Prevalence of Fall Risk Factors in Elderly Living In Nursing Homes

Thesis

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Summary

Older people make up a large and increasing percentage of the population. As people grow older they are increasingly at risk of falling and consequent injuries. A fall may be the first indication of an undetected illness. The prevention of falls is of major importance because they engender considerable mortality, morbidity and suffering for older people and their families, and incurs social costs due to hospital and nursing home admissions.

Approximately 30% of people over 65 fall each year, and for those over 75 the rates are higher. Between 20% and 30% of those who fall suffer injuries that reduce mobility and independence and increase the risk of premature death.

Falls occur more often in nursing homes as nursing home residents are generally frailer than seniors living in the community. They tend to be older, have more cognitive impairments, and have greater limitations in their activities of daily living. They also tend to have more chronic illnesses, be physically dependent, and have a higher prevalence of walking problems.

Fall risk factors can be classified as intrinsic or extrinsic. Intrinsic factors are related to the persons' functional and health status, such as status of ADL or IADL, visual impairment, balance disorders, foot problems, insomnia, hypotension, dizziness, presence of cardiovascular disease and perceived general health. Extrinsic factors are related to environment, such as poor lighting, slippery floors, lack of handrails in

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List of Abbreviations

ADL.....Activities of daily living

GDS15 .....Geriatric depression scales 15 items.

IADL .....Instrumental activities of daily living.

TUG .....Timed get up and go test.

FRI.....Fall risk index questionnaire.

AGS.....American Geriatrics Society.

Rand.....Research and Development.

OH .....Orthostatic hypotension.

SBP.....Systolic blood pressure.

DBP.....Diastolic blood pressure.

LTC.....Long-term care.

MMSE .....Mini Mental Status Examination.

ACOVE.....Assessing Care of Vulnerable Elders.

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Introduction

Older people make up a large and increasing percentage of the population of countries worldwide. As people grow older they are increasingly at risk of falling and suffering injury from falling. Falls are also associated with serious social and psychological consequences, as people lose confidence and become isolated and restrict their activity. A fall may be the first indication of undetected illness. Repeated falls often herald a decline in an older person's functional ability ***(Rubenstein, 2006).***

It is estimated that at least 30%of people aged 65 and over living in the community fall each year, with 20% of these falls requiring medical attention and around 5% resulting in fractures ***(Rubenstein, 2006).***

Each year, about 40%of nursing home residents fall ***(Gurwitz et al., 1994)***. This high propensity for falls and fall-related injury in the elderly is due to a high prevalence of co morbid diseases and physiological decline associated with aging that can make even a mild fall potentially dangerous ***(Gillespie et al., 2003).***

A fall is commonly cited as the event which precipitates admission to a nursing home, or other institutional care facility ***(Rubenstein, 2006).***

Thus understanding the causes of falls and how to intervene effectively to prevent falls amongst older people are important goals for researchers, clinicians, and policy makers.

Falls are a serious problem and a major cause of morbidity and mortality among the elderly, especially among those in long term care ***(Kannus et al., 1999).***

The American Geriatrics Society ***(2001)*** reported that the incidence of falls in nursing homes is about three times the rate for community-dwelling elders, producing an annual incidence rate of approximately 1.5 falls per bed. The injury rates of those in nursing homes are also higher; with 10–25% of these falls resulting in fractures, lacerations or a need for hospital care ***(Hignett and Masud, 2006).***

Major injuries, including head trauma, soft tissue injuries, fractures and dislocations, occur in 5–15% of falls in any given year. Fractures account for 75% of serious injuries, with hip fractures occurring in 1–2%of falls. Annually, 1800 falls directly result in death. Approximately 9500 deaths in older people are associated with falls each year ***(Fuller, 2000).***

Little attention has been paid to the psychosocial factors related to falls ***(Gillespie, 2003).*** Depression seems to be the most commonly known psychosocial risk factor related to falls: a depressive state of mind can increase the risk of falls ***(Stanlenhoef et al., 2002).***Fear is another psychological factor, found to be associated with falls . Falls and fear of falling were share predictors. That is, falls could predict fear of falling while fear of falling can also predict falls. Persons who worry about falling tend to avoid social activities or change their behavior such as refraining from outdoor activities although they used to enjoy these activities ***(Zijlstra et al., 2007).***

Falls are extremely expensive. Falls are the leading cause of lawsuits in nursing homes (**Rubenstein, 1997**) and a major cause of injury deaths among older adults ***(Kannus et al., 1999).***

In a published study, the average cost for the medical treatment of an injury from a single fall was $19,440. In 1994 alone the total direct cost of fall related injuries among people 65 and older was $27.3 billion, and it is expected to grow to $43.8 billion by the year 2020 ***(Englander et al., 2001).***

Aim of the Work

The aim of our study is to determine the prevalence of fall risk factors in elderly living in nursing homes.

