Post-Print Commentary on the 2022 World Guidelines for the Prevention and Management of Falls in Older Adults

Authors: Wu Yan, Wang Guangling, Nie Zuoting, Liang Wei, Du Yan, Li Qing, Zeng Kai, Chen Long, Gao Shiying, Tao Lu, Yang Rumei, Ding Yaping, Yang Rumei, Ding Yaping

Date: 2022-12-20T00:00:00+00:00

Abstract

As China enters a deeply aging society, falls and fall-related injuries among older adults have garnered widespread attention, with relevant research and guidelines continuously updated both domestically and internationally. The World Falls Prevention Guidelines Group, comprising 96 experts from 39 countries, developed the "World Guidelines for Falls Prevention and Management in Older Adults" in 2022. This guideline adopts a "person-centered" philosophy, fully considering the fall management needs of older adults as well as the perspectives of caregivers and other stakeholders regarding falls. It also considers the applicability of the guideline across various care settings and resource-limited regions, incorporates the latest evidence on applying e-health for fall prevention, provides new practical guidance recommendations for initial fall risk screening, fall risk assessment, and graded fall risk management for community-dwelling older adults, while simultaneously advocating physical activity and fall prevention for all older adults. This article will provide an in-depth interpretation of the guideline to offer practical guidance for healthcare workers and community workers in China in preventing and managing falls among older adults.

Full Text

Interpretation of the 2022 World Guidelines for Falls Prevention and Management for Older Adults

WU Yan[1], **WANG Guangling**[2], **NIE Zuoting**[1], **LIANG Wei**[1], **DU Yan**[3], **LI Qing**[4], **ZENG Kai**[5], **CHEN Long**[1], **GAO Shiying**[1], **TAO Lu**[1], **YANG Rumei**[1], ***DING Yaping***[1]

[1]School of Nursing, Nanjing Medical University, Nanjing 211166, China
[2]Department of Orthopedics, The First Affiliated Hospital of Nanjing Medical University, Nanjing 210029, China
[3]School of Nursing, UT Health San Antonio, San Antonio 78249, USA
[4]School of Nursing, University of Mississippi Medical Center, Jackson 39216, USA
[5]School of Nursing, Southern Medical University, Guangzhou 510515, China

Corresponding authors: YANG Rumei, Director of Nursing Humanities Department, Nanjing Medical University, Associate Professor, Email: rumeiyang@njmu.edu.cn; DING Yaping, Deputy Dean of School of Nursing, Nanjing Medical University, Associate Professor, Email: dingyp@njmu.edu.cn

Abstract

As China enters a deeply aging society, falls and fall-related injuries among older adults have garnered widespread attention, with domestic and international research and guidelines continuously evolving. In 2022, the World Falls Guidelines Task Force, comprising 96 experts from 39 countries, developed the *World Guidelines for Falls Prevention and Management for Older Adults*. Grounded in a person-centered approach, these guidelines fully consider the fall management needs of older adults and the perspectives of caregivers and other stakeholders, while addressing applicability across various care settings and resource-limited regions. Incorporating the latest evidence on e-health applications for fall prevention, the guidelines provide new practice recommendations for initial fall risk screening, comprehensive fall risk assessment, and stratified fall risk management among community-dwelling older adults, while promoting physical activity and fall prevention for all older adults. This article offers an in-depth interpretation of these guidelines to provide practical guidance for healthcare professionals and community workers in China on preventing and managing falls in older adults.

Keywords: older adults; falls; injury; prevention; management; guidelines; interpretation

---

Falls are a common adverse event among older adults. Globally, the incidence of falls among individuals aged 65 and older ranges from 28% to 35%, increasing to 32% to 42% among those aged 70 and above [1]. Falls and related injuries significantly impede healthy aging [2] and impose substantial economic burdens on families, society, and nations [3]. Consequently, there is an urgent global need for effective fall prevention strategies. In recent years, the person-centered approach has gained traction in fall prevention [4], emphasizing individualized multifactorial interventions that align with personal risk factors, preferences, and values to enhance adherence and ensure feasibility. To this end, 96 experts from 39 countries developed the *World Guidelines for Falls Prevention and Management for Older Adults* in September 2022, systematically considering

four key aspects: (1) a person-centered approach that incorporates perspectives of older adults with fall histories, caregivers, and other stakeholders; (2) fall risk factors and solutions across different care settings; (3) advances in e-health for fall prevention; and (4) implementation challenges in resource-limited regions (including low- and middle-income countries). The guidelines present a visual fall management flowchart [Figure 1: see original paper] to facilitate rapid and accurate risk assessment and stratified management. This article provides an in-depth interpretation to help Chinese healthcare and community workers learn and apply these guidelines to prevent falls among all older adults.

