

Implementing the World Falls Guidelines in Indonesia: Challenges, Opportunities, and Future Directions

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Abstract

Falls are a leading cause of disability, loss of independence, and healthcare utilisation among older adults. As the Indonesian population ages, the need for a more systematic approach to falls prevention is becoming increasingly urgent. Although Indonesia already has strong foundations for healthy ageing through its primary healthcare system and community-based programmes, falls prevention remains fragmented and is not routinely integrated into clinical practice. The World Falls Guidelines (WFG) offer the first internationally agreed framework for risk-stratified falls prevention. In this perspective, we examine the opportunities and challenges of implementing the WFG in Indonesia, drawing lessons from Southeast Asia and other low- and middle- income countries (LMICs). We argue that successful implementation will depend not on directly transferring the guideline, but on adapting its delivery to Indonesia's existing healthcare infrastructure, workforce, and community resources. By leveraging platforms such as Puskesmas and Posyandu Lansia and strengthening implementation research, Indonesia has the opportunity to establish an integrated, sustainable, and contextually appropriate approach to falls prevention.

Keywords: Falls prevention; Implementation; Older adults; Primary healthcare

Introduction

Population ageing is transforming health systems worldwide, bringing falls among older adults to the forefront of health ageing agendas [1, 2]. Globally, falls are a leading cause of injury, disability, and premature mortality, with their burden rising most rapidly in low- and middle-income countries (LMICs) [2, 3]. Indonesia is no exception. As one of the fastest ageing countries in Southeast Asia, Indonesia is expected to experience a substantial increase in the number of older adults at risk of falls over the coming decades, placing growing pressure on individuals, families, communities, and the healthcare system [4]. Falls are a leading cause of injury, disability, and premature mortality among older adults [1,5]. Beyond the initial injury, its consequences extend further, contributing to functional decline, fear of falling, activity restriction, reduced social participation, and greater dependence on family members and health services [6-8].

In response to this global challenge, the *World Guidelines for Falls Prevention and Management for Older Adults* (World Falls Guidelines or WFG) provide the first internationally agreed

framework for identifying, assessing, and managing falls risk across healthcare settings.[9] The WFG advocates a systematic approach centred on routine screening, risk stratification, multifactorial assessment, and tailored management. Since their publication, the guidelines have become an important reference for advancing evidence-based fall prevention worldwide. Yet an important question remains: *can the World Falls Guidelines be implemented in countries such as Indonesia?*

Most recommendations within the WFG are underpinned by evidence generated in high-income countries with well-established multidisciplinary services, rehabilitation capacity, and referral pathways. In contrast, healthcare delivery in Indonesia is characterised by different workforce configurations, resource constraints, financing mechanisms, and sociocultural contexts. These differences raise an important challenge: while the principles of the WFG are universally relevant, their implementation is unlikely to succeed through direct adoption alone. Instead, they must be translated into approaches that are feasible, acceptable, and sustainable within the Indonesian health system.

This perspective explores what it would take to implement the World Falls Guidelines in Indonesia. We discuss the current landscape of fall prevention, examine the opportunities and challenges of translating the guidelines into practice, consider lessons from neighbouring Southeast Asian countries and other LMICs, and propose future directions for contextual adaptation, implementation research, and policy development.

Current Fall Prevention in Indonesia

Indonesia has a well-established primary healthcare system that provides a strong foundation for promoting healthy ageing and maintaining functional independence among older adults. Community health centres (*Puskesmas*), supported by integrated community health posts for older adults (*Posyandu Lansia*), offer preventive, promotive, curative, and rehabilitative services across the country [10-12]. These platforms enable regular engagement with older adults and place primary care at the centre of community health, creating favourable conditions for delivering preventive interventions.

Many activities that contribute to falls prevention are already embedded within existing health programmes. Community exercise initiatives such as *Senam Lansia* encourage physical activity, balance, and mobility, while programmes targeting non-communicable diseases, including *Program Pengelolaan Penyakit Kronis* (Prolanis), promote the prevention and management of chronic conditions that are closely associated with falls risk [13]. Physiotherapists, nurses, physicians and community health volunteers (*kader*) also contribute to maintaining mobility and functional ability among older adults through routine health services and community-based activities. Together, these initiatives reflect Indonesia's longstanding commitment to healthy ageing and provide a valuable platform for supporting falls prevention.

