthcare with a growing patient population susceptible to secondary complications related to inactivity. Healthcare provider education would equip them with the information needed to screen, set goals, and motivate older adults to stay physically active. The overall goal of this project focused on increasing healthcare providers knowledge of physical activity for older adult patients.

CHAPTER II

Literature Review

A review of the literature was done to obtain the most relevant information about the effects of physical activity and inactivity on older adults. Online databases were used to conduct the literature review. Sources included in the review were published within the last ten years in peer reviewed journals. The criteria ensured that the literature being used was current. The goal of this literature review was to find out what the research says about the activity levels of older adults. The databases used in this literature review were PubMed, CINAHL, ProQuest and Summon through Pittsburg State University. The keywords searched included: older adults, elderly, functional decline, sedentary, physical activity, physical rehabilitation, exercise, education, fall prevention, evidence-based practice, and clinical practice guidelines. Using the mentioned keywords, 39 articles were identified including peer reviewed journal articles, clinical practice guidelines, and additional articles from healthcare organizations, published in the last ten years. The following literature review is a summary of the information needed to educate providers on the importance of keeping older adults physically active.

Sedentary Population

The correlation between sedentary lifestyles and older adults can negatively impact their overall health and wellbeing. Rezende (2014) reported that “adults older than 60 years spend approximately 80% of their awake time in sedentary activities which represents 8 to 12 hours per day” (p. 2). This can have a negative impact on the overall wellbeing of older adults. Research shows that, sedentary behavior does not stimulate the metabolic system like physical activity would. Sedentary behavior can decrease sleep quality resulting in a decrease in the restorative properties provided by sleep. Diaz (2017) found that “total sedentary time and prolonged, uninterrupted sedentary bouts are jointly associated with increased mortality risk and that breaking up sedentary time every 30 min may be protective against the health risks incurred by prolonged sedentariness” (p.10). The increased health risks brought on by sedentary behaviors include diabetes, heart disease and some types of cancer. As the older population grows, healthcare is faced with providing for a population already affected by multiple comorbidities and even more susceptible to inactivity related frailty.

As a growing population, frail older individuals are “more likely to be hospitalized or to need critical care, use emergency medical services, and have a longer in-hospital length of stay” (Theou, 2018, p. 2). A frail patient population is at risk for functional decline. Frailty is reversible and therefore in older adults’ prevention of frailty should be an important focus of treatment. Prevention interventions can take place in the outpatient or inpatient setting through physical activity education and screening.

Education emphasizing the importance of physical activity for older adults is needed to maintain quality of life and prevent functional decline.

Defining Physical Activity

Often the term “physical activity” and “exercise” are used interchangeably but there is a difference. As stated by the World Health Organization (2018), exercise is “a subcategory of physical activity that is planned, structured, repetitive and aims to improve or maintain one or more components of physical fitness” (p,98), whereas physical activity “is any bodily movement produced by skeletal muscles that requires energy expenditure” (p. 100). It is necessary to understand that physical activity includes many different activities that still have added health benefits aside from structured exercise routines. Moderate intensity physical activities include:

- Housework (vacuuming, scrubbing the floor, washing windows, taking out trash)
- General labor (carrying less than 25lbs, packing boxes, climbing stairs)
- Walking (the dog, golfing, or hiking)
- Gardening (raking, digging, trimming, or planting)
- Mowing the lawn
- Dancing
- Water aerobics
- Carrying or playing with children

These types of moderate intensity physical activity are beneficial for older adults’ overall health and wellbeing. The wide selection of activities provides something for older adults with varying interests and capabilities. Having older adults engage in physical activity will help them maintain baseline functional status and allow them the ability to engage in

activities they enjoy. Older adults that find a form of physical activity that interests them are more likely to continue doing it.

The recommended 150 minutes of moderate-intensity aerobic activity a week may not be possible for some older adults. The Physical Activity Guidelines for Americans, 2nd edition (2018) states “as a rule of thumb, a person doing moderate-intensity aerobic activity can talk, but not sing during the activity” (p.71). Physical activity intensity and time should be individualized for the older adult based on what they can do safely. We must remember that there are still health benefits associated with even small amounts of physical activity which is still better than no physical activity at all. Older adults should remain as physically active as their current conditions allow.

Physical Activity Promotion

The benefits of physical activity for older adults as an effective intervention is often overlooked by healthcare providers. Physical activity can be addressed through proper screening and education. Healthcare providers along with nursing staff are first to interact with patients and can promote physical activity at each encounter.

The process of screening as described by the clinical practice guideline (CPG) “involves asking about previous falls; observing and/or asking about gait, balance, or mobility difficulties; and applying clinical judgment to determine a person’s risk for falls. The expert panel suggests that screening should be integrated into other care processes, such as admission assessments, whenever possible” (RNAO, 2017, p.25). The screening would allow healthcare providers to establish a baseline for the older adult’s functional status. Every healthcare facility varies and designating a single standardized screening tool to assess physical function can be difficult. An example of a physical activity

screening tool that can be used in the inpatient and outpatient setting is called “Physical Activity Vital Signs”.

Physical Activity Vital Signs (PAVS) also known as the Exercise Vital Sign (EVS), “serves as a prompt for health care providers to address physical activity during clinical encounters.” (Walter, 2020, p.6). The PAVS tool is a 2-question screening done to address an individual’s general physical condition (Figure 5). The first question in the tool asks how many days per week you engage in exercise? The second question in the tool asks how many minutes are spent doing this exercise? You then multiply the first question (days exercised) by the second question (minutes spent exercising) to get the minutes of exercise per week. The patients total can be compared to the “national guidelines recommend 150 minutes of exercise per week” (American College of Sports Medicine, 2019). Comparing the patient’s physical activity to the recommendation set by the national guideline would establish baseline physical activity. This tool can be used at any time during a patient’s clinical encounter but is often performed during vital signs. Screening with the PAVS tool takes less than one minute to administer and can be done by all members of the healthcare team. The American College of Sports Medicine (2019) recommends “incorporating the PAVS into your electronic health record and patient intake forms. Calculations may be programmed, and the sedentary patient flagged for referral or counseling” (p.1). Using this tool as a vital sign would encourage healthcare providers to acknowledge older adult’s physical activity levels and encourage them maintain optimal functional status.

Figure 5.

Physical Activity Vital Signs (PAVS) Tool

1. On average, how many days per week do you engage in moderate to strenuous exercise (like a brisk walk)?	_____ days
2. On average, how many minutes do you engage in exercise at this level?	_____ minutes
Total minutes per week of physical activity (multiply #1 by #2)	_____ minutes per week

American College of Sports Medicine (2019).

To further establish promotion of physical activity, “education strategies are necessary to effectively educate nurses and other healthcare providers” (RNAO, 2017, p.45). Educating healthcare providers on the importance of function-based care for older adults will further enforce the expert panel’s recommendation that “maintaining mobility (e.g., early activation) has numerous benefits, including reducing the risk for increased frailty, functional decline, and falls” (RNAO, 2017, p.37). Education will encourage healthcare providers to address the older adult’s functional status, individualize care and effectively promote physical activity. These steps will help maintain the patients baseline functional status and potentially prevent functional decline.

Healthcare providers ability to effectively address the older adult population is necessary for changes to be made. Being able to communicate in a way that older adults understand is crucial for effective education. According to the National Institute on Aging, best practices when communicating with older adults include:

- Making Older Patients Comfortable
- Trying Not to Rush

- Establish Rapport
- Avoid Interrupting
- Demonstrate Empathy
- Ensure Understanding
- Compensate for Hearing and Visual Deficits

Effective information exchange while communicating with older adults will help build a better relationship and ultimately lead to improved health outcomes. Through effective communication the healthcare team can promote physical activity and set goals to prevent functional decline.