[Figure 1: see original paper]

1 Initial Fall Risk Screening

Rapidly understanding fall circumstances and identifying at-risk populations forms the foundation for addressing fall-related challenges. However, research shows that older adults often do not voluntarily report falls or may be reluctant to do so during healthcare encounters [6], leading clinicians to overlook fall risks. The guidelines therefore propose two approaches for quickly identifying fall risk based on how older adults present for care: opportunistic case finding and fall-related clinical encounters.

1.1 Opportunistic Case Finding

Opportunistic case finding involves healthcare professionals proactively asking older adults about falls during routine healthcare visits (evidence level: 1A) or reviewing electronic health records when available to identify fall history. This approach addresses the problem of unrecognized fall risk due to underreporting. The guidelines recommend using two types of screening questions based on clinical context: a single-item question ("Have you fallen in the past year?") and the Three Key Questions (3KQ). While the single-item question demonstrates high specificity and effectively predicts future fall risk, its low sensitivity may miss positive cases as it does not consider specific risk factors. Therefore, when resources permit, the guidelines recommend using the 3KQ to improve sensitivity: (1) Have you fallen in the past year? (2) Do you feel unsteady when standing or walking? (3) Are you worried about falling?

1.2 Fall-Related Clinical Encounters

Fall-related clinical encounters refer to situations where older adults seek medical attention due to a fall or fall-related injury, enabling healthcare professionals to identify risk. Research indicates this population faces up to a 70% risk of falling again within the following year. Healthcare professionals should therefore pay close attention to these individuals, conducting detailed assessments of consciousness loss, mobility impairment, and fear of falling (evidence level: E). This screening method applies to older adults presenting to emergency departments, community health services, home care settings, or those with acute

illness-related falls as determined by clinicians.

2 Fall Risk Assessment

Fall risk assessment involves determining risk levels based on fall severity and gait/balance impairment following initial screening, identifying specific risk factors to inform personalized management plans. For high-risk individuals, the guidelines recommend comprehensive multifactorial assessment.

2.1 Fall Risk Stratification

The guidelines classify older adults without a fall history as low risk. For those with fall histories, clinicians must identify high-risk individuals through fall severity assessment. High-risk status is established by any of five criteria: (1) fall-related injury requiring medical attention; (2) $ $2 falls in the past year; (3) frailty, assessed using the Frailty Phenotype (FP) or Clinical Frailty Scale (CFS); (4) inability to get up for $ $1 hour after a fall without assistance; or (5) transient loss of consciousness or suspected syncope (evidence level: E). This approach aligns with previous guidelines in using fall severity as a screening criterion, as severe falls (e.g., recurrent falls, injury-related falls) substantially increase future fall probability [7-8]. The 2022 version differs by incorporating frailty and syncope as high-risk criteria. Frailty, which affects a significant proportion of older adults and increases recurrent fall risk by 50% [9-10], is now included, though further research is needed to validate its preventive value. The rationale for including syncope, often associated with unexplained falls, requires additional theoretical and practical investigation.

For older adults without severe falls, gait and balance impairment assessment distinguishes medium from low risk. Evaluation methods include gait speed or the Timed Up and Go Test (TUG). Gait speed $ $0.8 m/s or TUG time >15 seconds indicates medium risk; otherwise, low risk. The guidelines note that current screening tools are ineffective for institutionalized older adults, as most in this population are high-risk and should receive multifactorial assessment and personalized interventions.

2.2 Multifactorial Fall Risk Assessment for High-Risk Older Adults

Falls in older adults result from multiple risk factors, particularly among high-risk individuals. The guidelines recommend comprehensive multifactorial assessment to inform individualized interventions (evidence level: 1B). This includes objective factors such as gait and balance, cognitive status, vision and hearing, cardiovascular conditions, dizziness and vestibular disorders, medications, and environment, as well as subjective factors like fear of falling, understanding of fall causes, and knowledge of prevention strategies [12]. By treating older adults as primary stakeholders in fall management, this approach embodies the person-centered philosophy. Table 1 provides recommended assessment modules.

The guidelines also identify that current hospital-based screening tools fail to effectively identify fall risk factors among inpatients [13], whereas multifactorial assessment provides comprehensive evaluation of potential risks. Therefore, when feasible, multifactorial assessment is recommended for hospitalized adults aged $ $65 (evidence level: 2B).

3 Stratified Fall Risk Management

Stratified management involves developing tailored interventions for different risk levels to enhance prevention effectiveness.