Research activity has also grown steadily over the past decade. Indonesian studies have demonstrated the feasibility and effectiveness of various exercise interventions, including balance training, strengthening exercises, the Otago Exercise Programme, and multicomponent exercise, in improving physical performance and reducing falls risk among community-dwelling older adults

[14-17]. This growing body of evidence provides an important scientific foundation for future falls prevention initiatives.

Nevertheless, these efforts are generally delivered as part of broader healthy ageing, rehabilitation, or chronic disease programmes rather than through a dedicated falls prevention framework. Existing policies support healthy ageing and geriatric care, yet no national clinical guideline currently provides a standardised pathway for community-based falls prevention, including recommendations for routine screening, assessment, referral, and management. Consequently, the organisation and delivery of falls prevention vary across healthcare settings and are often shaped by local priorities and available resources.

The World Falls Guidelines

The publication of the World Falls Guidelines in 2022 marked a significant milestone in the evolution of falls prevention [9]. Developed through an international multidisciplinary collaboration, the WFG synthesises the best available evidence into a comprehensive framework applicable across community, hospital, and long-term care settings. Unlike many previous guidelines that focused primarily on individual interventions, the WFG proposes a coordinated model of care that spans the entire continuum of falls prevention, from identifying older adults at risk to delivering personalised interventions and ongoing follow-up.

A defining feature of the WFG is its emphasis on risk stratification (Figure 1). The guideline advocates a tiered approach in which the intensity of assessment and management is determined by an individual's level of falls risk. Older adults at low risk are encouraged to remain physically active and maintain healthy lifestyles, those at intermediate risk are offered evidence-based exercise interventions targeting strength and balance, while those at high risk undergo comprehensive multifactorial assessment followed by individually tailored management. This approach aims to optimise healthcare resources while ensuring that interventions are proportionate to clinical need [9].

Importantly, the WFG recognises falls as a multifactorial geriatric syndrome requiring coordinated action across healthcare disciplines and settings. Accordingly, the guideline integrates routine falls enquiry, gait and balance assessment, medication review, management of vision impairment and cardiovascular conditions, environmental modification, education, and behavioural strategies within a single evidence-based framework. By linking screening, assessment, intervention, referral, and follow-up, the WFG shifts falls prevention from isolated interventions towards an organised clinical pathway.

