

Featured Falls Research – June

Predictive accuracy of gait speed for falls: An individual participant data meta-analysis

Hicks C, Menant J, Allen N, Callisaya ML, Cameron ID, Cameron MH, Canning CG, Close J, Dean CM, Delbaere K, Gunn H, Henderson EJ, Hoang P, Latt MD, Menz HB, Merom D, Sherrington C, Srikanth V, Sturnieks DL, Taylor ME, Tiedemann A, Wettasinghe AH, Lord SR. Ageing Res Rev. 2026 Jun 19;120:103207.

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PMID: 42320833

Abstract

Background: Gait speed is included in the World Falls Guidelines (WFG) fall risk algorithm, yet its ability to discriminate fallers from non-fallers remains unclear. This individual participant data meta-analysis examined the discriminative ability of the WFG-recommended cut point (<0.8 m/s) and the performance of a higher cut point (<1.0 m/s) for predicting falls in community-dwelling older adults and clinical populations at elevated risk of falls.

Methods: Individual data from 28 studies with a quantitative measure of gait speed and at least three months of prospectively reported falls were analysed using modified Poisson regression and Negative Binomial regression, followed by random-effects meta-analyses.

Results: Eight studies involving community-dwelling older adults ($n = 3627$) and twenty studies involving clinical populations ($n = 3981$) were included. Walking at < 0.8 m/s was associated with increased risk of falling (Relative Risk: 1.27 (95%CI 1.17 - 1.38)) and fall rate (Incidence Rate Ratio: 1.54 (95%CI 1.34 - 1.77)). Diagnostic accuracy was modest (58%, specificity 77%, sensitivity 35%), with consistent findings across planned subgroup analyses for population, fall history, and sex. Analyses using the < 1.0 m/s cut point produced similar effect sizes and accuracy metrics but identified a larger proportion of fallers in both community-dwelling (30.1% vs. 8.7%) and clinical populations (66.9% vs. 46.0%) compared to the < 0.8 m/s cut point.

Conclusion: Slower gait speed is associated with an increased risk and rate of falling across both population groups, but discriminative accuracy is low. While the < 0.8 m/s threshold shows consistent associations, a < 1.0 m/s cut point may be more clinically useful in community-dwelling and clinical settings because it identifies more fallers.

Keywords: Accidental falls; Aged; Gait; Older people; Risk; Walking speed.

Adherence and effectiveness of multicomponent exercise fall prevention programmes across delivery formats in community-dwelling older adults: a systematic review and multilevel meta-analysis

Hua Y, Yang Y, Chen Y, Long H, Li E. Arch Gerontol Geriatr. 2026 Oct;149:106304.

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Abstract

Background: Multicomponent exercise is widely implemented for fall prevention in older adults, but the role of exercise adherence and delivery format in determining intervention effectiveness remains inadequately understood, particularly in analyses that account for within-study outcome dependence.

Methods: We searched five databases to 23 November 2025 for RCTs of multicomponent exercise in adults aged ≥ 60 years. Fall outcomes were synthesised using three-level random-effects meta-analysis and meta-regression, with adherence evaluated as continuous/categorical factors and as moderator alongside delivery format, accounting for within-study effect-size dependence.

Results: Forty-one publications were included, comprising 36 distinct cohorts and involving 20,202 participants. Multicomponent exercise programmes significantly reduced fall incidence (IRR = 0.776, 95% CI 0.641-0.939), risk of experiencing at least one fall (RR = 0.914, 95% CI 0.858-0.974), and fall-related injury incidence (IRR = 0.754, 95% CI 0.663-0.858). Programmes achieving adherence $\geq 75\%$ were independently associated with greater reductions in fall incidence (IRR = 0.501, 95% CI 0.336-0.747) and fall risk (RR = 0.821, 95% CI 0.697-0.967). Mean adherence was highest in combined individual and group delivery, lower in single-format programmes, though including a group component may enhance adherence.

Conclusions: Multicomponent exercise fall prevention programmes are effective for fall prevention in community-dwelling older adults, whereas evidence for their protective effects on fall-related injury outcomes remains limited. Adherence is an important factor influencing programme implementation and intervention effectiveness.

Keywords: Adherence; Delivery formats; Falls; Multicomponent exercise; Multilevel meta-analysis; Older adults; Systematic review.