Clinical Best Practice Guideline

This study was done to increase health care providers knowledge on physical activity for older adults. Educating health care providers on the importance of physical activity is necessary to help older adults avoid injury and functional decline. The use of current clinical best practice guidelines was used to direct the provider education on physical activity for older adults. Education for the providers was directed from the *Clinical Best Practice Guidelines: Preventing Falls and Reducing Injury from Falls Fourth Edition*. The guideline provided a framework used to create provider education on physical activity for older adults. The use of screening, safety, education, and exercise a subcategory of physical activity were gathered from this clinical practice guideline (CPG). This CPG is a reference for the survey and presentation used to educate healthcare providers.

A thorough search of multiple databases was used to identify the most appropriate guideline. The databases searched included the Registered Nurse Association of Ontario (RNAO) and National Guidelines Clearinghouse (NGC). The guideline *Clinical Best*

Practice Guidelines: Preventing Falls and Reducing Injury from Falls Fourth Edition was obtained from the RNAO database.

The Appraisal of Guidelines for Research and Evaluation (AGREE) II instrument was used for appraisal of the CPG. This is a reliable tool used internationally for the assessment of CPG's. Upon completion of the AGREE II instrument the researcher found that the CPG was made of strong quality evidence. The CPG identified five research questions that resulted in 18 recommendations. Education formed for provider use included ten of the recommendations. The five research questions addressed are:

1. What are the most effective ways to identify adults at risk for falls or for injury due to falls?
2. What interventions are effective in preventing falls and reducing the risk for falls or falls-related injury among at-risk adults?
3. What interventions or processes should occur immediately following a fall?
4. What content and educational strategies are necessary to effectively educate nurses and other health-care providers to prevent falls and injury from falls?
5. What organizational policies and system-level supports are required to help prevent falls and injuries from falls among at-risk adults?

(RNAO, 2017, p. 25)

Recommendations for Implementation

The formation of five research questions resulted in 18 practice recommendations in the *Clinical Best Practice Guidelines: Preventing Falls and Reducing Injury from Falls Fourth Edition*. The practice recommendations were geared towards helping nurses and providers address patient safety and functional status to prevent falls. Eight of the practice

recommendations are taken from the CPG and used in this project to educate providers and increase knowledge regarding physical activity for older adults. The topics focused on for this study are assessment, education, and exercise. The eight practice recommendations used were:

- Assessment:
 - Recommendation 1.1: Screen all adults to identify those at risk for falls. Conduct screening as part of admission processes, after any significant change in health status, or at least annually. Screening should include the following approaches:
 - identifying a history of previous falls;
 - identifying gait, balance, and/or mobility difficulties; and
 - using clinical judgment.
 - Recommendation 1.2a: For adults at risk for falls, conduct a comprehensive assessment to identify factors contributing to risk and determine appropriate interventions. Use an approach and/or validated tool appropriate to the person and the health-care setting.
 - Recommendation 1.2b: Refer adults with recurrent falls, multiple risk factors, or complex needs to the appropriate clinician(s) or to the interprofessional team for further assessment and to identify appropriate interventions.
- Education:

- Recommendation 4.2: Health-care organizations provide ongoing organization-wide education to all staff in conjunction with other activities to help prevent falls and reduce injuries among persons in their care.
- Recommendation 5.1: To ensure a safe environment:
 - implement universal falls precautions, and
 - identify and modify equipment and other factors in the physical/structural environment that contribute to risk for falls and fall injuries.
- Recommendation 2.2: Provide education to the person at risk for falls and fall injuries and their family (as appropriate) in conjunction with other falls prevention interventions. This includes providing information about risk for falls, falls prevention, and interventions. Ensure that the information is provided in a variety of formats and in the appropriate language.
- Exercise:
 - Recommendation 2.1: Engage adults at risk for falls and fall injuries using the following actions:
 - explore their knowledge and perceptions of risk, and their level of motivation to address risk;
 - communicate sensitively about risk and use positive messaging;
 - discuss options for interventions and support self-management;
 - develop an individualized plan of care in collaboration with the person;

- engage family (as appropriate) and promote social support for interventions; and
 - evaluate the plan of care together with the person (and family) and revise as needed.
- Recommend exercise interventions and physical training for adults at risk for falls to improve their strength and balance. Encourage an individualized, multicomponent program/ activity that corresponds to the person’s current abilities and functioning.

(RNAO, 2017, p. 25)

Treatment Algorithm

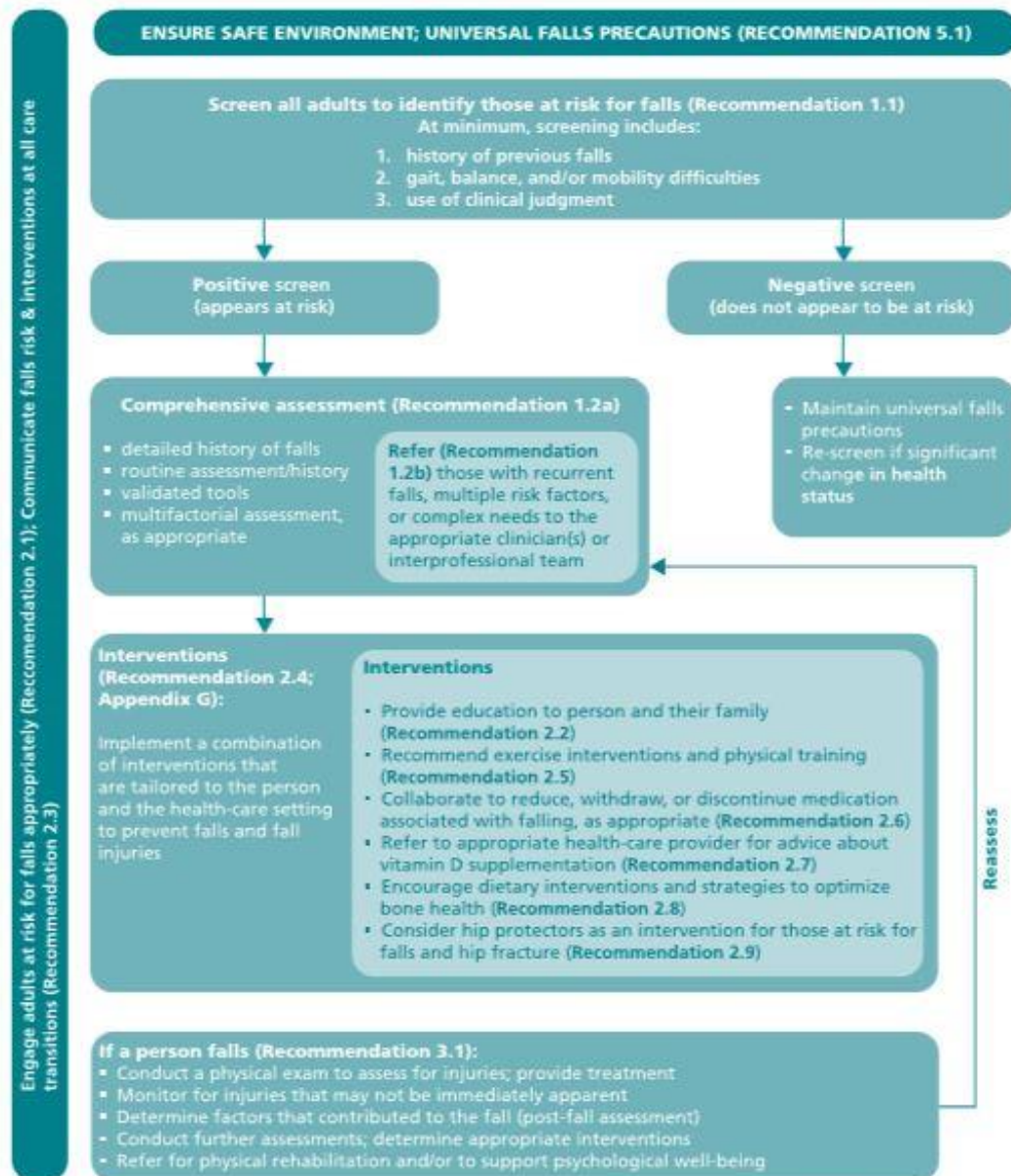
The *Clinical Best Practice Guidelines: Preventing Falls and Reducing Injury from Falls Fourth Edition* has provided a flow chart for fall prevention and injury reduction. This can also be adapted to be used as an algorithm to educate providers on safe physical activity practices for older adults. The flow chart is built off the research questions and recommendations listed in the CPG (Figure 6). The flow chart addresses screening, comprehensive assessment, interventions, and reassessment (RNAO, 2017, p. 24). The flow chart is broken down into five levels consisting of seven boxes. Each box on the flow chart has information and directions to guide you in addressing an individual’s functional status. This first level begins with a screening process to assess patients at risk for falls. The second level is based off the first level and whether they are at risk or not. The third level leads to a more comprehensive assessment to gain a detailed history on the patient’s functional status. The fourth level is an intervention level that includes education and exercise. The fifth and last level is reassessment of patient and referral for physical