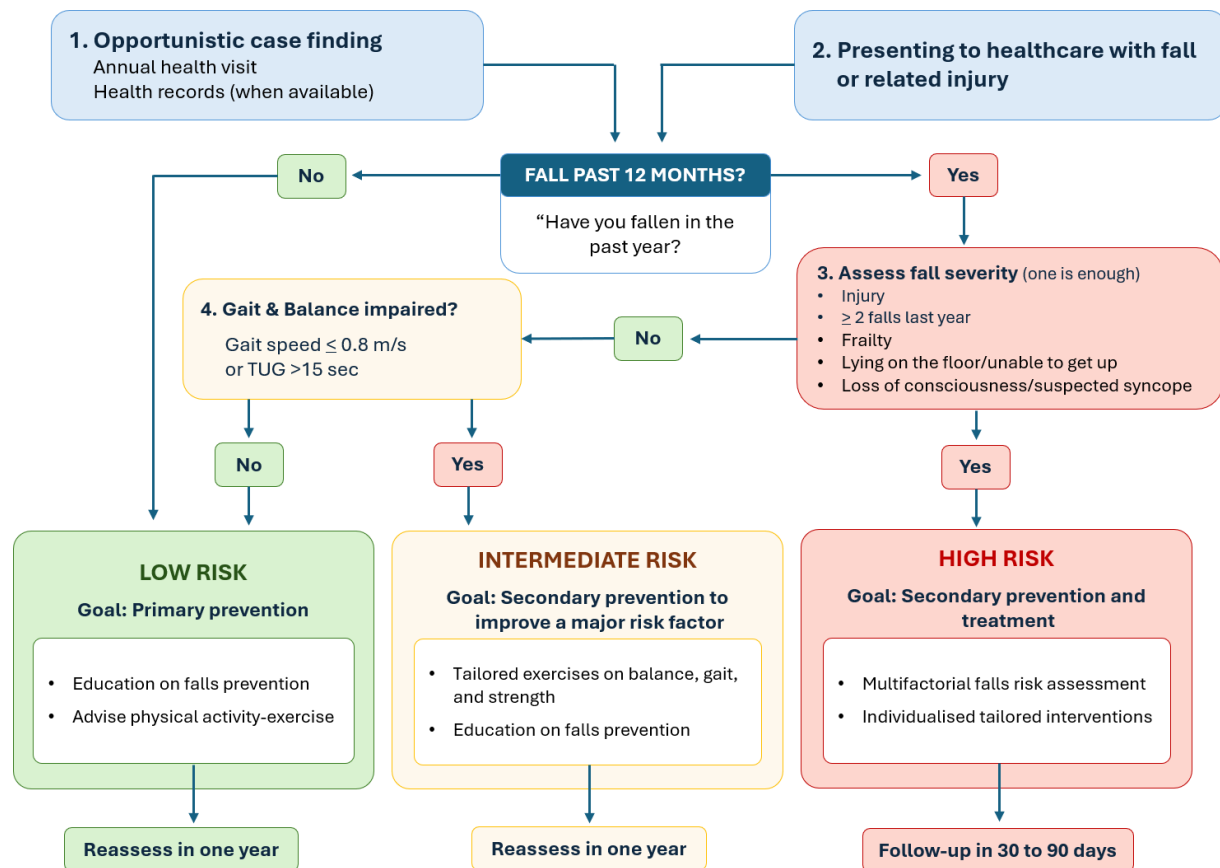


Figure 1. Algorithm for risk stratification, assessment and management for fall prevention. Adapted from Montero-Odasso et al. World Guidelines for Falls Prevention and Management for Older Adults [9].

Recognising the diversity of healthcare systems worldwide, the WFG was developed with input from experts representing both high-income countries and LMICs and explicitly acknowledges the need for contextual adaptation during implementation. The guideline provides overarching principles rather than a universal implementation model, recognising that healthcare workforce, available resources, financing mechanisms, and models of care differ substantially across countries. Consequently, successful implementation depends not only on the strength of the evidence but also on the ability to translate these recommendations into locally feasible and sustainable practice.

For countries such as Indonesia, the value of the WFG therefore lies not simply in its recommendations, but in the structured framework it provides for organising falls prevention within existing health systems. The challenge is no longer whether effective interventions exist, but how they can be systematically integrated into routine care. This raises the next question: *what factors may facilitate or hinder the implementation of the World Falls Guidelines in the Indonesian context?*

Challenges in Implementing the WFG in Indonesia

The WFG provides a comprehensive, evidence-based framework for fall prevention. However, implementing the guideline extends beyond introducing new clinical recommendations. It requires

health systems to support routine case finding, risk stratification, multidisciplinary assessment, referral pathways, and coordinated follow-up. These elements must function as an integrated care pathway rather than as isolated clinical activities.

The first challenge relates to transitioning from opportunistic prevention to systematic identification of fall risk. Current healthy ageing programmes provide multiple opportunities to engage older adults through *Puskesmas*, *Posyandu Lansia*, and community-based activities. However, falls are not routinely screened for during these encounters, and no nationally standardised pathway currently guides healthcare professionals on when and how to assess falls risk or determine appropriate management. Implementing the WFG would therefore require integrating routine falls enquiry and risk assessment into existing primary care workflows while ensuring that these processes remain feasible within busy community health services.

A second challenge concerns delivering risk-stratified care within resource-constrained settings. The WFG recommends different management pathways according to an individual's level of falls risk, supported by multidisciplinary assessment and tailored interventions. Although this approach improves efficiency by matching intervention intensity to clinical need, its implementation depends on adequate workforce capacity, referral mechanisms, and access to appropriate services. Similar challenges have been reported across LMICs, where shortages of rehabilitation professionals, competing health priorities, and limited healthcare resources make comprehensive implementation difficult [18-20]. Recent international evaluations also demonstrate that even among countries actively adopting the WFG, progress remains highly variable, with resource availability and health system organisation consistently identified as major determinants of successful implementation [21].

Implementation must also account for the organisation of healthcare delivery [22]. Unlike many high-income countries where falls prevention services are often supported by multidisciplinary geriatric teams and established referral networks, primary care in Indonesia operates within different workforce configurations and service priorities. Nevertheless, Indonesia possesses important strengths, including an extensive network of *Puskesmas* and community health volunteers. Successful implementation is therefore likely to depend on adapting the principles of the WFG to fit existing service structures and workforce roles.