Implementation of the Ironbark falls prevention program: a mixed methods process evaluation with Aboriginal communities

McKeon G, Knight Z, Ivers R, Coombes J, Jessup V, Delbaere K, Sherrington C, Tiedemann A, Hill AM, McCarthy L, Haynes B, Ryder C, Macniven R; Ironbark Investigator Group. Age Ageing. 2026 Jun 1;55(6):afag184.

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PMID: 42328810

Abstract

Background: Falls are a leading cause of injury and loss of independence among older Aboriginal people. The Ironbark program is a culturally co-designed, community-based fall prevention initiative, incorporating exercises and Yarning circles, a culturally grounded form of group discussion. This paper presents a process evaluation of the program, examining fidelity and key factors influencing implementation across settings.

Methods: Sixteen sites across two Australian states implemented the Ironbark Standing Strong and Tall program. Process data were collected from 15 sites through structured session observations and semi-structured interviews with exercise facilitators. Fidelity and dose were assessed quantitatively, with adherence scored using a summative checklist score. Qualitative data were thematically analysed and mapped onto the Consolidated Framework for Implementation Research (CFIR).

Results: The program was delivered with high fidelity to 117 participants with median adherence scores consistently above 80%. Sessions were implemented as planned, with strong participant engagement in both exercise and Yarning components. Key facilitators included Aboriginal leadership, trusted site managers, program flexibility and supportive service structures. Challenges included managing varying physical abilities, maintaining engagement over time and external disruptions (e.g. Coronavirus -19 pandemic, weather). Content repetition was noted as a barrier to sustained attendance by participants in later stages. Facilitators recommended additional training, mid-program assessments and access to site-collected data. Sustainability was linked to workforce capacity and securing ongoing funding, particularly to support Aboriginal staff and transport.

Conclusion: This process evaluation indicated that a culturally-relevant fall prevention program for older Aboriginal people can be implemented with fidelity across community settings. Findings provide practical guidance for exercise facilitators and on sustaining and expanding the Ironbark program and inform broader efforts to embed culturally safe, community-led health programs in routine practice.

Keywords: Aboriginal and Torres Strait Islander peoples; exercise; falls prevention; implementation; older adults; qualitative research.

Perturbation-Based Balance Training Reduces Falls and Fall Injuries in Older People: Insights on Mechanisms and Training Parameters From a Systematic Review

Sharma S, Szabo IZ, Danielsen MB, Andersen S, Nørgaard JE, Lord SR, Okubo Y, Jørgensen MG. J Am Med Dir Assoc. 2026 Jul 2;27(8):106316.

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PMID: 42391766

Abstract

Objectives: To evaluate the efficacy of perturbation-based balance training (PBT) in reducing falls, injurious falls, and fall risk factors in older adults.

Design: Systematic review and meta-analysis.

Setting and participants: Community-dwelling older adults (aged 65 years and older).

Methods: PubMed, CINAHL, EMBASE, and Cochrane databases were searched from inception to June 2024. Randomized controlled trials assessing the effects of PBT on falls or fall risk factors, including reactive balance via laboratory-induced perturbations, were included. Two reviewers independently screened studies and extracted data. Meta-analyses were conducted using a random-effects model, and certainty of evidence was assessed using the Grading of Recommendations Assessment, Development, and Evaluation approach.

Results: PBT significantly reduced fall rates by 23% (rate ratio, 0.77; 95% CI, 0.60-0.99; $I^2 = 57\%$, low certainty) and injurious falls by 24% (rate ratio, 0.76; 95% CI, 0.58-0.98; $I^2 = 0\%$) compared with controls. PBT improved reactive balance (eg, lab-induced falls) but had limited effects on other fall risk factors (eg, gait). In the dosage subgroup analysis, only PBT programs for at least 6 hours reduced falls by 33%.

Conclusions and implications: PBT reduces falls and related injuries, likely through enhanced reactive balance rather than physical improvements. While most PBT programs are low doses (~2 hours), higher doses (6+ hours) likely offer greater fall protection. Further high-quality trials using accessible PBT methods are required to inform policy and guideline development and support scalable implementation of PBT in fall-prevention strategies.

Keywords: Accidental falls; aged; independent living; postural balance; reactive balance training; risk factors.

Effect of exercise interventions on fear of falling in older adults: a systematic review and network meta-analysis of randomised controlled trials

Zhou L, Huang J, Wang C, Huang H, Wang C, Huang S, Yang R, Wang L, Lv L, Zhao S, Tao Y, Yang Y, Xu J, Zhang JE. Age Ageing. 2026 May 4;55(5):afag152.