rehabilitation if needed. This flowchart is to be used to guide the course of action needed to ensure patient safety with physical activity.

Since this study is educating providers on the older adult population most of the patients will screen at risk on the flowchart. The introduction of screening as an assessment tool to identify at risk older adults will provide the knowledge needed to establish the patients baseline functional status and individualize care. This education would present healthcare providers with the information needed to understand the importance of having older adults stay physically active.

Figure 6.

Treatment Algorithm: Falls Prevention and Injury Reduction



Source: Created by RNAO.

Barriers

According to the research, absence of provider influence, increased fall risk and lack of motivation of older adults remain as barriers to promoting physical activity to this patient population.

The lack of provider influence is one of many barriers that keep older adults from being physically active. Many providers do not address physical activity, so importance isn't associated with it from the patient's perspective. Research shows that "physicians are trusted and respected professionals, and a recommendation to be more active, accompanied by a prescription and referral has been demonstrated to improve physical activity and health" (Walter, 2020, p. 12). Having providers prescribe physical activity as a way of addressing functional status would potentially have a positive impact on older adult patients. To be successful, "proponents of the exercise prescription must secure the buy-in of the healthcare providers who will deliver the physical activity interventions and counseling sessions to their older adult patient population" (Rogers, 2012, p. 610). Provider education and the introduction of screening tools like Physical Activity Vital Signs (PAVS) could be used "to provide advice to start, increase, maintain, or modify current physical activity levels, provide a personalized physical activity prescription, and make referrals." (Walter, 2020, p. 6). The influence of providers addressing older adults' physical activity status can change patient perception related to physical activity. This in turn would help maintain the patient's quality of life.

Patient safety related to fall risk is a barrier that keeps older adult patients from being physically active. Some older patients spend a good majority of their time in a sedentary state to avoid falls. The approach healthcare facilities take to ensure patient

safety must “require a balance between reducing the risks and maintaining a person’s freedom, dignity, and quality of life” (RNAO, 2017, p.23). Proper education would provide the knowledge needed to encourage safe physical activity practices.

Another barrier is “no sense of urgency or motivation on the part of the person to change behaviors” (RNAO, 2017, p.49). Age related changes leading to the lack of motivation can keep older adult patients from being physically active. Research shows that older adults “become less interested in spending effort on decisions that they perceive as less relevant to achieving their goals, with the maintenance of positive emotions growing more relevant with age” (Strough, 2015, p.7). The expert panel recommends that “health-care providers use motivational interviewing strategies to complement the education focused on behavior change” (RNAO, 2017, p.32). Begin by slowly introducing physical activity behavior changes and gradually increase them so that they are more likely to become habit. Healthcare providers can learn to identify patient motivators to influence participation in physical activity interventions. Keying in on motivational factors will help providers effectively promote physical activity to older adult patients.

Summary

It is necessary for providers to receive education on the importance of physical activity for older adults. Keeping a frail, sedentary population moving will allow them to avoid functional decline and maintain their quality of life. Healthcare providers can use their voice to influence and motivate older patients to stay physically active.

CHAPTER III

Methods

Project Design

This chapter examines the research design and methods used as the framework of this study. This chapter identified the sample population, instrument, procedure, and evaluation measures of the data. The intention of this study was to increase healthcare providers knowledge towards the importance of keeping older adults physically active.

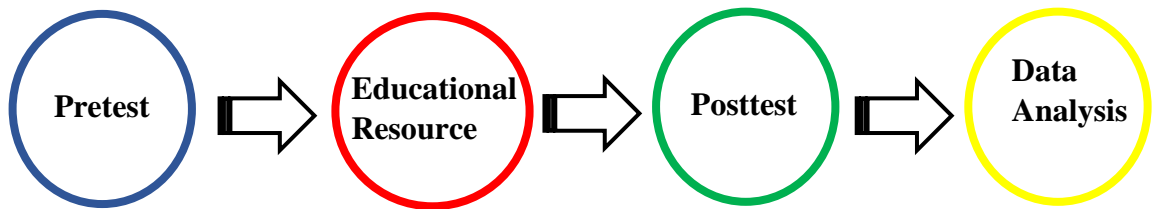
. The study was designed to assess provider knowledge of physical activity for older adults before and after an educational presentation. The educational presentation was intended to increase provider knowledge related to the benefits of physical activity for older adults. Following the educational presentation, the healthcare provider was evaluated to identify if an increase in knowledge was achieved. Through education and increased knowledge health care providers would have a better understanding of the motive behind the need to address older adult's physical activity status and encourage them to remain active. The study addressed the following questions:

1. Do healthcare providers discuss physical activity with older adults in their current practice?
2. What is the healthcare providers knowledge level associated with physical activity for older adults?

3. Will an educational resource increase the knowledge level of healthcare providers and registered nurses regarding physical activity for older adults?

Figure 7.

Project Design



Target Population

Sample Access

The sample population for this research study included physicians, nurse practitioners and registered nurses currently practicing with active state approved licenses. Students in the DNP and MSN program at Pittsburg State University were included. The sample population focused on healthcare providers practicing in the four-state area composed of Kansas, Missouri, Arkansas, and Oklahoma.

Recruitment

The target population was selected using convenience sampling. All eligible healthcare providers were asked to participate via email and social media. Participant requirements included active state license to practice, greater than 18 years old, and have worked or currently work in a setting that has exposure to older adult patients. Participants completed a pretest survey, then they were presented with an education resource, and followed up with a posttest survey. Participation in the study was voluntary. Submission of the pretest and posttest was done anonymously via Qualtrics survey platform.