Finally, implementation is influenced by broader health system priorities. Primary healthcare in Indonesia continues to address multiple pressing challenges, including communicable diseases, non-communicable diseases, maternal and child health, and healthy ageing initiatives [23]. Introducing a dedicated falls prevention pathway therefore requires demonstrating not only clinical effectiveness but also feasibility, affordability, and compatibility with existing services. Experiences from countries implementing the WFG indicate that contextual adaptation, policy support, and alignment with national health priorities are essential for sustainable implementation, particularly in resource-limited settings.

These challenges should not be viewed as barriers to implementation but rather as considerations for adaptation. The core principles of the WFG remain highly relevant to Indonesia. Their successful implementation is likely to depend on how effectively it can be integrated into existing primary healthcare structures, community programmes, and national health priorities. Similar

implementation questions have emerged across Southeast Asia and other LMICs, providing valuable lessons for Indonesia's future development.

Lessons from Southeast Asia and other LMICs

Although the World Falls Guidelines (WFG) were published only recently, valuable lessons can be drawn from countries in Southeast Asia and other LMICs that have already sought to implement evidence-based falls prevention within resource-constrained health systems. While these initiatives were not designed to implement the WFG itself, they demonstrate an important principle that underpins successful implementation: evidence-based falls prevention cannot simply be transferred from one healthcare system to another but must be delivered through models that are feasible within the local context.

Across the region, countries have consistently built falls prevention around existing healthcare infrastructure rather than establishing entirely new services. China integrated falls prevention into rural primary healthcare using village clinicians and community networks, while Thailand embedded programmes within community health services through collaboration between physiotherapists, nurses, village health volunteers, and local organisations [18, 24-26]. Singapore developed multidisciplinary community programmes supported by national clinical guidance, whereas Malaysia explored coordinated multidisciplinary care for older adults at increased risk of falls [27, 28]. Despite differences in organisation and healthcare financing, these initiatives shared a common philosophy: leveraging available healthcare resources and workforce capacity to maximise programme reach and sustainability, rather than attempting to replicate service models developed in high-income countries.

These experiences also demonstrate that implementation is not simply about selecting an effective intervention [29]. Instead, programme delivery was shaped by the realities of each health system, including workforce availability, referral pathways, community engagement, and existing models of care. Primary care providers, nurses, community health workers, volunteers, and family members frequently contributed alongside physiotherapists, illustrating how task-sharing and multidisciplinary collaboration can extend service capacity while maintaining access to evidence-based care.

Importantly, these studies also highlight that feasibility should not come at the expense of effectiveness. Several programmes successfully integrated falls prevention into routine services and achieved good participant engagement, yet improvements in falls outcomes were more variable when professional supervision, intervention intensity, or access to follow-up services were limited. Collectively, these findings suggest that successful implementation requires balancing what is evidence-based with what is practical within the local healthcare system.

For Indonesia, these experiences provide an encouraging message. The country already possesses many of the key elements that supported implementation elsewhere, including an extensive network of *Puskesmas*, *Posyandu Lansia*, physiotherapists, community health workers, and strong community participation. Rather than reproducing the WFG as a fixed model of care, implementation should focus on translating its principles into delivery models that align with Indonesia's existing health system. In this context, adaptation should not be viewed as modifying

the recommendations themselves, but as determining how, by whom, and through which services those recommendations can be delivered effectively and sustainably.

Future Directions

As Indonesia's population continues to age, falls should be recognised as a public health priority rather than an inevitable consequence of ageing. While the country already has a strong primary healthcare network and community-based healthy ageing programmes, the next step is to integrate falls prevention more explicitly into routine care. The WFG provide a valuable evidence-based framework for achieving this goal. However, implementation should focus on adapting how the guideline is delivered by aligning its principles with Indonesia's existing healthcare infrastructure, workforce and available resources.

Figure 2 presents a conceptual framework for implementing the WFG in Indonesia. The framework proposes embedding routine falls screening, risk stratification, and evidence-based management within existing primary healthcare platforms, particularly *Puskesmas* and *Posyandu Lansia*. In this model, the WFG serves as the overarching clinical framework, while contextual adaptation determines how its recommendations are operationalised according to local workforce capacity, referral pathway and healthcare resources.