3.1 Management of Low-Risk Older Adults

Despite low-risk classification, these individuals still face approximately 30% annual fall probability [14, 15]. Management should focus on primary prevention through personalized physical activity recommendations and health education on reducing fall and fracture risks.

Physical activity' s effectiveness in reducing fall risk is well-established [14, 16]. The guidelines recommend regular exercise when safe and feasible, including 150-300 minutes of moderate-intensity or 75-150 minutes of vigorous-intensity activity weekly to prevent frailty, sarcopenia, and cardiovascular disease, thereby indirectly reducing fall risk. Traditional Chinese exercises like Tai Chi are encouraged to improve acceptability. The WHO recommends $ $3 days/week of balance and strength-focused moderate-to-vigorous activity plus $ $2 days/week of major muscle group strengthening [17] to maintain bone health and muscle strength. Specific programs should be tailored to individual capacity, preferences, environment, and resources, implemented through educational materials and group activities to foster habit formation.

3.2 Management of Medium-Risk Older Adults

Gait and balance impairment characterizes medium-risk older adults. Secondary prevention through personalized exercise interventions targeting balance, gait, and strength is recommended.

Exercise programs should focus on enhancing functional mobility, incorporating sit-to-stand, squat, and single-leg stance exercises. When safe, progressive loading or increased difficulty should be applied to maximize neuromuscular and skeletal benefits. Intervention intensity requires regular evaluation and adjustment to ensure sustained effectiveness. Healthcare professionals should reassess fall risk annually for medium- and low-risk individuals and modify interventions accordingly.

3.3 Management of High-Risk Older Adults

High-risk older adults experience severe fall injuries or multiple risk factors. Management should combine secondary prevention with active injury treatment

and personalized multifactorial interventions based on comprehensive assessment.

Embodying the person-centered approach, the guidelines recommend developing individualized multifactorial intervention plans that integrate older adults' and caregivers' perspectives, attitudes, and preferences to enhance adherence and effectiveness (Table 2 provides examples). The guidelines also update evidence on e-health technologies for fall interventions, suggesting their application in exercise training to improve engagement, though effectiveness in low- and middle-income countries remains unconfirmed. Given older adults' rapid health deterioration, close follow-up every 30-90 days is essential to monitor risk changes and adjust preventive and therapeutic measures.

4 Summary and Outlook

These guidelines update evidence on initial screening, assessment, and stratified management of fall risk, addressing previous gaps and providing crucial guidance for healthcare professionals, community workers, policymakers, and media in promoting physical activity and fall prevention.

Key strengths include: (1) consideration of care settings, specific diseases, and resource limitations; (2) emphasis on person-centered approaches that incorporate older adults' and stakeholders' perspectives; and (3) integration of e-health technologies, aligning with China' s "technology-enabled aging" and "smart wellness" initiatives. However, limitations exist: (1) expert consensus recommendations lack rigorous validation; (2) limited high-quality evidence on e-health applications; (3) insufficient detail on specific exercise parameters (type, intensity, duration, frequency); (4) unvalidated practical value of frailty and syncope as high-risk criteria; and (5) predominant reliance on Western evidence, creating discrepancies with Chinese clinical practices regarding assessment tools.

To implement the *Healthy China 2030* plan and *Healthy China Action (2019-2030)* requirements for fall prevention, the National Health Commission' s Disease Control Bureau commissioned the Chinese Center for Disease Control and Prevention's National Center for Chronic and Noncommunicable Disease Prevention and Control to organize expert development of the *Technical Guidelines for Fall Prevention and Control in Community-Dwelling Older Adults* in June 2020, published in 2021 [18]. This guideline provides important guidance for Chinese communities. Future research should prioritize high-quality randomized controlled trials to validate expert recommendations, generate e-health evidence, and develop culturally adapted fall prevention practices based on domestic evidence.

Author Contributions: WU Yan conceptualized and designed the study, collected relevant materials, and drafted and revised the manuscript. WANG Guangling and NIE Zuoting participated in material collection and manuscript drafting and revision. LIANG Wei, DU Yan, LI Qing, ZENG Kai, CHEN Long, GAO Shiying, and TAO LU contributed to manuscript drafting and revision. YANG

Rumei and DING Yaping oversaw quality control and final review, assuming overall responsibility and supervision.

Conflict of Interest Disclosure: All authors declare no competing interests.