Inclusion Criteria

Inclusion criteria required participants to have an active license, be currently practicing medicine or working as a registered nurse and have experience interacting with older adult patients in practice. To gain a true understanding of knowledge levels related to physical activity for older adults in this study both healthcare providers (physicians, nurse practitioners and physician assistants) and registered nurses were included. Students in Pittsburg State University's DNP and MSN program that meet the above criteria were included. Clinical nurse specialists were not included in the study. All surveys must be filled out to their entirety for submission to be included in the final analysis

Protection of Human Subjects

All guidelines for human subjects set by Pittsburg State University were followed when conducting this study. A meeting with Pittsburg State University's Institutional Review Board (IRB) was carried out to propose the study and seek approval for data collection. The sample population in this study are adult healthcare providers greater than 18 years of age. All surveys collected remained anonymous to maintain confidentiality and protect human subjects. The Qualtrics survey software used to conduct the survey maintained confidentiality with anonymous submissions. There were no specific individual identifiers collected in this study. No patients or minors participated in this survey. The information collected was not used to identify any participants. This study has no potential for harm and follows ethical conduct.

Instruments

The instruments included in this study design were instructions, pretest, educational resource, and a posttest. The use of a pretest and posttest format enabled quantitative data to be collected and analyzed. Participants were able to electronically access the survey when provided with the link. The survey addressed area of practice, any current use of physical activity screening, evaluation of addressing physical activity, whether it is already being measured in their current practice, and if the educational resource increased provider knowledge regarding physical activity for older adults. The educational resource addressed the importance of physical activity for older adults to prevent comorbidities and functional decline. The survey consisted of a rating scale, multiple-choice, and dichotomous (yes/no, true/false) questions for data collection.

Participants were provided with the link to take the pretest that included 9 questions in total. The first two questions were multiple choice demographic questions. The third was a yes/no question to identify if providers currently discuss physical activity. The fourth question was a rating scale for participants to rate their current knowledge of physical activity for older adults. Questions five and six were dichotomous true/false and yes/no questions. The last three questions were multiple choice. Once the pretest is completed, they were directed to review a short educational presentation over the benefits and recommendations of physical activity for older adults. When finished reviewing the educational resource participants were directed to a posttest of the same 9 questions that were presented in the pretest. When submitted, each completion notified the researcher so that the data can be collected. Refer to Appendix A for a copy of the survey used.

Operational variables were used in this study to evaluate the data. These variables allowed evaluation from a quantitative approach. The variables evaluated in this study are:

1. Education
2. Physical Activity
3. Older Adults
4. Knowledge
5. Healthcare Provider

Procedure

This section explains the procedure used to carry out the study. Each phase was broken down step by step. Everything from IRB approval to data collection is discussed here. The first step to collecting data was getting IRB approval before starting. This was required to review the validity of the study. An educational power point on the importance of physical activity for older adults was presented along with copies of the pretest and posttest. When approved, the study progressed to the next step which identified eligible participants.

The survey was released online, and the link was distributed to the target population via email and social media platforms. Each participant was provided directions and ensured confidentiality before participating. Participants were directed to complete the pretest, followed by the presentation of the educational resource, and then directed to the posttest. All surveys and data collection were done solely online. Surveys were completed in one sitting. The survey was not timed, and participants were allowed to take it in any environment that has a computer with internet access. This gave the

participant flexibility and incentive to complete the survey. Submission of the survey remained anonymous per Qualtrics survey software, and results were available to the researcher to further analyze. Data analysis was done on each survey taken within the study to evaluate the results. Excel or SPSS software was used to conduct the analysis.

This is an educational study geared towards expanding the providers knowledge related to this topic. Participants gained a better understanding of the risks related to prolonged sedentary lifestyles and the benefits of keeping older adults physically active. The Physical Activity Vital Signs (PAVS) tool was introduced as an example of a screening tool providers can use to assess physical activity levels. Participants needed to have internet access to take the survey. The survey took no longer than ten minutes to complete. Upon completion each participant had been provided education related to the importance of keeping older adults physically active.

Treatment of Data, Outcome and Evaluation Plan

The treatment of data for this study was done through voluntary participation. Participants granted consent by accessing and submitting the survey. The Qualtrics survey software maintained confidentiality by keeping all submitted surveys anonymous. The data collected from the submitted survey were transferred from the survey software to SPSS for analysis.

Evaluation Measures Linked to Objectives

Evaluation measures were linked to the objectives with the logic model listed in Chapter One. The study provided an educational PowerPoint presentation with a pretest and posttest to evaluate provider knowledge towards the importance of physical activity for older adults. The pretest measured the healthcare providers current knowledge of

physical activity for older adults. It also evaluated the providers current practices for addressing physical activity. After the educational presentation, the posttest was administered to evaluate if the healthcare provider had an increase in knowledge regarding the importance of physical activity for older adults. The results from the pretest and posttest were analyzed to measure the providers knowledge towards the importance of physical activity for older adults.

Outcome Data

The outcomes data was generated from the pretest and posttest measurement tool completed by each participant. The research questions defined for this study were used to evaluate the data collected. The following research questions were utilized:

1. Do healthcare providers discuss physical activity with older adults in their current practice?
2. What is healthcare providers knowledge level associated with physical activity for older adults?
3. Will an educational resource increase the knowledge level of healthcare providers and registered nurses regarding physical activity for older adults?

This study was designed to educate health care providers and registered nurses on the importance of promoting physical activity in older adults and the research questions helped calculate the outcomes.

Instrument Linked to Measure

The instrument linked to the measure and the objectives was conducted through the analysis of the pretest and posttest survey format. Using a questionnaire as a measurement tool allowed quantitative data collection to analyze the healthcare providers

knowledge regarding physical activity for older adults. The survey was designed to address the research questions listed. The survey incorporated practice guidelines from the *Clinical Best Practice Guidelines: Preventing Falls and Reducing Injury from Falls Fourth Edition*. The survey consisted of multiple-choice and dichotomous questions. The survey questions addressed current provider knowledge and determine if the use of an educational resource increased provider knowledge regarding the importance of physical activity for older adults.

Methods of Analysis

The evaluation plan for this study takes into consideration several factors. Data was collected for analysis once the posttest was done, and the survey was submitted. All quantitative data was obtained through multiple choice and dichotomous questions in the survey. SPSS and Excel were used to analyze the data from both the pretest and posttest measurement tools. Comparisons of the two tests was done to assess the effect of physical activity education and any change in participants knowledge. The methodology behind this project is to increase healthcare providers knowledge through education regarding the importance of physical activity for older adult patients.

Plan for Sustainability

The study showed that provider education on the importance of physical activity for older adults is effective and has the potential to influence further studies. Effectiveness was portrayed when the data supported an increase in provider knowledge from the educational presentation used in the study. The educational presentation can also be used by providers in patient education to discuss the evidence found and encourage older adults to stay physically active. The use of pre-existing evidence-based research

enabled the study to maintain sustainability in promoting physical activity for older adults. Both political and financial costs must also be considered to maintain sustainability. The only financial costs identified in this study would be for reproduction and distribution of the educational resource. There is no political interference since our nation is faced with a growing older population that is susceptible to functional decline and increased need for healthcare resources. The use of education instead of invasive medical treatment will further ensure sustainability for this study.

Summary

The need to address older adult's physical activity levels is often overlooked in the clinical setting. Educating healthcare providers on the importance of physical activity for older adults is an approach to provide them with the knowledge needed to encourage, motivate, and set goals to keep older adults active. With an increase in knowledge healthcare providers will have the skill set needed to effectively address physical activity. The intentions of this study are to increase healthcare providers knowledge through education regarding the importance of physical activity for older adult patients.

CHAPTER IV

Evaluation Results

A survey with a pre-test/post-test design and educational resource was used to evaluate provider knowledge of physical activity for older adults. The questions evaluated during the project were:

1. Do healthcare providers discuss physical activity with older adults in their current practice?
2. What is healthcare providers knowledge level associated with physical activity for older adults?
3. Will an educational resource increase the knowledge level of healthcare providers and registered nurses regarding physical activity for older adults?