Falls in The Elderly

Definition of Falls:

A fall is an event whereby an individual comes to rest on the ground or another lower level with or without loss of consciousness. Because presyncope and syncope can cause 'unexplained' falls and because of the frequent overlap of falls and syncope, the presence or absence of loss of consciousness has now been incorporated into the definition. In patients who are cognitively normal, falls can be classified according to their clinical characteristics. If a patient has tripped or slipped, the fall is 'accidental'. If a patient has fallen and or lost consciousness for no apparent reason, the episode is described as an 'unexplained' fall ***(Oliver et al., 2007).***

Recurrent falls are defined as three or more falls in the previous 12 months, the traditional definitions of syncope and falls treat them as separate conditions with different etiologies. More recently, Evidence has accumulated of an overlap between them. Separation of falls and syncope into two distinct entities relies on an accurate history of the event and an eyewitness account. These are unavailable for at least one-third of older patients who have experienced falls or syncope ***(Shaw and Kenny, 1997).***

Falls are termed drop attacks when the cause is not certain, the event is unexpected, and there is no apparent loss of consciousness. The initial accounts of drop attacks in elderly subjects were detailed by ***Sheldon (1960)***, who noted the

dramatic suddenness of the event, without alteration in alertness, an inability to regain upright posture immediately afterwards, and a preponderance of women. Since then, most reports on the epidemiology of falls have included drop attacks as one of the important causes of falls by elderly people. The incidence of drop attacks increases with age. A survey of 12 studies comprising 3684 falls estimated that 9 % (range 0–52 %) were due to drop attacks. In a study of falls among a random sample of elderly subjects aged over 65 years, the proportion due to drop attacks increased from 2 per cent in those aged between 65 and 74 years to 15 per cent in subjects aged over 90 years ***(Rubenstein and Josephson, 1996).***

Epidemiology of Falls in The Elderly

Prevalence of Falls in The Community:

In people over the age of 65 who are living independently, the incidence of falls is approximately 30%, more than half of which happens at home. The incidence rises to 50% in those over the age of 80. In people below the age of 75, falls are most often associated with factors related to normal aging as loss of strength, visual changes, loss of flexibility and decreased reflexes. Over the age of 85, the effects of multiple medical conditions and the medications used to treat them become more of a factor ***(Tinnetti et al., 1994).***

Older adults who fall once are 2 - 3 times as likely to fall again within a year. Approximately 25%-35%of community-dwelling people over the age of 65 fall one or two times each

year. Often, people don't know how or why they fell. Many do not recall a fall that happened 3 - 12 months earlier ***(Shumway-Cook, 1997).***

In a one-year study involving a sample of 336 people living in the community, tinnetti found that over 30%of the subjects fell at least once ***(Tinnetti et al., 1994).*** Previous studies have shown that the risk of falls increases proportionally as the number of risk factors increases ***(Berry & Kiel, 2008).*** Factors such as sedative use and cognitive impairment, although low in prevalence, are associated with a very high risk of falling ***(Tinnetti et al., 1994).***

Prevalence of Falls in Nursing Homes:

In 2003, 1.5 million people 65 and older lived in nursing homes. Each year, a typical nursing home with 100 beds reports 100 to 200 falls, and many others may go unreported. As many as 3 out of 4 people in nursing homes fall each year, twice the rate of falls for older adults living in the community ***(NCIPC, 2007b).***

Patients often fall more than once—an average is 2.6 falls per person per year. About 35% of fall injuries occur among residents who cannot walk. About 5% of adults 65 and older live in nursing homes. But people in nursing homes account for about 20% of deaths from falls in this age group ***(NCIPC, 2007b).***

About 1,800 people living in U.S. nursing homes die each year from falls. About 10%-20% of nursing home falls cause serious injuries; 2%-6% cause fractures. Falls can make it hard for a person to get around, cause disability, and reduce

quality of life. Fear of falling can cause further loss of function, depression, feelings of helplessness, and social isolation ***(NCIPC, 2007b).***

Falls Related Injuries:

In 2000 nearly two-thirds of the costs for nonfatal fall injuries were for those needing hospitalization. One-fifth of costs were for injuries treated in emergency rooms. Fractures were both the most common and most costly type of nonfatal injuries. Just over one-third of nonfatal injuries were fractures, but they made up 61% of costs about $12 billion ***(NCIPC, 2007a).***

Hip are the most frequent broken bone from falls. In the United States, 44% of direct health care costs for hip fractures are for hospitalization. Less than half of all older adults who suffer hip fractures will regain their prior level of function ***(Shumway-Cook et al., 2005).***

Traumatic brain injuries and injuries to the hips, legs, and feet were the most common and costly fatal fall injuries in 2000; they made up 78% of fatalities and 79% of costs. Injuries to internal organs caused 28% of deaths and accounted for 29% of costs from fatal falls ***(NCIPC, 2007a).***