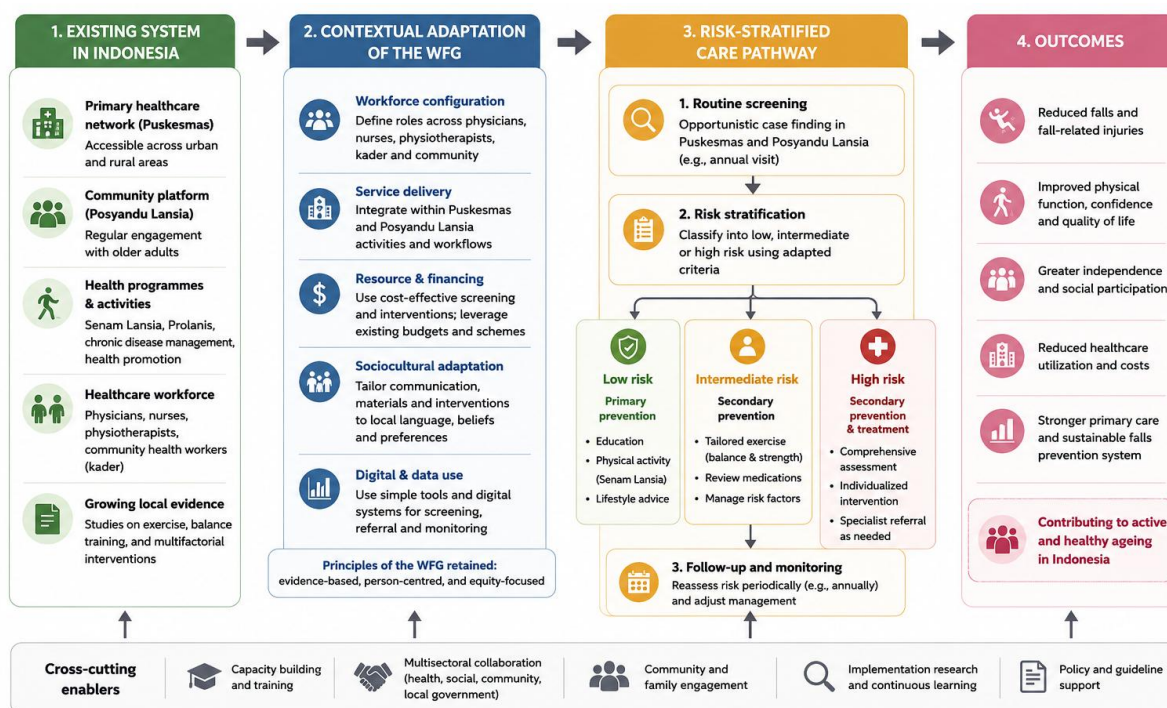


Figure 2. Proposed conceptual framework for contextual implementation of the World Falls Guidelines in Indonesia

Implementing this framework should be accompanied by a more strategic research agenda. Although falls research in Indonesia has grown in recent years, much of the evidence comes from small, single-centre studies that have provided valuable preliminary findings but have rarely progressed beyond individual projects. Future research should move towards a coordinated

programme of implementation research that progressively builds the evidence required for national adoption. This includes validating practical screening approaches, developing context-appropriate risk stratification pathways, adapting interventions for different risk groups, and evaluating implementation through existing platforms such as *Puskesmas* and *Posyandu Lansia*. Such an approach would generate cumulative evidence that not only strengthens clinical practice but also informs future policy and sustainable implementation of falls prevention across Indonesia.

Conclusion

Indonesia has many of the essential foundations needed to strengthen falls prevention. The challenge is how evidence-based falls prevention can become a routine part of healthy ageing services. The World Falls Guidelines provide a valuable framework for this transition, but their successful implementation will depend on thoughtful adaptation to Indonesia's healthcare system, available resources, and workforce capacity. By building on existing platforms while generating high-quality implementation research to support policy and practice, Indonesia has an opportunity to move beyond fragmented initiatives towards a coordinated approach to falls prevention that is both evidence-based and contextually relevant.

Author Contribution

All authors have accepted responsibility for the entire content of this manuscript and approved its submission.

Conflict of interest

Authors state no conflict of interest.

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