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PMID: 42200479

Abstract

Background: Fear of falling increases the risk of falls and reduces quality of life in older adults. This systematic review and network meta-analysis compared the efficacy of different exercise interventions for reducing fear of falling and evaluated post-intervention sustainability.

Methods: Five electronic databases were searched from inception to 24 October 2025. Methodological quality of included studies was assessed using the Cochrane Risk of Bias tool (RoB 2.0). Intervention effectiveness was ranked by the surface under the cumulative ranking curve. Statistical analysis was performed using StataMP 17.

Results: A total of 69 randomised controlled trials were included. Based on the cognitive construct, mind-body exercise significantly reduced fear of falling (SMD = -1.09, 95% CI -1.88 to -0.31). Exergaming was effective only for interventions under 3 months and in community-dwelling populations ($P < .05$), while multicomponent exercise, balance training and resistance training showed limited effects ($P > .05$). Based on the emotional construct, mind-body exercise (SMD = -0.63, 95% CI -1.13 to -0.13), multicomponent exercise (SMD = -0.52, 95% CI -0.89 to -0.15) and exergaming (SMD = -0.61, 95% CI -1.16 to -0.06) reduced fear of falling; however, for interventions of 3 months or longer, only mind-body exercise remained effective ($P < .05$). Balance training and resistance training had limited effects ($P > .05$). Follow-up findings suggested that these effects were not sustained over time ($P > .05$).

Conclusion: Mind-body exercise consistently reduced fear of falling across both cognitive and emotional constructs, but these benefits were not maintained after the intervention ended.

Registration: The protocol was registered on PROSPERO (CRD420251156631).

Keywords: exercise therapy; fear of falling; network meta-analysis; older adults; systematic review.

Falls Research – June

Using case-mixes to understand health resource utilization trajectories among older adults at high risk of falls who received baseline geriatrician-based Falls Prevention Clinic care

Davis JC, Falck RS, Hsu CL, Khan K, Chan P, Ghag C, Jacova P, Madden K, Dian L, Rice J, Parmar N, Mitton C, Liu-Ambrose T. J Gerontol A Biol Sci Med Sci. 2026 Jun 6;81(7):glag146.

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Abstract

Background: We identified case-mixes among older adults at high risk of future falls, determined by longitudinal health resource utilization (HRU) cost trajectories, and examined baseline characteristics associated with these trajectories.

Methods: This descriptive secondary cohort analysis included 343 community-dwelling older adults at high risk of falls who participated in a randomized controlled trial. All participants received evidence-based falls prevention care at the Falls Prevention Clinic. The primary outcome was total healthcare resource utilization costs collected prospectively over 12 months using self-report questionnaires and monthly cost diaries. Case-mixes were identified using 12-month trajectories and latent class growth modeling. Baseline characteristics examined included intervention group, age, biological sex, cognitive function, and physical function.

Results: We identified 2 case-mixes. The "low-cost, stable" case-mix was characterized by low baseline HRU (~\$500 CAD) that remained stable over 12 months. The "low-cost, decreasing" case-mix had the lowest baseline HRU (<\$500 CAD) and decreased over 12 months. Biological sex modified the trajectories. Specifically, males in the "low-cost, stable" case-mix demonstrated decreased HRU over 12 months, whereas female HRU remained unchanged. In the "low-cost, decreasing" case-mix, female HRU decreased at a greater rate than male HRU.

Conclusions: Older adults at high risk of falls receiving Falls Prevention Clinic care demonstrated relatively low HRU characterized by stable and decreasing case-mixes. These findings provide descriptive insight into healthcare utilization patterns and may inform future evaluations of Falls Prevention Clinic models of care. These findings may assist future risk stratification and healthcare planning for older adults at elevated falls risk internationally. The trial was registered at clinicaltrials.gov ([NCT01029171](https://clinicaltrials.gov/ct2/show/study/NCT01029171); [NCT00323596](https://clinicaltrials.gov/ct2/show/study/NCT00323596)).

Keywords: Case-mix; Falls; Falls Prevention Clinic; Health resource utilization; Trajectory.

Exercise and nutritional interventions for sarcopenia-related fall prevention in older adults: An umbrella review

Dharmansyah D, Rahayuwati L, Pramukti I, Mutyara K. J Nutr Health Aging. 2026 Jun;30(6):100862.