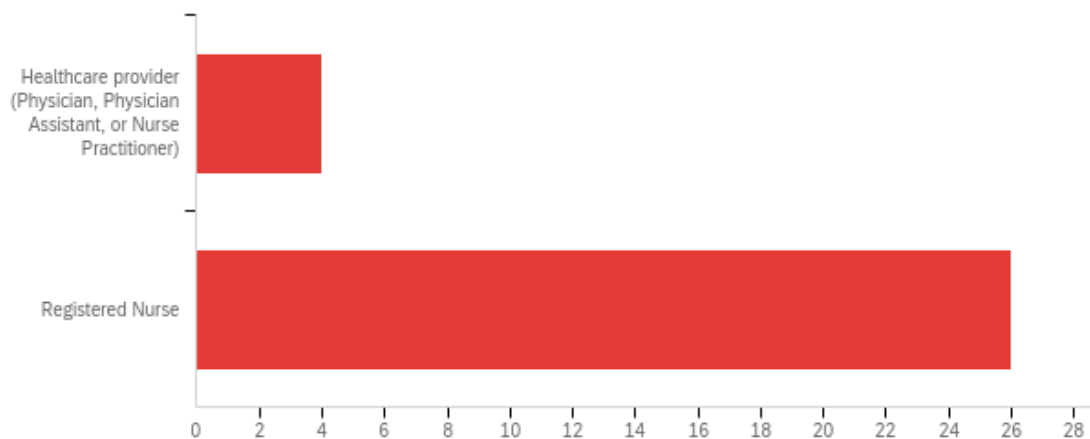
Sample

The demographic characteristics of the sample used included 30 participants. Participants that received the survey were from the four-state area composed of Kansas, Missouri, Arkansas, and Oklahoma. By consenting to the survey participants confirmed they are actively practicing with current licensing and have worked or currently work in a setting that has exposure to older adult patients. All participants were required to be English speaking and 18 years of age or older. The participants identified as either registered nurses or healthcare providers (physicians, nurse practitioners and physician

assistants). Registered nurses accounted for 86.67% of participants ($n=26$) and healthcare providers (physicians, nurse practitioners and physician assistants) accounted for 13.33% of participants ($n=4$). Data was collected from participants over the course of four weeks beginning on October 25, 2021 and concluded on November 25, 2021.

Figure 8.

Sample Demographics



Project Variables

The independent variable for this study was education, which consisted of physical activity recommendations for older adults. The survey began with a pre-test to establish a baseline of participants knowledge. Education was presented via video after the pretest. The survey was concluded with a posttest.

The dependent variable was provider knowledge of physical activity for older adults and recommendations for physical activity. The dependent variable was affected by the education presentation. Provider knowledge of older adult physical activity were evaluated directly after the presentation with the posttest. The variables and whether there were an increase in knowledge are discussed in the results analysis.

Analysis of Project Questions

The research questions were answered with the use of a pretest/posttest survey to evaluate provider knowledge of physical activity for older adults. This survey was done to evaluate how many providers discussed physical activity with older adults in their current practice. It allowed information to be collected on providers knowledge level associated with physical activity for older adults. Also, the data from the pretest was compared with data from the posttest to measure changes in participant knowledge regarding the benefits of physical activity for older adults. Each research question utilized one or more of the survey questions to identify participants knowledge levels.

Project Question One

Do healthcare providers discuss physical activity with older adults in their current practice?

On the survey this yes/no multiple-choice question was the same on both pretest and posttest. The results showed the percentage of providers that discuss physical activity with older adults in their current practice. On the pretest 70% ($n= 21$) of participants marked “Yes” they do discuss physical activity with older adults. For the participants that took the survey the pretest showed that 30% ($n=9$) chose “No” they do not discuss physical activity with older adults. Table 1 shows the results for percentage of providers that discuss physical activity with older adults in their current practice.

Table 1.

Healthcare providers that discuss physical activity with older adults

	Frequency	Percent
No	9 (<i>n</i> =9)	30.0%
Yes	21 (<i>n</i> =21)	70.0%
Total	30 (<i>n</i> =30)	100.0%

Project Question Two

What is healthcare providers knowledge level associated with physical activity for older adults?

. On the survey responses were the same on both pretest and posttest. The question was answered by having participants identify what their current knowledge level is regarding physical activity for older adults. The choices for knowledge level were novice, advanced beginner, competent, proficient, and expert. The data collection for this project question is evaluated below.

Participants in the survey identified their current knowledge level regarding physical activity for older adults. The data shows the percentage for each choice participants selected on pretest question four. On the survey, none (0%, *n*=0) of the participants chose their knowledge level as being “novice”. There were 13.3% (*n*=4) of participants that identified their knowledge level as “advanced beginner”. Most participants that took the survey (50%, *n*=15) identified as “competent”. There were 33.3% (*n*=10) of participants that identified themselves as having “proficient” knowledge level. Only one participant (3.3%, *n*=1) indicated that they had “expert” knowledge level

regarding physical activity for older adults. The results and data collected to answer this research question are shown below (Table 2).

Table 2.

Healthcare providers knowledge level

	Frequency	Percent
Novice	0 (<i>n=0</i>)	0%
Advanced Beginner	4 (<i>n=4</i>)	13.3%
Competent	15 (<i>n=15</i>)	50.0%
Proficient	10 (<i>n=10</i>)	33.3%
Expert	1 (<i>n=1</i>)	3.3%
Total	30 (<i>n=30</i>)	100.0%

Project Question Three

Will an educational resource increase the knowledge level of healthcare providers and registered nurses regarding physical activity for older adults?

This project question was answered on the survey by comparing pretest questions five, six, seven, eight, and nine with the same questions from the posttest. The data comparison is done to show the increase in provider knowledge after implementation of an educational resource over physical activity for older adults. The comparison of data is shown below.

This is a comparison of the data collected from the survey for question five on the pretest and posttest. For each of the following statements (Table 3), participants were asked to mark whether the statement was “True” or “False”. They also had the option to choose “Unsure” if they did not know. The correct answer to each statement was “True” as shown below in bold.

Table 3.

Physical Activity Statements

	Pretest			Posttest		
	True	False	Unsure	True	False	Unsure
Physical activity improves sleep and cognition.	93.3% (n=28)	6.7% (n=2)	0% (n=0)	100% (n=30)	0% (n=0)	0% (n=0)
Older Adults with sedentary lifestyles are more susceptible to chronic disease.	100% (n=30)	0% (n=0)	0% (n=0)	100% (n=30)	0% (n=0)	0% (n=0)
Physical activity can be gardening	80% (n=24)	16.7% (n=5)	3.3% (n=1)	96.7% (n=29)	3.3% (n=1)	0% (n=0)
Physical activity can be housework.	80% (n=24)	16.7% (n=5)	3.3% (n=1)	90% (n=27)	10% (n=3)	0% (n=0)
Physical activity can be walking, water aerobics and dancing.	96.7% (n=29)	3.3% (n=1)	0% (n=0)	100% (n=30)	0% (n=0)	0% (n=0)

When provided with statements on physical activity participants posttest scores improved after reviewing the educational resource. The only statement that 100% ($n=30$) of participants answered correctly was “Older Adults with sedentary lifestyles are more susceptible to chronic disease”. Participants that chose the correct answer to the statement “physical activity improves sleep and cognition” showed small improvement (pretest 93.3%, posttest 100%). A small increase of correct answer marked on the posttest were seen for the statement “physical activity can be walking, water aerobics and dancing” (pretest 96.7%, posttest 100%), More participants were able to identify gardening as a form of physical activity after the educational resource (pretest 80%, posttest 96.7%). The statement referring to housework as a form of physical activity also saw an increase on the posttest results (pretest 80%, posttest 90%). Another improvement is that there were no participants that marked “Unsure” as an answer on the posttest.

