

# Falls in older people: A global public health concern

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## Abstract

**Background:** Falls are the second leading cause of unintentional injury deaths among older adults, often resulting in fractures, disability, loss of independence, and increased mortality.

**Aim:** This review explores the global burden of falls, highlights risk factors and regional disparities, and examines prevention and policy strategies with a focus on LMICs.

**Methods:** A narrative review of global and regional evidence, including systematic reviews, WHO guidelines, and country experiences, was conducted to synthesize current knowledge and identify policy implications.

**Findings:** Falls affect 30–40% of older adults annually and account for more than 684,000 deaths worldwide. Risk factors include physiological decline, chronic diseases, polypharmacy, environmental hazards, and social isolation. High-income countries have developed structured prevention programs, whereas LMICs face data gaps, limited resources, and competing health priorities.

**Conclusion:** Falls among older adults are largely preventable through multifactorial strategies, including primary care screening, community-based exercise, environmental modifications, and improved surveillance systems. As global ageing accelerates, prioritizing fall prevention is both a cost-effective investment and a moral responsibility to ensure safe and dignified ageing.

**Keywords:** Falls, Older adults, Aging, Injury prevention, Geriatric health, Developing countries, Global health, Public health, Low- and middle-income countries (LMICs), Elderly care

**Abbreviations:** ADLs: Activities of Daily Living; HICs: High-Income Countries; LMICs: Low- and Middle-Income Countries; NICE: National Institute for Health and Care Excellence; NGO: Non-Governmental Organization; UN: United Nations; WHO: World Health Organization

## Introduction

Globally, populations are aging at an unprecedented rate. By 2030, it is estimated that one in six people will be aged 60 years or older, with the number projected to reach 2.1 billion by 2050 [1]. This demographic shift is occurring more rapidly in low- and middle-income countries (LMICs) than in high-income countries (HICs), placing immense pressure on under-resourced health systems [1,2]. With increasing age, the risk of falls becomes more prominent. Falls are not only the most common cause of injury among older adults but also a major cause of hospitalization, disability, and mortality [3]. In the United Kingdom, nearly one-third of individuals over the age of 65 fall each year, with many experiencing multiple falls [3,4]. In contrast, in India, a community-based study in Tamil Nadu showed that 28% of older adults reported at least one fall in the previous year, but most did not seek medical attention [5].

The burden of falls is amplified in LMICs, where older adults often reside in environments that are not adapted to age-related impairments, and access to geriatric care, rehabilitation, and social support is limited [3,6]. In many developing countries, health infrastructure remains focused on infectious diseases and maternal-child health, often neglecting the emerging needs of an aging population [7].

Older adults in LMICs may face cultural and economic barriers to seeking care after a fall, such as stigma, limited financial resources, and a lack of awareness about fall prevention [8]. These challenges contribute to higher rates of fall-related complications and poorer outcomes. In contrast, countries like Japan and Sweden have advanced elder care systems with integrated fall prevention programs and routine fall risk assessments [9,10].

This paper aims to highlight the global burden of falls among older people, identify key risk factors, examine regional disparities—particularly in developing countries—and review evidence-based prevention and policy strategies to reduce this growing public health threat. While thousands of studies on falls in older adults have been published in recent years, our narrative review emphasizes the most relevant and high-impact contributions. We highlight recent systematic reviews, international guidelines, and policy-oriented evidence, particularly where these fill critical gaps or build upon established frameworks to inform global and low-resource settings.

## Epidemiology of Falls

Falls account for over 684,000 deaths annually, making them the second leading cause of accidental or unintentional injury deaths worldwide [11,12]. Approximately 30–40% of community-dwelling adults aged 65 and above experience at least one fall each year [3,12]. The incidence is even higher among those in long-term care facilities or hospitals [11]. In the European Union alone, falls in people aged 65 and over result in over 5 million emergency room visits annually [13]. In LMICs, falls among the elderly often go unreported and unmonitored due to weak surveillance systems and limited healthcare access [6]. Older adults in rural or impoverished areas may not seek formal care for fall-related injuries, instead relying on home remedies or traditional healers, which can delay effective treatment [4].

Urbanization in LMICs has also increased fall risk, particularly in informal settlements with uneven terrain, lack of pavements, and inadequate public lighting [14]. These conditions make mobility difficult for older adults, especially those with visual or mobility impairments. In contrast, countries like Australia have adopted urban planning guidelines that promote age-friendly infrastructure, including even pavements, pedestrian crossings, and public transport designed for older adults [14].

## Risk Factors

Multiple intrinsic and extrinsic factors contribute to falls in the elderly. Intrinsic factors include age-related physiological changes, such as decreased muscle strength, impaired balance, visual deficits, and cognitive impairment [15,16]. Chronic conditions such as arthritis, stroke, diabetes, and Parkinson's disease significantly elevate the risk [17,18]. Nutritional deficiencies, especially vitamin D insufficiency, are common in older populations and can exacerbate frailty and balance issues [16].

Extrinsic factors involve environmental hazards like poor lighting, slippery surfaces, uneven flooring, lack of handrails, and inappropriate footwear [16,18]. In LMICs, structural challenges such as narrow staircases, lack of accessible bathrooms, and absence of elder-friendly public infrastructure further increase extrinsic risks [19].