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Abstract

Sarcopenia-progressive age-related loss of muscle mass and function-substantially elevates fall susceptibility among older adults. While exercise and nutritional interventions have been studied separately for either sarcopenia management or fall prevention, no comprehensive synthesis has evaluated the convergence of these evidence streams. This umbrella review aimed to synthesize and appraise evidence on exercise and nutritional interventions for sarcopenia management and fall prevention in older adults, examining where these evidence streams converge. Adhering to Joanna Briggs Institute (JBI) umbrella review methodology and PRISMA 2020 guidelines, three databases (Scopus, Web of Science, and PubMed/MEDLINE) were searched for systematic reviews and meta-analyses up to February 2026. Dual independent screening, data extraction, and quality assessment used the JBI Critical Appraisal Checklist. Primary study overlap was measured via Corrected Covered Area (CCA), and evidence certainty was evaluated using the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) framework. The protocol was prospectively registered on the Open Science Framework (<https://doi.org/10.17605/OSF.IO/T6YQ9>). From 2466 identified records across three databases, 1489 unique records were screened after duplicate removal, yielding 41 systematic reviews for assessment (37 in main synthesis at JBI ≥ 7 ; 41 in sensitivity analysis at JBI ≥ 4), encompassing approximately 4475 unique primary studies. The CCA was 0.66%, indicating slight overlap. Two convergent evidence streams emerged: (1) for sarcopenia outcomes, moderate-to-high certainty evidence demonstrated that combined exercise with protein supplementation (≥ 1.2 g/kg/day) yielded superior improvements in muscle mass (standardized mean difference [SMD] 0.22), handgrip strength (mean difference [MD] 4.19 kg), and physical performance; (2) for fall prevention outcomes, high-certainty evidence established that balance and multicomponent exercise reduced fall rates by 23-34% (rate ratios [RaR] 0.66-0.77). One meta-analysis of observational studies established the sarcopenia-falls association (odds ratio [OR] 1.60-1.89), providing the conceptual foundation linking these streams. Vitamin D supplementation (≥ 700 IU/day) reduced falls by 13% (risk ratio [RR] 0.87, moderate certainty). Convergent evidence supports integrated interventions combining resistance and balance training, protein optimization, and vitamin D supplementation for older adults with or at risk of sarcopenia who are also at fall risk, though direct evidence that sarcopenia reversal reduces fall incidence remains limited and requires further investigation.

Keywords: Exercise; Falls; Older adults; Protein supplementation; Sarcopenia; Umbrella review.

Evaluation of the Importance of Stopping Elderly Accidents, Deaths, and Injuries (STEADI)-Based Factors in Wearable Fall Risk Assessment: Secondary Data Analysis

Ghoreishi N, Ansah S, Lu J, Lu W, Moon S, Delgado F, Chen D. JMIR Mhealth Uhealth. 2026 Jun 9;14:e93877.

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PMID: 42263263

Abstract

Background: Falls among older adults are a growing and costly public health problem that often leads to mobility decline and loss of independence. Although clinical frameworks such as the Centers for Disease Control and Prevention's (CDC) Stopping Elderly Accidents, Deaths, and Injuries (STEADI) initiative recommend multifactor screening (gait, balance, strength, fear of falling, and fall history), most wearable fall risk assessment systems rely on a small set of risk factors (typically gait), which creates a gap between clinical practice and automated wearable assessment.

Objective: This study aims to evaluate the importance of STEADI-based fall risk factors and provide design guidance for clinically compatible wearable fall risk assessment systems.

Methods: We created a dataset of 24 older adults (10 low fall risk and 14 high fall risk) from a publicly available plantar pressure dataset of 48 participants by retaining only those with consistent fall risk labels based on both the Berg Balance Scale and the Timed Up and Go test. A total of 18 features were extracted to quantify gait, strength, balance, fear of falling, and fall history. Random forest (RF) models were trained with leave-one-subject-out cross-validation to assess fall risk. Importance of STEADI-based factors was assessed by two methods: (1) estimating Shapley Additive Explanations values based on a single RF model trained on all features; and (2) training 5 separate RF models, each on 1 STEADI factor category, and comparing their fall risk classification accuracies.

Results: In this secondary analysis, the RF model trained on all features achieved a subject-level accuracy of 87.53% (95% CI 75%-100%). Shapley Additive Explanations analysis identified the right foot flat phase ratio (fear of falling feature) as the highest-ranked feature, followed by maximum right forefoot ground reaction force (strength feature), whereas traditional gait features did not appear in the top 10. The 5 separate RF models trained on individual STEADI-based factor categories showed a similar trend in mean participant-level accuracy: fear of falling, 87.59% (95% CI 75%-100%); strength, 79.18% (95% CI 62.5%-95.83%); balance, 70.5% (95% CI 50%-87.5%); gait 70.81% (95% CI 54.17%-87.5%); and fall history 62.37% (95% CI 50%-75.1%). However, paired comparisons did not show statistically significant differences in accuracy between the gait model and the models trained on other factors.