In Table 4 a paired sample *t* test was calculated to identify any statistical difference in provider knowledge after the educational resource was presented.

Table 4.

Survey Question Five Paired Sample Statistics

	Mean Difference	Std. Deviation	<i>t</i>	df	Sig. (2-tailed)
Physical activity improves sleep and cognition.	0.67	.254	1.439	30	.161
Older Adults with sedentary lifestyles are more susceptible to chronic disease.	X	X	X	30	X
Physical activity can be gardening	.200	.484	2.262	30	.031
Physical activity can be housework.	.133	.507	1.439	30	.161
Physical activity can be walking, water aerobics and dancing.	.033	.183	1.000	30	.326

The choice “physical activity can be gardening” ($t=2.626, p=.031$) is the only one that showed statistical difference. There was no statistical difference among the remaining choices. The choice “older adults with sedentary lifestyles are more susceptible to chronic disease” is labeled with “X” since it was zero and cannot be computed.

Question six from the survey provided participants with a list of conditions and they had to identify whether physical activity could lower the risk or not. Answer choices were “Yes” if physical activity lowered the risk, “No” if it did not lower the risk, or “Unsure” if participants did not know. Table 5 shows the comparison of data collected from question six on the pretest and posttest as shown below.

Table 5.

Physical Activity Lowers Risk

	Pretest			Posttest		
	Yes	No	Unsure	Yes	No	Unsure
All-cause mortality	80% (n=24)	13.3% (n=4)	6.7% (n=2)	100% (n=30)	0% (n=0)	0% (n=0)
Cardiovascular Disease	100% (n=30)	0% (n=0)	0% (n=0)	100% (n=30)	0% (n=0)	0% (n=0)
Hypertension	100% (n=30)	0% (n=0)	0% (n=0)	100% (n=30)	0% (n=0)	0% (n=0)
Stroke	90% (n=27)	6.7% (n=2)	3.3% (n=1)	93.3% (n=28)	3.3% (n=1)	3.3% (n=1)
Cancer	66.7% (n=20)	23.3% (n=7)	10% (n=3)	83.3% (n=25)	13.3% (n=4)	3.3% (n=1)
Type 2 Diabetes	100% (n=30)	0% (n=0)	0% (n=0)	100% (n=30)	0% (n=0)	0% (n=0)
Dementia	60% (n=18)	23.3% (n=7)	16.7% (n=5)	93.3% (n=28)	6.7% (n=2)	0% (n=0)
Alzheimer's	50% (n=15)	23.3% (n=7)	26.7% (n=8)	90% (n=27)	10% (n=3)	0% (n=0)
Anxiety	100% (n=30)	0% (n=0)	0% (n=0)	100% (n=30)	0% (n=0)	0% (n=0)
Depression	100% (n=30)	0% (n=0)	0% (n=0)	100% (n=30)	3.3% (n=0)	0% (n=0)
Weight Gain	100% (n=30)	0% (n=0)	0% (n=0)	100% (n=30)	0% (n=0)	0% (n=0)
Falls	96.7% (n=29)	0% (n=0)	3.3% (n=1)	96.7% (n=29)	3.3% (n=1)	0% (n=0)
Fall-related Injury	90% (n=27)	6.7% (n=2)	3.3% (n=1)	93.3% (n=28)	6.7% (n=2)	0% (n=0)

It is true that physical activity lowers the risk of each condition listed in question six on the survey, so “Yes” is the correct answer. The data shows 100% (n=30) of participants correctly identified on both pre/posttest that “cardiovascular disease”, “hypertension”, “type 2 diabetes”, “anxiety”, “depression”, and “weight gain” as condition that physical activity can lower the risk of. There was an increase of correct answers marked on the posttest for the conditions “all-cause mortality” (pretest 80%, posttest 100%), “stroke”

(pretest 90%, posttest 93.3%), “cancer” (pretest 66.7%, posttest 83.3%), “dementia” (pretest 60%, posttest 93.3%), “Alzheimer’s” (pretest 50%, posttest 90%), and “fall-related injury” (pretest 90%, posttest 93.3%). The only condition that did not show improvement but stayed the same was “falls” (pretest 96.7%, posttest 96.7%).

A paired sample t test was calculated for survey question six to identify any statistical difference between provider knowledge of physical activity lowering the risk of listed conditions after the educational resource. The choices “all-cause mortality” ($t=2.254, p=.032$), “cancer” ($t=2.249, p=.032$), “dementia” ($t=3.525, p=.001$), and “Alzheimer” ($t=4.170, p=.000$) all showed statistical difference, indicating the education increased provider knowledge regarding physical activity lowering the risk of listed condition. The choices marked with an “X” in Table 6 cannot be computed due to the difference being zero.

Table 6.

Survey Question Six Paired Sample Statistics

	Mean Difference	Std. Deviation	t	df	Sig. (2-tailed)
All-cause mortality	.241	.577	2.254	30	.032
Cardiovascular Disease	X	X	X	30	X
Hypertension	X	X	X	30	X
Stroke	.033	.615	.297	30	.769
Cancer	.233	.568	2.249	30	.032
Diabetes Mellitus 2	X	X	X	30	X
Dementia	.500	.777	3.525	30	.001

Alzheimer	.690	.891	4.170	30	.000
Anxiety	X	X	X	30	X
Depression	X	X	X	30	X
Weight Gain	X	X	X	30	X
Falls	.033	.183	1.000	30	.326
Fall Related Injury	.067	.254	1.439	30	.161

Question seven from the survey is a multiple-choice question that is identical on both the pretest and posttest. Data comparison was done to evaluate an increase in correct answer choice by participants after viewing the educational resource. This question asked participants “How many minutes per week should older adults engage in physical activity?”. The comparison of results is shown below (Table 7).

Table 7.

How many minutes per week should older adults engage in physical activity?

	Pretest		Posttest	
	Frequency	Percent	Frequency	Percent
30 minutes	2 (<i>n</i> =2)	6.7%	1 (<i>n</i> =1)	3.3%
60 minutes	2 (<i>n</i> =2)	6.7%	0 (<i>n</i> =0)	0%
90 minutes	14 (<i>n</i> =14)	46.7%	8 (<i>n</i> =8)	26.7%
120 minutes	7 (<i>n</i> =7)	23.3%	6 (<i>n</i> =6)	20.0%
150 minutes	5 (<i>n</i>=5)	16.7%	15 (<i>n</i>=15)	50.0%

The correct answer for question seven on the survey is “150 minutes” of physical activity is recommended for older adults each week. On the pretest only 16.7% (*n*=5) of

participants answered the question correctly. After the educational resource an increase to 50% ($n=15$) of participants answered the question correctly on the posttest. Half of the participants still chose the wrong answer on the posttest despite an educational resource.

A paired sample t test was done for survey question seven (Table 8). The data showed there was statistical significance in response ($t=-3.69, p=.001$). This indicates that educational resource increased participants ability to choose the correct choice

Table 8.

