

The Personal and Economic Impact of Falls in Florida: Promoting Prevention

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ABSTRACT

This paper describes the prevalence of falls in the United States, specifically in Florida, as well as the physical, financial, and emotional costs imposed on older Floridians after sustaining a fall. The accepted interventions for prevention are discussed with the goal of allowing health care providers to take a big-picture approach to addressing fall risk and to equip citizens to advocate for themselves to decrease their personal risk. Public Health can play a vital role in educating the public on potential risks and means to improve their health and safety in their home and community.

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BACKGROUND

Approximately 1 in 3 adults over the age of 65 experiences a fall each year (Falls Among Adults: An Overview, 2013). Throughout the United States in 2009, 2.2 million older adults experienced falls that resulted in treatment at the emergency department, and 40% of all hospital admissions for older adults were the result of a fall (Injury and Violence Prevention Publications, 2012). Unfortunately, through the past 10 years, the incidence of fall-related mortality has been rising (Falls Among Adults: An Overview, 2013). As the Florida Department of Health reports, in 2007-2011, falls were the primary cause of injury death for Florida residents aged 65 and older (Injury Prevention Program, 2013) as well as the primary cause of non-fatal injury hospitalization for adults 55 and older (Injury Prevention Program, 2013). Falls are regrettable, often preventable, occurrences that take place daily throughout Florida and impose physical, financial, and emotional costs for victims and their families. A decrease in the presence of modifiable risk factors for individuals can undoubtedly decrease the personal and socioeconomic burdens inflicted by the high prevalence of falls.

Risks Related to Falls

There are many injuries that can occur as the result of a fall including, but not limited to, fractures, traumatic brain injuries, sprains/strains, lacerations, and joint dislocations. Traumatic brain injuries and injuries to the lower extremities accounted for 78% of fall deaths and 79% of total health care costs in 2000 (Stevens, Corso, Finkelstein, & Miller, 2006b). Falls are the leading cause of all traumatic brain injuries and the direct cause of over 95% of hip fractures (Falls Among

Adults: An Overview, 2013). Women are over two times more likely to sustain a fracture from a fall and have 40% to 60% more non-fatal injuries caused by falling than men. Men are more likely to die following falls (Stevens & Sogolow, 2005).

Economic Impact of Falls

During 2011 in Florida, the average length of stay for fall-related injury hospitalizations was four days with a median cost of \$43,011, totaling greater than \$3.4 billion dollars (Older Adult Falls Prevention) for the year. In the United States in 2010 the direct medical costs resulting from fall-related injuries exceeded \$30 billion, and the Centers for Disease Control and Prevention (CDC) estimates that in 2020 the combination of direct and indirect costs of injury from falls will be \$67.7 billion. Medicare covers approximately 78% of costs when community-dwelling seniors receive treatment for fall-related injuries including hospitalizations, office visits, home health care, ER visits, and prescription drugs. In 2012, the Medicare cost per fall averaged between \$13,797 and \$20,450 (Falls Among Adults: An Overview, 2013).

Fear of falling and a history of falls cause a decrease in quality of life, an increase in emotional stress, activity avoidance, and withdrawal from typical social roles in community-dwelling older adults (Legters, 2002; Deshpande, et al., 2008). Having fear of falling or having a history of falling often causes a decrease in functional independence that can bring about a sense of loss of identity (Yardley & Smith, 2002) and depression (Arfken, Lach, Birge, & Miller, 1994; Burkner, et al., 1995).

Prevention of Falls

There is significant evidence for the value of prevention and intervention for those who are at risk for falling. Based on the body of evidence, the CDC recommends education on falls and risks, strength and balance exercise, regular eye examinations, review of medications for possible side effects or interactions, and home modifications to decrease one's risk (Preventing Falls: How to Develop Community-based Fall Prevention Programs for Older Adults, 2012; Chase, Mann, Wasek, & Arbesman, 2012). These steps to decrease risk of falling also can decrease fear of falling and avoid a decrease in one's social activities.

Education is a crucial element to decreasing the risk of falling among elderly Floridians. One study found that even just supplying a pamphlet of written fall risk information could significantly decrease the risk factors associated with falling, especially in those who had fallen previously (Hakim, Roginski, & Walker, 2007). Several multi-factorial intervention programs with one component being education have shown a significant decrease in falls (Moore, et al., 2010; Shumway-Cook, et al., 2007; Tinetti, et al., 1994; Clemson, et al., 2004).

Exercise and physical therapy are effective in decreasing the risk of falling (Sherrington, et al., 2008; Michael, et al., 2010). Both individually tailored exercise programs and group exercise programs administered by a physical therapist have treated balance dysfunction effectively and decreased the risk of falling (Martin, et al., 2013). Different types of exercise activities also benefit those at risk for falling including tai chi (Gillespie, et al., 2012; Leung, Chan, Tsang, Tsang, & Jones, 2011), walking programs (Yoo, Jun, & Hawkins, 2010), aquatic exercise (Arnold & Faulkner, 2010), and virtual reality balance training (Cho, Hwangbo, & Shin, 2014; Duque, et al., 2013).