Conclusions: These preliminary results show that commonly overlooked nongait factors are potentially as informative as gait, although clear superiority was not demonstrated in this dataset. The novel foot flat phase ratio ranked higher than all other evaluated features, which showed the value of domain knowledge-informed feature engineering. These preliminary findings indicate that nongait STEADI factors merit consideration in the design of wearable fall risk assessment systems.

Keywords: STEADI; Stopping Elderly Accidents, Deaths, and Injuries; fall risk assessment; fear of falling; older adults; smart insole; wearable sensors.

What Cardiopulmonary Rehabilitation Professionals Should Know About Fall and Fracture Prevention: A Narrative Review

Giangregorio LM. J Cardiopulm Rehabil Prev. 2026 Jul 1;46(4):234-243.

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PMID: 42262361

Abstract

Purpose: Fractures due to osteoporosis are common. Cardiovascular disease and osteoporosis share common risk factors (eg, age, smoking, high alcohol intake, diabetes). Some interventions used to treat cardiovascular disease or related risk factors could increase bone loss or fracture risk (eg, medications that increase fall risk, bariatric surgery-related weight loss). Thus, health care professionals delivering cardiopulmonary rehabilitation would benefit from understanding how to prevent falls and fractures.

Review methods: This narrative review will provide an overview of the evidence from clinical trials, meta-analyses, and guidelines related to exercise for fracture prevention and will provide practical tips for cardiopulmonary rehabilitation professionals on how to integrate fall and fracture prevention into assessment, education, and exercise prescription.

Summary: The cardiopulmonary rehabilitation setting represents an opportunity to identify people at risk of fragility fractures and implement strategies to reduce the risk of falls and fractures. Screen for fall and fracture risk using available guidelines, tools, and algorithms so that you can modify your approach to assessment and exercise prescription. Be aware of medications or comorbid health conditions that may increase fall and fracture risk. Emphasize the importance of resistance training for overall health and maintaining or increasing muscle and bone strength. There is very strong evidence that multicomponent exercise interventions that include balance and functional training can prevent falls, so recommend balance training exercises for all older adults. Take steps to tailor assessment and exercise prescription to minimize falls and fractures during cardiopulmonary rehabilitation sessions, and maximize improvements in balance, bone strength, and physical functioning.

Keywords: balance; bone; falls; fracture; osteoporosis; strength.

Multisystem predictors of dynamic gait stability across fall risk in older adults

Kulkarni A, Moghim N, Gore R, Banerjee S, Rhea CK, Samulski B. *Exp Gerontol.* 2026 Aug;221:113193.

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Abstract

Gait stability arises from interactions between physiological, cognitive, and psychological systems, yet these domains are often assessed in isolation. This study examined multisystem predictors of anteroposterior margin of stability during walking (MoS_{AP}) in community-dwelling older adults. Of 340 participants, 143 were retained after data quality screening (105 females; age: 70.8 ± 7.8 years). Participants completed the Physiological Profile Assessment (PPA), cognitive testing using Montreal Cognitive Assessment (MoCA), fear-of-falling evaluations using Modified Falls Efficacy Scale (MFES) and a biomechanical gait assessment during preferred and fast speeds. Participants were stratified into four PPA-based fall-risk groups: low, mild, moderate, and high risk. MoS_{AP} differed significantly across fall-risk groups at both preferred and fast walking speeds, indicating that dynamic stability varied by fall-risk severity and task demand. Principal component analysis reduced physiological, gait and cognitive variables, and PCA-based elastic-net models identified global and fall-risk-stratified predictors of MoS_{AP}. In global models, physiological, gait components and MFES were retained at preferred speed, whereas physiological, gait, MFES, and cognitive components were retained at fast speed. Stratified models showed risk- and speed-specific patterns. At preferred speed, physiological, gait, and MFES were most consistently retained, suggesting that habitual walking stability was associated primarily with sensorimotor, gait, and psychological factors. At fast speed, cognitive and psychological predictors were retained in mild- and moderate-risk groups, suggesting that increased walking demand may reveal additional cognitive and confidence-related associations. These findings suggest that MoS_{AP} reflects task- and risk-dependent multisystem associations in aging and may provide a clinically relevant biomechanical marker for fall-risk stratification.