Survey Question 7 Paired Sample Statistics

	Mean Difference	Std. Deviation	t	df	Sig. (2-tailed)
How many minutes per week should older adults engage in physical activity?	-.767	1.135	-3.69	30	.001

Question eight on the survey is a multiple-choice question asking participants to identify “What intensity of physical activity is recommended for older adults?”. This question is identical on both pretest and posttest. The data was analyzed for comparison to show any increase in results after participants were presented with an educational resource. Table 9 (below) shows the comparison of results on both pretest and posttest. The correct answer for this question is “Moderate”, which is the intensity of physical activity recommended for older adults. On the pretest 60% ($n=18$) of participants answered the question correctly. The data shows an increase on the posttest with 80% ($n=24$) of participant choosing the correct answer. The number of participants that thought “low” intensity physical activity was the correct answer decreased after the

educational resource. None of the participants ($n=0$) chose “vigorous” intensity physical activity as a recommendation for older adults.

Table 9.

What intensity of physical activity is recommended for older adults?

	Pretest		Posttest	
	Frequency	Percent	Frequency	Percent
Low	12 ($n=2$)	40%	6 ($n=6$)	20.0%
Moderate	18 ($n=2$)	60%	24 ($n=24$)	80.0%
Vigorous	0 ($n=0$)	0%	0 ($n=0$)	0%

A paired sample t test was done for survey question eight (Table 10). The data showed there was statistical significance in response ($t=-2.26$, $p=.031$). This indicates that educational resource increased participants ability to choose the correct choice.

Table 10.

Survey Question 8 Paired Sample Statistics

	Mean Difference	Std. Deviation	<i>t</i>	df	Sig. (2-tailed)
What intensity of physical activity is recommended for older adults?	-.200	.484	-2.26	30	.031

Survey question nine is also used to evaluate if an educational resource will increase the knowledge level of participants regarding physical activity for older adults. This question is identical on both pretest and posttest. The question asks, “In 2018, how many older adults experienced falls?”. Table 11 shows the comparison of analyzed data from both the pretest and posttest.

Table 11.

Older adults that experienced falls in 2018

	Pretest		Posttest	
	Frequency	Percent	Frequency	Percent
11 million	1 (<i>n</i> =1)	3.3%	0 (<i>n</i> =0)	0%
19 million	10 (<i>n</i> =10)	33.3%	4 (<i>n</i> =4)	13.3%
27 million	13 (<i>n</i> =13)	43.3%	8 (<i>n</i> =8)	26.7%
36 million	6 (<i>n</i>=6)	20%	18 (<i>n</i>=18)	60.0%

The correct answer to this question is “36 million” older adults experienced falls in 2018.

Only 20% (*n*=6) chose the correct answer on the pretest. An increase in the correct answer choice to 60% (*n*=18) is shown by participants on the posttest.

A paired sample t test was done for survey question nine (Table 12). The data showed there was statistical significance in response ($t=-3.67, p=.001$). This indicates that educational resource increased participants ability to the choose the correct choice.

Table 12.

Survey Question 9 Paired Sample Statistics

	Mean Difference	Std. Deviation	<i>t</i>	df	Sig. (2-tailed)
In 2018, how many older adults experienced falls?	-.667	.994	-3.67	30	.001

Summary

The purpose of this scholarly project was to educate nursing staff and providers on the importance of physical activity for older adults. The findings from this study show that most healthcare providers (70%, n=21) already discuss physical activity with older adults in their current practice. Results varied when healthcare providers were asked to identify their own knowledge level of physical activity for older adults. There were significant improvements in health care provider posttest percentages after participants were provided an educational resource. The research indicated that the use of an educational resource to be an effective means of increasing healthcare providers knowledge levels regarding physical activity for older adults. Future research would need a larger sample size to get more specialized data. Further discussion of this study was done in Chapter V.

CHAPTER V

Discussion

Relationships of Outcomes to Research

The purpose of this scholarly project was to educate nursing staff and providers on the importance of older adults staying physically active as a means of preventing functional decline and maintaining quality of life. The study obtained data from healthcare providers and registered nurses using a pretest/posttest survey. The pretest was used to identify healthcare provider knowledge of older adult physical activity prior to the presentation of an educational resource. Whereas the posttest measured any increase in healthcare provider knowledge of older adult physical activity after the presentation of an educational resource. Following the project criteria, the objective for the study were met and the research questions were supported. The research questions addressed in this study are:

1. Do healthcare providers discuss physical activity with older adults in their current practice?
2. What is healthcare providers knowledge level associated with physical activity for older adults?
3. Will an educational resource increase the knowledge level of healthcare providers and registered nurses regarding physical activity for older adults?

For project question one the study found that most providers already discuss physical activity with older adult patients in their current practices. This created some differences when the research tends to show “rates of physical activity counseling from clinicians are quite low, which is one of the top priorities listed for change in the *Healthy People 2020* initiative” (Bowen, 2019, p.5). Speculation can be made that the small sample size created generalized results. This data could drastically change in future studies with larger sample sizes. There were no unexpected outcomes related to this project question.

Analysis of survey questions used to answer project question two revealed varied results when asking healthcare providers to identify their own knowledge level associated with physical activity for older adults. The varied results are consistent with trends seen in previous research findings. Provider knowledge level is important to consider because “patients frequently identify their family physician as a preferred source of encouragement for physical activity and exercise” (Rogers, 2012, p.610). The findings support the need educate healthcare providers on physical activity for older adults as a means of increased knowledge. No unexpected outcomes were met.

For project question three this study supports previous findings that an increase in knowledge is possible with the use of an educational resource. The data from this study revealed the use of an educational resource does increase the knowledge level of healthcare providers and registered nurses regarding physical activity for older adults. When participants are presented with true/false statements regarding physical activity for older adults the percentage of correct answers marked on the posttest increased after reviewing the educational resource. The educational resource also improved participants

ability on the posttest to correctly identify from a list of health conditions which one's physical activity lowers the risk of. To further support the research that education will increase knowledge, three multiple choice questions were used on the survey with each one showing statistical significance indicating an increase in participants choosing the correct answer after the educational resource.

Observations

A noteworthy observation from the study was that most providers indicate they currently discuss physical activity with older adults in their current practice. This is interesting since there is a general need for physical activity education across all areas of healthcare. I would find it interesting to have further research done to evaluate what degree healthcare providers discuss physical activity with older adults. I learned that the use of provider education significantly increased provider knowledge. Using the education to increase knowledge supports the research since many older adults rely on their healthcare providers for education and recommendations. Equipped with the proper knowledge healthcare providers can encourage older adults to stay physically active.

The performance of Qualtrics survey software allowed data to be easily collected and analyzed. The study instrument was user friendly, and no negative feedback was received from participants regarding this. The only difficulties with the study instrument occurred when trying to convert data from Qualtrics to Excel or SPSS software for further analysis. All data outcomes from this study instrument are reassuring. The results to each project question supports previous findings. Further research may be needed to see this study done with a larger sample size and see how the data analysis compares.

Theoretical Framework Evaluation

The theory of goal attainment is a ‘framework for social interaction and relationships and establish rules of behavior and course of action’ (King, 1981). The theory was utilized as the basis for research and provided the theoretical framework for provider education with evidence-based practice. Participants in the study were educated on the importance of physical activity for older adults. The information provided in the educational resource addressed the risks, benefits, recommendations, and barriers associated with physical activity for older adults. The results from the study support the theoretical framework. Utilization of the theory of goal attainment allowed concerns to be identified and addressed through shared information. There are no other variables that were identified to help explain the project questions better.

Logic Model Evaluation

The logic model used helped guide the study and evaluate the data. The study results support the proposed logic model. The use of a pretest/posttest survey and educational resource administered to healthcare providers and nursing staff provided the data needed to answer the research questions. The project results demonstrated the relationship between concepts as expected when developing the logic model for the project proposal. It followed true to course and all short-term outcomes were fully addressed in the study. More emphasis would need to be placed on the medium- and long-term outcomes in future studies before considering them fully addressed. Study result indicate that the use of an educational resource increased provider knowledge of physical activity for older adults. Results also revealed provider knowledge level and how many providers currently address physical activity with their older adult patients.