Polypharmacy and the use of certain medications, particularly sedatives, antidepressants, and antihypertensives, also increase fall risk [20,21]. A survey in Nepal found that more than 40% of elderly patients admitted for falls were taking five or more medications [22].

Social isolation, low socioeconomic status, and lack of social support are additional risk factors. In many cultures, older people live alone due to urban migration of younger family members [23]. In contrast, Scandinavian countries have community-based eldercare programs and regular home visits that reduce isolation and monitor fall risk [23].

## Consequences of Falls

The consequences of falls extend beyond physical injuries. Hip fractures, head injuries, and soft tissue injuries are common outcomes, with hip fractures associated with particularly high morbidity and mortality [24]. Around 20% of hip fracture patients die within a year of the injury [24]. Falls often trigger a downward health spiral, resulting in reduced mobility, fear of falling again, and ultimately, loss of independence [25].

Falls can lead to long-term functional decline, dependence in activities of daily living (ADLs), and institutionalization. Psychologically, falls can result in fear of falling, depression, social withdrawal, and decreased quality of life [26]. Older adults who fear falling may limit their movement, leading to physical deconditioning, which in turn increases fall risk [25]. Economically, falls impose substantial burdens on health systems. In the United States alone, the annual medical cost of falls among older adults exceeds USD 50 billion [26]. In the UK, the cost is estimated at GBP 2.3 billion per year [27]. For LMICs, such as Bangladesh or Ethiopia, even modest injury-related expenses can be catastrophic for households. A study in Bangladesh found that the average out-of-pocket cost for fall-related treatment equaled over two months of household income [28].

## Global and Regional Variations

Although falls affect older adults globally, the burden and response vary by region. In HICs, there are structured fall prevention programs, surveillance systems, and rehabilitation services [29,30]. These include evidence-based exercise programs, community education campaigns, and home modification support [30,31]. However, even in HICs, disparities exist among rural populations, minority communities, and socioeconomically disadvantaged groups.

In LMICs, the burden of falls is high, but health systems often lack data, trained personnel, and dedicated resources for fall prevention [25]. Preventive interventions are rare, and rehabilitation services are often unavailable or unaffordable. Few governments have national policies targeting fall prevention among older adults, and geriatric care is not integrated into primary healthcare. For instance, Nepal's national health policy includes only limited references to elder care [7]. Countries like Canada have implemented national

guidelines on fall prevention and regularly train community health workers [30]. In contrast, developing countries rely heavily on families or untrained caregivers. Localized initiatives such as Vietnam's "Healthy Aging" pilot project have shown promise in community-based fall education [32].

## Fall Prevention Strategies

Effective fall prevention requires multifactorial interventions targeting multiple risk factors. Key strategies include:

- **Exercise and physical therapy:** Balance and strength training exercises (e.g., Tai Chi, Otago Exercise Programme) reduce fall incidence [31,33]. In LMICs, community-based yoga or group walks can serve as low-cost options.
- **Home and environmental modifications:** Improving lighting, installing grab bars, and removing tripping hazards can mitigate extrinsic risks [32,33]. Systematic reviews consistently support environmental modifications—such as lighting improvements, grab bars, and non-slip flooring—as effective measures to reduce fall risk among community-dwelling older adults (e.g., a high-certainty review and a meta-analysis found approximately 26% reduction in fall-related injuries [19]).
- **Medication review:** Regular medication review helps reduce polypharmacy [20,21]. In the Philippines, a geriatric clinic-led "brown bag" program reviews all medications brought in by older patients.
- **Vision and hearing care:** Routine checks detect impairments that elevate fall risk [35]. Rwanda's mobile clinics provide eye and hearing checks in rural villages.
- **Assistive devices:** Proper use of canes, walkers, and orthotics can aid mobility [36]. In Uganda, NGOs have distributed locally produced walking aids to elders in remote areas.
- **Education and awareness:** Public campaigns targeting elders, families, and caregivers reduce stigma and promote prevention [37]. Thailand's national TV campaign on fall prevention reached over 5 million viewers in 2021 [36].

## Policy and Health System Responses

Policy responses should integrate fall prevention into national aging and health strategies. WHO's "Step Safely" technical package offers guidance for countries to develop evidence-based, context-specific fall prevention policies [38].

Primary health systems must include fall risk screening, train staff, and ensure referral for rehabilitation. Cross-sectoral collaboration is key—urban planning, transportation, and housing policies must align to create age-friendly environments [36,38,39]. Investments in data systems are vital. Countries like South Korea and Finland have national injury registries that track falls and evaluate interventions [18]. In contrast, most LMICs lack national data, impeding response [6,40]. International partnerships, such as the WHO Global Network for Age-friendly Cities, offer platforms for sharing strategies and successes across income settings. Bilateral aid and development funding could help LMICs establish scalable fall prevention frameworks. All the activities may support the healthy and active aging, the UN initiative of Healthy Ageing Decade as well [41,42].

## Conclusion

Falls among older adults remain a major but preventable public health challenge with serious health, social, and economic consequences. While HICs have advanced prevention programs, LMICs face gaps in data, resources, and policy attention. Integrating fall risk screening into primary care, promoting community-based exercise, adapting age-friendly environments, and strengthening surveillance systems are essential steps. As populations age rapidly, prioritizing fall prevention is both a cost-effective investment and a moral responsibility to ensure safe and dignified ageing worldwide.

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