Keywords: Aging; Dynamic gait stability; Fall-risk stratification; Margin of stability; Multisystem predictors; Physiological Profile Assessment; Principal component analysis.

Role of allied health professions in falls prevention for community-dwelling older adults: a scoping review

Lawton A, Tripodi N, Wospil R, Wright BM, Menz HB, Martin S, Bonanno DR, Linton C, Bastani A, Ross A, Thomas R, Corcoran D, McNamara T, Baxter D, Vaughan B, Lane R, Feehan J. BMJ Open. 2026 May 21;16(5):e113943.

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Abstract

Objective: Falls among community-dwelling older adults are prevalent and have serious individual, societal and economic consequences. Allied health professionals provide key falls prevention interventions yet their representation in current clinical practice guidelines is inconsistent. Increased recognition of allied health roles and delivering context-specific guidelines for falls care could help to address workforce gaps and optimise care approaches. This scoping review explored the roles of the allied health professions in falls prevention screening, assessment and intervention for community-dwelling older adults.

Design: Scoping review, using the Joanna Briggs Institute methodology for scoping reviews.

Data sources: PubMed, CINAHL, Scopus, Cochrane, Web of Science and Allied and Complementary Medicine Database databases. The initial search was completed in November 2023, with a secondary search performed in July 2025.

Eligibility criteria: Sources were eligible if they identified or described a specific role of at least one allied health professional in falls prevention care for older adults. No restrictions were placed on publication type or date. Study protocols and conference abstracts were excluded, and only English-language sources were included.

Data extraction and synthesis: ChatGPT-4o was used for initial data extraction. Authors then cross-checked and updated inaccuracies as required. A numerical descriptive analysis, and a qualitative content analysis were performed to answer the research questions.

Results: The search identified 442 relevant sources from 34 countries. The roles of 17 allied health professions in falls prevention for community-dwelling older adults were discussed. Screening, assessment and intervention roles were identified spanning medical, physical capacity, environmental, education and behavioural-psychological domains. Profession-specific interventions closely aligned with their primary scope of practice, and notable areas of overlap between professions were highlighted.

Conclusion: This review highlights the diverse and overlapping contributions of allied health professionals to falls prevention in community-dwelling older adults. Varying levels of evidence are available across the professions and evidence gaps were highlighted for smaller allied health professions, indicating a need for foundational research to substantiate their roles and facilitate their inclusion in future practice guidelines.

Calcium, vitamin D, or combined supplementation to prevent fractures and falls: systematic review and meta-analysis

Massé O, Mercurio CM, Dupuis S, Al Sahwi M, Arruda A, Dallaire G, Desforges K, Dugré N, Williamson D. BMJ. 2026 May 20;393:e088050.

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PMID: 42161415

Abstract

Objective: To assess the effect of calcium, vitamin D, or combined supplementation on fractures and falls in adults.

Design: Systematic review and meta-analysis.

Data sources: Trials included in systematic reviews from 2014, three databases (Medline, Embase, CENTRAL) to 19 February 2025, clinical trial registries, abstracts from scientific meetings, and references from included studies.

Eligibility criteria: Randomised controlled trials comparing calcium, vitamin D, or combined supplementation with placebo or no treatment in adults (≥ 18 years) not receiving drug treatment for osteoporosis.

Data extraction and synthesis: The primary outcome was the risk of any fracture. Secondary outcomes included the risk of hip fracture, non-vertebral fracture, vertebral fracture, and falling, as well as the total number of falls. Pairs of reviewers independently screened trials, extracted data, and assessed risk of bias using the second version of Cochrane's risk of bias tool. Findings were synthesised using random effects meta-analyses and appraised using Grading of Recommendations Assessment, Development and Evaluation, with application of thresholds for absolute effects considered important.

Results: This review included 69 trials involving 153 902 participants. Participants in most of the trials were community dwelling (87%) and not at high risk of fractures or falls (73%). For the primary outcome of any fracture, little to no effect was found from use of calcium supplements (11 trials, 9067 participants; risk ratio 0.91, 95% confidence interval 0.81 to 1.01; moderate certainty), vitamin D supplements (36 trials, 92 045 participants; 1.00, 0.95 to 1.06; high certainty), or combined supplementation (15 trials, 51 126 participants; 0.91, 0.84 to 0.99; high certainty). Calcium, vitamin D, or combined supplementation appeared to have little to no effect on other fracture and fall outcomes, based largely on moderate to high certainty of evidence. The findings remained robust after an extensive exploration of heterogeneity across multiple subgroup analyses. Evidence for high risk patients or those requiring residential care was limited for many outcomes for calcium monotherapy and for combined supplementation.

