Annual PT Exam for Frail, Elderly Community Dwellers

There are varying definitions for what phenotypes classify an individual as “frail.”1 However, most literature agrees that frailty broadly identifies vulnerable people who, when exposed to a stressor, are likely to develop a disability or even die.1,2,3 Frailty is closely linked with falls in elderly populations.1,3 This increase in falls risk in the frail is suspected to be to be attributed to loss of muscle mass from sarcopenia, polypharmacy due to multiple illnesses which in turn leads to impaired balance, and weight loss1. The associated characteristics of frailty, such as physical inactivity, weight loss, and decreased strength accelerates this particular population’s vulnerability to the onset of osteoporosis and increases their likelihood of falls and fractures.3 Falls are an all too common occurrence in community dwelling elderly individuals, and those who do fall are at a higher risk for various negative outcomes.4 Once a frail, elderly individual is exposed to the stress of a fall, they have a high risk of fracture which, as Rolland et al. states, leads to “a transition of disability, institutionalization, comorbid illnesses, and death.”3

Romera et al. examined the effectiveness of primary care based multifactorial intervention to improve frailty parameters in the elderly.2 The study suggests promising outcomes in reducing institutionalization and the risk of falls through a comprehensive geriatric assessment followed by a multidimensional intervention of disability risk factors.2 Addressing risk factors of disability- such as medical, functional, psychological, and environmental problems with a health promotion program may help frail, elderly individuals maintain their independence and decrease their risk of falls and subsequent fractures.2,4 There is evidence that even simple interventions, such as therapeutic exercise, may reduce the risk of falls, and additionally, enhance cognitive functioning and psychological well-being in frail, older adults.2,3,5

This population would substantially benefit from annual PT exam, due to the alarmingly increasing incidence of falls that comes with with age. Rolland et al. notes that the incidence of hip fractures rises from 1.6 per 1000 at the age of 65 years to 35.4 per 1000 at the age of 95 years. In just a 30-year span, the incidence rate is 22 times higher.3 Therefore, a physical therapy frailty and falls risk screening program for patients starting at the age of 65 and performed annually would likely catch any risk factors before fractures, disability, or other adverse events take place.2,3,5

The majority hip fractures are the result of falls in older adults. And, unfortunately, falls are the leading cause of death for individuals over the age of 65.4 Furthermore, falls are responsible for a substantial sum of health care costs, as they frequently result in expensive visits the emergency room and hospital admission. Even non-injurious falls, that do not result in costly hospital visits, cause harm to communities by evoking a disabling fear in older adults which in turn lead to decreased activity levels which further enhances the risk for additional falls.4

Physical therapists are educated and trained to promote health and wellness and reduce risk factors in their patients by providing patient education, prescribing physical activity and exercise, and performing non-invasive interventions to help their patients maintain their mobility.6 Physical therapists have the capability to screen for frailty and risk factors associated with falls in elderly, community dwellers.2 If physical therapists can accurately identify frail, elderly individuals and assess factors that increase the falls risk in these patients, appropriate measures and interventions may be implemented to prevent adverse outcomes, such as falls, fractures and disability.3,4

Subjective Exam

In their study on fragility, falls and fractures, Morley et al. provides a simple, subjective screen (easily memorized by the acronym FRAIL) to correctly identify frail patients at an increased risk for falls and disability.1 The subjective exam of this annual exam would begin by inquiring about **f**atigue (general perception), **r**esistance (“Can you walk up one flight of stairs?”), **a**erobic (“Can you walk more than a block?”), **i**llness (more than 5), **l**oss of weight (more than 5% in 6 months) in individuals over the age of 65.1 If findings were positive for this screening, the subjective assessment would continue. Convisky et al. evaluated a prediction index to identify community-dwelling elderly individuals who where at a risk for falling over the subsequent year.4 The authors found that a history of falling in the prior year predicts falling in the subsequent year, and that a history of balance difficulty or dizziness with the addition of an abnormal mobility exam were better discriminators of future falls- compared to a falls history alone.4 Therefore it would be beneficial to to inquire on falls history and balance difficulty and dizziness during the subjective exam. Additionally, patients will be inquired on any vision difficulties and the date of their last eye examination, as vision plays a critical role in balance.2 Finally, the patient’s environmental/living situation, shoe wear, and assistive device(s) should be assessed for potential factors that may increase their risk for falls and subsequent fracture.2,3,4