References: [1] World Health Organization. WHO global report on falls prevention in older age[EB/OL]. (2008-03-17)[2022-11-09]. https://www.who.int/publications/i/item/9789241563 [2] World Health Organization. World report on ageing and health[R/OL]. (2015-09-29)[2022-11-09]. https://apps.who.int/iris/rest/bitstreams/835463/retrieve. [3] SARMIENTO K, LEE R. STEADI: CDC' s approach to make older adult fall prevention part of every primary care practice[J]. J Safety Res, 2017, 63. DOI: 105-109.10.1016/j.jsr.2017.08.003. [4] VERGHESE J. Person-centered fall risk awareness perspectives: Clinical correlates and fall risk[J]. J Am Geriatr Soc, 2016, 64(12). DOI: 2528-2532.10.1111/jgs.14375. [5] MONTERO-ODASSO M, VAN DER VELDE N, MARTIN F C, et al. World guidelines for falls prevention and management for older adults: A global initiative[J]. Age Ageing, 2022, 51(9). DOI: afac205.10.1093/ageing/afac205. [6] STEVENS J A, BALLESTEROS M F, MACK K A, et al. Gender differences in seeking care for falls in the aged medicare population[J]. Am J Prev Med, 2012, 43(1). DOI: 59-62.10.1016/j.amepre.2012.03.008. [7] KIM K I, JUNG H K, KIM C O, et al. Evidence-based guidelines for fall prevention in korea[J]. Korean J Intern Med, 2017, 32(1). DOI: 199-210.10.3904/kjim.2016.218. [8] PANEL ON PREVENTION OF FALLS IN OLDER PERSONS AMERICAN GERIATRICS SOCIETY AND BRITISH GERIATRICS SOCIETY. Summary of the updated American Geriatrics Society/British Geriatrics Society clinical practice guideline for prevention of falls in older persons[J]. J Am Geriatr Soc, 2011, 59(1). DOI: 148-157.10.1111/j.1532-5415.2010.03234.x. [9] DENT E, MORLEY J E, CRUZ-JENTOFT A J, et al. Physical frailty: ICFSR international clinical practice guidelines for identification and management[J]. J Nutr Health Aging, 2019, 23(9). DOI: 771-787.10.1007/s12603-019-1273-z. [10] CHU W, CHANG S F, HO H Y. Adverse health effects of frailty: systematic review and meta-analysis of middle-aged and older adults with implications for evidence-based practice[J]. Worldviews Evid Based Nurs, 2021, 18(4). DOI: 282-289.10.1111/wvn.12508. [11] PERELL K L, NELSON A, GOLDMAN R L, et al. Fall risk assessment measures: An analytic review[J]. J Gerontol A Biol Sci Med Sci, 2001, 56(12). DOI: M761-766.10.1093/gerona/56.12.m761. [12] COLLINS C E, CHANDRA A, NGUYEN B, et al. The rose-colored glasses of geriatric fall patients: Inconsistencies between knowledge of risk factors for and actual causes of falls[J]. Gerontol Geriatr Med, 2020, 6. DOI: 2333721420967884.10.1177/2333721420967884. [13] HAINES T P, HILL K, WALSH W, et al. Design-related bias in hospital fall risk screening tool predictive accuracy evaluations: Systematic review and meta-analysis[J]. J Gerontol A Biol Sci Med Sci, 2007, 62(6). DOI: 664-672.10.1093/gerona/62.6.664. [14] GANZ D A, LATHAM N K. Prevention of falls in community-dwelling older adults[J]. N Engl J Med, 2020, 382(8). DOI: 734-743.10.1056/NEJMcp1903252. [15] LAMB S E, MCCABE C, BECKER C, et al. The optimal sequence and selection of screening test items to predict fall risk in older disabled

women: The women' s health and aging study[J]. J Gerontol A Biol Sci Med Sci, 2008, 63(10). DOI: 1082-1088.10.1093/gerona/63.10.1082. [16] SHERRINGTON C, FAIRHALL N, KWOK W, et al. Evidence on physical activity and falls prevention for people aged 65+ years: Systematic review to inform the who guidelines on physical activity and sedentary behaviour[J]. Int J Behav Nutr Phys Act, 2020, 17(1). DOI: 144.10.1186/s12966-020-01041-3. [17] World Health Organization. WHO guidelines on physical activity and sedentary behaviour[EB/OL]. (2020-02-14)[2022-11-09]. https://www.who.int/publications/i/item/9789240015128. [18] National Center for Chronic and Noncommunicable Disease Control and Prevention of the Chinese Center for Disease Control and Prevention. The Center for Chronic Disease organized the compilation of Technical Guidelines of the Prevention and Control for community-dwelling older adults[EB/OL]. (2021-12-29)[2022-12-19]. https://ncncd.chinacdc.cn/zxdt/202112/t20211229_{255143}.htm.

Note: Figure translations are in progress. See original paper for figures.