Conclusion: Based on absolute risk reductions and thresholds considered clinically meaningful, this review found little to no benefits from use of calcium, vitamin D, or combined supplementation on the prevention of fractures and falls.

Systematic review registration: PROSPERO CRD42023483915.

From evidence-based guidelines to practice: Using natural language processing to identify impactful interventions in falls prevention

Naik S, Wimalarathna H, Parousis A, Grinspun D. Int J Nurs Sci. 2026 Apr 20;13(3):299-306.

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PMID: 42266855

Abstract

Objectives: This study aimed to identify and characterize implementation strategies for falls prevention in long-term care (LTC) homes using natural language processing (NLP) with a focus on the Registered Nurses' Association of Ontario's (RNAO) *Preventing Falls and Reducing Injury from Falls (2017)* Best Practice Guideline (BPG).

Methods: A retrospective quality improvement study was conducted using narrative reports submitted to RNAO MyBPSO reporting system from 63 Ontario LTC homes (2017 to 2022). Free-text data describing implementation activities were analyzed using an NLP pipeline that included text preprocessing, tokenization, and keyword extraction using Rapid Automatic Keyword Extraction (RAKE). Extracted terms were aggregated into candidate themes and further analyzed using a lexicon-informed sentiment analysis approach adapted for clinical language. Themes were iteratively refined through a structured consensus process involving multidisciplinary experts. Inter-rater agreement was assessed using Cohen's kappa.

Results: A total of 153 reports generated 235 preliminary themes, which were refined through sentiment analysis and expert consensus into 10 themes. Commonly identified strategies included falls risk assessment, fall prevention strategies, risk factors of falls, care plan development, post-fall assessments, falls tools, fall documentation, education and training, huddles, organizational policies, rounding, reflecting substantial uptake of key BPG recommendations. Sentiment analysis demonstrated predominantly neutral or positive sentiments across implementation narratives, with variability indicating differences in implementation experience. Gaps were most evident in documentation, i.e., post-fall follow-up actions and policy-level strategies, suggesting opportunities to strengthen implementation fidelity.

Conclusions: The study identified a core set of frequently implemented falls prevention strategies in LTC settings. These findings provide actionable guidance for clinical practice by emphasizing the need to standardize risk screening and reassessment processes, strengthen post-fall evaluation and follow-up, improve documentation systems to support continuity of care, and implement ongoing, competency-based education for staff. Together, these targeted strategies can support more consistent translation of evidence-based guidelines into routine practice and enhance quality-improvement efforts in falls prevention in LTC settings.

Keywords: Artificial intelligence; Best practice guideline; Falls; Implementation science; Long-term care; Natural language processing; Nursing.

Fall-related injuries in older adult cancer survivors: a decade of racial disparities

Namoos A, Thomson N, Sheppard V, Aboutanos M. BMC Geriatr. 2026 Jun 15;26(1):842.

DOI: [10.1186/s12877-026-07780-5](https://doi.org/10.1186/s12877-026-07780-5)

PMID: 42298431

Abstract

Background: Fall related injuries are a clinically important survivorship concern among older adults with cancer because treatment related neuropathy, frailty, muscle weakness, bone loss, fatigue, and functional decline may increase injury vulnerability. Limited evidence has examined whether EHR documented fall related injury risk differs by race among older adult cancer survivors. This study assessed the incidence and prevalence of documented fall related injuries among older adult cancer survivors, with a focus on differences between Black and White cohorts.

Methods: We conducted a retrospective cohort study using deidentified EHR data from the TriNetX network at Virginia Commonwealth University Health System. The study included 19,370 cancer survivors aged 65 years and older between January 1, 2013, and December 31, 2023. Demographic characteristics, cancer history, and fall related injuries were identified using structured EHR data and ICD 10 diagnosis codes. Incidence proportion, prevalence, and incidence rate per person day were calculated. Comparative measures between Black and White cancer survivor cohorts included risk difference, risk ratio, odds ratio, 95% confidence intervals, Z values, and p values.

Results: Among 19,370 older adult cancer survivors, 7% experienced a new documented fall related injury, and 8% had any documented fall related injury during the study period. The incidence rate was 0.00005432 cases per person day. Black or African American survivors had a higher EHR documented fall related injury risk than White survivors, 4.915% versus 4.048%, with an absolute risk difference of 0.867%, 95% CI 0.199% to 1.534%, $p = 0.008$.

