Falls in the Aging Population

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KEYWORDS

• Accidental falls • Falls prevention • Older people • Risk factors • Screening

KEY POINTS

- Falls can result in devastating consequences.
- Assessment and remediation of risk factors may prevent falls.
- For those at high risk, comprehensive assessment that includes history of falls; evaluation of medical comorbidities; medication review; physical examination, including gait and balance tests; relevant blood and imaging investigations; and environmental surveillance, is more likely to identify the reasons for falls.
- Multifactorial interventions are more effective than single interventions because the cause of falls is most often a result of multiple interacting factors.

INTRODUCTION

The population is aging globally, and importantly, the rate of increase is greater in developing countries compared with more developed nations.[1] In 2015, about 900 million of the world population was aged 60 years and older, and this is set to increase to more than 2 billion by 2050.[1]

Independence and the ability to "age in place" are fundamentally important for "healthy aging" among older people. Falls and consequential injury or fracture are a threat to "healthy aging," independence, and well-being.

Falls is defined as an event during which a person inadvertently comes to rest on the ground or lower level.[2] Falls are risky to older people, leading to many adverse consequences for the individual. Falls in older people are often a result of interacting risk factors. Falls can be a manifestation of underlying health disorders. Therefore, when older

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patients present with falls, it should be seen as an opportunity for a comprehensive assessment to intervene, identify underlying health disorders, and institute strategies to remediate contributory factors.

The impact of falls is not confined to the individual but instead affects families and also the community. The cost of falls on the health care system is phenomenal, and therefore, it is not surprising that falls prevention and management strategies are considered vital for many health and aged care systems internationally.

Reassuringly, there is growing evidence to support falls prevention and management activities, but the challenge remains with the translation of evidence. A failure to act at this time will contribute to increasing disability, mortality, and costs for the aging population. In contrast, effective translation of available evidence might prevent falls and its consequences, which in turn will enable the achievement of "healthy aging."

This review, which focuses on assessing risk of falls in community-dwelling older people, seeks to highlight the impact of falls, discusses some of the risk factors, and finally, concludes by providing an overview of intervention strategies.

PREVALENCE, LOCATION, AND CONSEQUENCES

It is estimated that a third of community-dwelling individuals older than 65 years fall each year, and this increases to a reported rate of 50% in some studies of those living in residential care facilities.[3] About 40% of people aged 80 years and over may suffer from at least one fall each year.[4] In hospital, fall rates vary between 3 and 20 per 1000 bed-days.[5] Therefore, falls are common.

Most falls occur during the day and at home, with 20% occurring at night between 9 PM and 7 AM, some involving a rush to the bathroom.[6] Another study identified transitions between surfaces (eg, on, to, or from carpet/rug or wet areas)[7] and entry into and out of motor vehicles as other risk locations.[8] Getting on and off furniture can also be risky (eg, chairs or stools or bed).[8]

Falls are the main contributor to injury, related disability, and premature death in older people.[4] Severity of injuries can vary, and 40% to 60% of falls result in major lacerations, nonvertebral fractures, and traumatic head injuries.[9] Prolonged lying after a fall can lead to dehydration, rhabdomyolysis, pressure sores, and pneumonia, all of which add to the length of hospital stay.[10] There is also an association between falls and the sequential occurrence of radial, humeral, or vertebral fractures and hip fractures (ie, the "fracture cascade").[11] Almost 95% of all hip fractures are a result of falls.[12] An estimated 10% to 20% of patients with hip fractures are discharged to nursing homes, and 20% die within 12 months.[13,14]

Falls not only result in physical injury but also cause psychological injury whereby falls lead to a "fear" of falling.[15] This "fear" can develop in 20% to 40% of people who fall, cause debility, and lead to a downward spiral of physical health, resulting in functional decline, social isolation, depression, and institutionalization.[15]

The human and economic costs of falls are well reported globally. In the United States, falls are the second leading cause of unintentional death (after road traffic injuries) from injury and the leading cause of nonfatal injury.[16] In the United Kingdom, falls account for about 14% of emergency admissions, 4% of all hospital admissions in people more than 65 years, and approximately one-third of all injury-related hospitalizations.[17] In Australia, within the Sydney metropolitan area, 37,488 fall-related ambulance calls were recorded in a 2008 public health surveillance database, translating to a crude rate of 843 per 100,000 people.[18] Fifty-six percent of these calls