Outcome measures that would be administered during the subjective portion this annual exam would include the Activities-specific Balance Confidence (ABC) Scale and the Rapid Assessment of Physical Activity (RAPA). The ABC scale would help the examiner screen for an established fear of falling in the patient, and a score of <67% would be a positive finding for a potential falls risk and a need for follow-up.7 The RAPA is a useful assessment for adults over 50 years which conveys if a patient has suboptimal (any score less than 6) physical activity levels which may be further contributing to their frailty and falls risk.8

Objective Exam

The first objective measure of the exam will include the patient’s height and weight. Weight will be taken annually, due to the fact that a loss of weight of more than 5% in 6 months is an indicator for frailty.1 Height will be recorded as a means to calculate the patient’s body mass index (BMI), as frail, elderly individuals are often underweight and undernourished.1,3,5

As previously stated, Conviskey et al. found an abnormal mobility exam to be an important indicator for elderly individuals who are at risk for falls.4 The objective component of this annual exam would utilize components of Conviskey’s mobility exam index which includes assessing four tasks important to mobility: getting up from an armless chair, sitting down in an armless chair, raising feet while walking, and turning 180 degrees. Each task is scored as normal, completed with difficulty, or unable to do.4 An abnormal mobility exam (positive finding) would result in difficulty on two or more of the items or the inability to do one or more of the items.4

Balance during the annual exam will be further assessed with the Timed Up and Go (TUG) and the Four Stage Balance Test. The TUG will be used to assess dynamic walking balance and additionally assess the patient’s functional mobility of their lower extremities. 2,9 A TUG score equal to or greater than 12 seconds will classify the patient as a falls risk and need for follow up.9 The Four Stage Balance Test will be used to assess static balance measures and identify deficits. If a patient does not progress to the tandem (heel-toe) stance or cannot hold tandem stance for at least 10 seconds, they will be classified as a falls risk patient requiring physical therapy intervention and balance training.10

As the resource by the The Health Quality & Safety Commission states, the Four-Stage Balance Test, in addition with the TUG and 30 second chair stand test, can accurately identify if an older adult (age 65 and older) is at risk of falling.10 Therefore, the final objective component of the annual exam will include the 30 second chair stand test to further assess falls risk and gain a gage of the patient’s general strength.2 Cutoffs (positive for falls risk) for number of stands will be based on age and gender, as depicted in the Centers for Disease Control and Prevention guidelines (located in resource attached).11

Resources and Referrals

From a physical therapy perspective, the three priority items that would be addressed if a positive was found during the annual examination would be (1) history of previous fall(s), (2) a positive finding on the four stage balance test, and (3) an abnormal mobility exam. As previously referenced in this paper, Convisky et al. evaluated a prediction index to identify community-dwelling elderly individuals who where at a risk for falling over the subsequent year.4 The authors found that a history of falling in the prior year predicts falling in the subsequent year, and that a history of balance difficulty or dizziness with the addition of an abnormal mobility exam were better discriminators of future falls- compared to a falls history alone.4 Therefore a positive finding related to falls history, demonstration of balance difficulty (through the four stage balance test), and an abnormal mobility exam would be convincing evidence that a elderly individual has a high risk of falling and requires additional intervention. Physical therapists are excellent providers to address these findings, as they specialize in optimizing movement, improving mobility and addressing balance deficits with balance training and neuro-muscular interventions.

If a patient had a positive finding for the items listed above, I would provide them with two STEADI (Stopping Elderly Accidents, Deaths & Injuries) brochures created by the Centers for Disease Control and Prevention (attached).12 The “What You Can Do” handout provides patients with information and tips on how to reduce their chances of falling. The “Check for Safety Brochure” offers patients a checklist to help them identify and eliminate fall hazards in their home.12 Additionally, the patient would be provided with individually selected handouts from the OTAGO home exercise program. The OTAGO home exercise program is designed to prevent falls through leg muscle strengthening, balance training, and aerobic exercise (walking plan)- all of which patients can safely complete in their own homes.13 Therefore, the OTAGO handouts are an excellent resource that can help reduce the risk factors, such as decreased strength and balance deficits, that contribute to falls and frailty.13 These resources will serve the purpose of assisting in preventing future falls though patient education, addressing balance deficits, and improving general mobility and function through therapeutic exercise.12,13

\*\*the OTAGO exercise handouts are 72 pages long and I am unable to upload the file. Please refer to link in references (#13) for pdf handout.

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