Confounding Factors Related to Risk of Falls

Impaired vision can put one at increased risk for falling (Harwood, 2001; Ivers, Cumming, Mitchell, & Attebo, 1998). Current research shows that impairment of visual acuity, contrast sensitivity, visual field, and depth perception all are associated with increased risk for falls (Black & Wood, 2005). It is important for patients to visit their optometrist to have regular eye examinations to detect and monitor visual loss or eye disease. The optometrist will correct vision, treat underlying causes, and refer for surgery when required, such as for cataract surgery. One study reports that the rate of falling was reduced by 34% for those who undergo cataract surgery compared with those who do not undergo recommended cataract surgery (Harwood, et al., 2005).

Often elderly people take several medications, and medications are one of the many factors that can affect balance and lead to falls. It is advised that after a person experiences a fall, their medications should be reviewed, especially if the person is taking four or more medications, or is taking a psychotropic drug. Some of the medications which should be reviewed, among others, are benzodiazepines, antidepressants, anticonvulsants, antipsychotics, and digoxin (Riefkohl, Bieber, Burlingame, & Lowenthal, 2003).

There is also some evidence for home modification to decrease fall risk (Michael, et al., 2010), especially in those who are visually impaired (La Grow, Robertson, Campbell, Clarke, & Kerse, 2006). Common recommendations include: keep objects off of the floor, utilize night lights, coil cords and wires and tuck them out of the way, arrange furniture in a clear and easy to navigate manner, remove throw rugs, use non-slip rubber grip mats in the bathroom, and install grab bars in the shower, around the tub, and around the commode. Home assessments executed by occupational therapists are more effective (Gillespie, et al., 2012) and can help to perform home modification as well as behavior modification around the residence to decrease the risk of falling (Cumming, et al., 1999).

Clinical Practice and Prevention of Falls

Unfortunately, at this time fall prevention is not a common aspect of treatment in clinical practice (Tinetti, Gordon, Sogolow, Lapin, & Bradley, 2006). Often following treatment for acute symptoms, many fall victims do not receive counseling from a physician or clinician on fall prevention to help decrease the likelihood of another fall (Paniagua, Malphurs, & Phelan, 2006). There has been evidence that, in the general practice setting, using a 16-week complex exercise intervention lead by an instructor such as a physical therapist was effective at decreasing fall risk in older persons at risk than when compared with usual care (Freiberger, et al., 2013). Another study showed evidence that providing a one-hour multi-factorial risk assessment and a 30-minute follow-up with a nurse practitioner provided substantial decrease in falls, fall-related injuries, and health care utilization (Moore, et al., 2010). There have been numerous studies that indicate a multi-factorial intervention including education, exercise, eye care, medication review, and home modification are effective at decreasing risk (Moore, et al., 2010; Shumway-Cook, et al., 2007; Tinetti, et al., 1994; Clemson, et al., 2004). Not only are slips and trips reduced with an interdisciplinary falls prevention intervention, but quality of life and

emotional health were both also improved in a study on males 75-84 years old (Markle-Reid, et al., 2010).

With the lack of fall prevention as part of typical health care, public health can play a role with education. With evidence that the distribution of written information in the form of a brochure can help to decrease risk factors for falling, public education on the topic of fall prevention is a prospect for increasing safety for community-dwelling elderly. Also, with so much evidence supporting education, exercise, vision care, medication review, and home modification, the public can be made aware of the importance of seeking out these types of care independently. Physicians should be encouraged to discuss fall prevention with patients and to utilize services such as physical therapy, occupational therapy, and optometry to improve the safety of their patients. Florida communities would benefit from the public service of fall clinics where a multidisciplinary approach is taken with physicians, physical therapists, occupational therapists, and optometrists providing screenings to assess risk factors.

SUMMARY OF RESOURCE AVAILABILITY

The CDC has provided fall prevention brochures and information at: <http://www.cdc.gov/HomeandRecreationalSafety/Falls/pubs.html>. There are a few other Florida organizations where community-dwelling older citizens, their families, and health care providers can receive information:

- The Department of Elder Affairs, State of Florida: <http://elderaffairs.state.fl.us/doesa/arc.php>
- Local Senior Center, list of all Florida senior centers provided at: <http://www.floridahealth.gov/prevention-safety-and-wellness/older-adult-falls-prevention/resources.html#adrcs>
- There are currently nine Older Adult Falls Coalitions in Florida: <http://www.floridahealth.gov/prevention-safety-and-wellness/older-adult-falls-prevention/documents/fall-prevention-coalition-map.pdf>

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