Limitations

There were some limitations to this study that must be taken into consideration. There is a chance that the method for sampling did introduce bias into the results due to the fact many of the participants were students in Pittsburg State University's Master of Education and Doctor of Nursing Practice programs. Graduate level students have a better understanding of research projects that could have put them at an advantage and artificially increased their results compared to other participants. Another form of bias from participants could have been participant interest in the topic. Interest level could have increased or decreased overall sample size.

Project instrument could have been a factor in limiting the end results of this project. In the grand scheme of things, the project instrument was appropriate for this type of sample because it was easily accessible. The limitation to this is that participants had to be provided a link to electronically access the survey. Participants could have had technical difficulties accessing and or viewing the survey from their own electronic device. This method allowed participants to complete the survey at their own leisure without any supervision. The downfall to this is that there was no support readily available to help participants troubleshoot the software or clarify questions on the survey. No adaptations to the project instrument were necessary during this study.

Time has had its own set of minor limitations for this project. Meeting deadlines for this study had the potential to alter results. The time of day, week, and year that the survey was administered could have altered the participants willingness to take the survey. Also, the time it took to take the survey could have limited some participants from completing it.

Implications for Future Research

The next steps in knowledge development on this topic would be to replicate the project and conduct additional research in the future. Although the literature supports increased provider knowledge related to education on physical activity for older adults, more data is needed to further support education effectiveness. Adjustments to the sample size would be a primary focus. When replicated, the same sample guidelines would be used but the overall sample size would be increased. Comparison of a larger sample size and its effect on the results could change the project outcome. Future research also needs to have more physicians, physician assistants, and nurse practitioners included as participants in the study.

Design improvements for the next time would include better instructions on how to access and navigate the survey. Considerations of recorded or interactive instructions could improve participation. Future research should provide the educational resource in multiple formats (video, slides, sound only, read only), allowing participant preference. Instead of having participants take the survey in one sitting, implementation of a follow-up survey would be utilized giving participants time to reflect on the information presented.

Implications for Practice/Policy/Education

The results of this study show the positive impact education has on increasing knowledge regarding physical activity for older adults. Despite the significance of the results, there is still room for improvement. Health care professionals can use the data collected to implement positive changes to nursing practice. Suggested changes for Advanced Practice Nurses (APRNs) would be to discuss the importance of physical

activity with every older adult at every visit. In addition to this, each older adult could be sent home with printed education discussing the physical activity recommendations for older adults. APRNs can collaborate with nursing education in both college and hospital settings providing them education on how to encourage older adults to stay physically active. APRNs can advocate for state legislation to implement health policy that will standardize education regarding physical activity for older adults. This would allow all healthcare professionals to have access to the same information. Similar health policies could support the initiative to have older adults' physical activity addressed at each doctors visit or admission.

Conclusion

The purpose of this scholarly project was to educate nursing staff and providers on the importance of physical activity for older adults to prevent functional decline and maintain quality of life. The education was presented to healthcare providers with the goal of increasing knowledge. The participants of this study were healthcare providers (physicians, physician assistants, or nurse practitioners) and registered nurses. All participants were required to be 18 years or older and English speaking. Participants were instructed to complete a survey (pretest, educational resource, posttest) to measure any increase in knowledge regarding physical activity for older adults. The study results support the research and show significant increase in healthcare provider knowledge after being presented with an educational resource. The project outcomes contributed to nursing knowledge and a greater awareness of the importance associated with keeping older adults physically active. The study showed many healthcare providers already discuss physical activity with older adults in their current practice. Despite the

significance of the results from this study, further research is needed with a larger sample size to determine true effectiveness. As further research is done, it is with high hopes that future education will continue to increase healthcare provider knowledge regarding the recommendations and benefits of keeping older adults physically active.

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APPENDIX

Appendix A:
Pretest

- 1) Which best describes you?
 - a. Healthcare provider (Physician, Physician Assistant, or Nurse Practitioner)
 - b. Registered Nurse

- 2) I am a Healthcare provider or registered nurse that has experience interacting with patients of all ages, including older adult patients. I am English speaking and older than 18 years of age.
 (If “False” is selected do not complete, skip to the end of the survey)
 - a. True
 - b. False

- 3) Do you currently discuss physical activity with older adult patients in your current practice?
 - a. Yes
 - b. No

- 4) Rate your current knowledge level regarding physical activity for older adults.

1	2	3	4	5
Novice	Advanced Beginner	Competent	Proficient	Expert

- 5) True/False Questions (Check True, False or Unsure)

	True	False	Unsure
Physical activity improves sleep and cognition.			
Older adults with sedentary lifestyles are more susceptible to chronic disease.			
Physical activity can be gardening.			
Physical activity can be housework.			
Physical activity can be walking,			

water aerobics and dancing.			
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- 6) For each of the options listed below, check Yes if physical activity will lower the risk. Check No if physical activity will not lower the risk. If you are unsure, check Unsure.

	Yes	No	Unsure
All-cause mortality			
Cardiovascular Disease			
Hypertension			
Stroke			
Cancer			
Type 2 diabetes			
Dementia			
Alzheimer's			
Anxiety			
Depression			
Weight Gain			
Falls			
Fall-related injury			

- 7) How many minutes per week should older adults engage in physical activity?
- 30 minutes
 - 60 minutes
 - 90 minutes
 - 120 minutes
 - 150 minutes
- 8) What intensity of physical activity is recommended for older adults?
- Low
 - Moderate
 - Vigorous
- 9) In 2018, how many older adults experienced falls?
- 11 million
 - 19 million
 - 27 million
 - 36 million

Appendix B:
Posttest

- 1) Which best describes you?
 - a. Healthcare provider (Physician, Physician Assistant, or Nurse Practitioner)
 - b. Registered Nurse

- 2) I am a Healthcare provider or registered nurse that has experience interacting with older adult patients. I am English speaking and older than 18 years of age.
 (If “False” is selected do not complete, skip to the end of the survey)
 - a. True
 - b. False

- 3) Do you currently discuss physical activity with older adult patients in your current practice?
 - a. Yes
 - b. No

- 4) Rate your current knowledge level regarding physical activity for older adults.

1	2	3	4	5
Novice	Advanced Beginner	Competent	Proficient	Expert

5) True/False Questions (Check True, False or Unsure)

	True	False	Unsure
Physical activity improves sleep and cognition.			
Older adults with sedentary lifestyles are more susceptible to chronic disease.			
Physical activity can be gardening.			
Physical activity can be housework.			
Physical activity can be walking, water aerobics and dancing.			

- 6) For each of the options listed below, check Yes if physical activity will lower the risk. Check No if physical activity will not lower the risk. If you are unsure, check Unsure.

	Yes	No	Unsure
All-cause mortality			
Cardiovascular Disease			
Hypertension			
Stroke			
Cancer			
Type 2 diabetes			
Dementia			
Alzheimer's			
Anxiety			
Depression			
Weight Gain			
Falls			
Fall-related injury			

- 7) How many minutes per week should older adults engage in physical activity?
- 30 minutes
 - 60 minutes
 - 90 minutes
 - 120 minutes
 - 150 minutes
- 8) What intensity of physical activity is recommended for older adults?
- Low
 - Moderate
 - Vigorous
- 9) In 2018, how many older adults experienced falls?
- 11 million
 - 19 million
 - 27 million
 - 36 million