Discussion: Documented fall related injuries were common among older adult cancer survivors and increased with age. The observed higher documented injury risk among Black cancer survivors should be interpreted cautiously and not as evidence that race itself causes falls. Because this study captured EHR documented fall related injuries rather than all falls or self reported falls, the observed difference may reflect clinical risk, injury severity, healthcare utilization, survivorship care, structural factors, or documentation patterns.

Conclusions: EHR documented fall related injuries represent an important survivorship outcome among older adult cancer survivors. Future research should incorporate detailed clinical, functional, treatment related, and social risk data to clarify the mechanisms underlying observed racial differences and support equitable fall prevention strategies in oncology survivorship care.

Keywords: Black cancer survivors; Cancer survivorship; Electronic health records; Fall prevention; Fall related injuries; Geriatric oncology; Health equity; ICD 10; Older adults; Racial disparities; TriNetX; White cancer survivors.

Links between falls in hospitals and professional fulfilment, burnout, work environment and organisational culture: a scoping review

Nayak V, Pinheiro MB, Richards B, Pivotto LR, Sherrington C. BMC Health Serv Res. 2026 Jun 22.

DOI: [10.1186/s12913-026-14976-3](https://doi.org/10.1186/s12913-026-14976-3)

PMID: 42332668

Abstract

Background: Healthcare staff wellbeing is critical to deliver quality patient-centred care. Burnout, lack of professional fulfilment, poor work environment, and an unsupportive organisational culture - impact healthcare delivery. However, their relationship with hospital patient falls - a frequent adverse outcome remains underexplored.

Objective: This review aimed to: (1) map the evidence investigating the relationship between staff wellbeing concepts (burnout, professional fulfilment, work environment and organisational culture) and patient falls in hospitals; and (2) determine the extent of consideration of staff wellbeing in existing hospital falls prevention trials.

Methods: Review followed Joanna Briggs Institute methodology [1]. PubMed, MEDLINE, CINAHL, Embase and PsycINFO were searched from inception to July 2024. Cochrane database was searched to identify existing hospital falls prevention interventions trials. Studies mentioning at least one staff wellbeing concept, and patient falls were included.

Results: Of 11,358 records, 78 studies were included. Most were observational (n = 54), nurse-focused (n = 67), and in acute settings (n = 69). Twenty studies investigated association between staff wellbeing and patient falls- mostly cross-sectional (n = 18), only two longitudinal. Burnout was associated with increased falls; job satisfaction showed a protective role. Better work environment reduced falls. Organisational culture findings were mixed - group culture and better leadership reduced falls, while toxic leadership and development culture increased falls. Variability in definitions and measurement tools led to conceptual overlaps. No Cochrane trials considered staff wellbeing in fall prevention interventions.

Conclusion: Evidence linking staff wellbeing and patient falls is emerging but limited. Critical gaps include inconsistent conceptualisation, a lack of - longitudinal, multidisciplinary focused intervention research integrating these concepts. Embedding staff wellbeing into fall prevention strategies is essential.

Clinical trial registration number: Not applicable.

Keywords: Accidental falls; Burnout; Organisation culture; Professional; Professional fulfilment; Work environment.

Towards an integrated falls response service for Aotearoa New Zealand: occupational therapy and paramedicine in community care

Reid H, Williams C, Leonard A. N Z Med J. 2026 May 29;139(1635):18-28.

DOI: [10.26635/6965.7207](https://doi.org/10.26635/6965.7207)

PMID: 42208504

Abstract

Aim: This article extends on a previously published scoping review by describing the what and the how of a specialised, culturally responsive, joint early falls response service practice between occupational therapy and paramedics that could enhance falls management and prevention for older adults in Aotearoa New Zealand.

Methods: The research replicated a previous literature search, with critical refinements in search terms and criteria, to identify new or previously overlooked research. Research included was pulled apart to describe an overall model that could be utilised for a local context.

Results: Fourteen studies focussing on how occupational therapists and paramedics work together were used. Articles discussed rapid response, early response and hybrid models of service to assess patients and effectively prevent recurrent falls. Articles also included studies on effective falls management and prevention involving occupational therapists following a fall. Grey literature sourced included government reports and healthcare evaluations. These sources informed key considerations for developing a falls response service in Aotearoa New Zealand.

Conclusion: Investing in a rapid response, interprofessional service would enhance quality of life while easing pressure on emergency and long-term care. Cost-effective, community-based solutions present opportunities to support independence, dignity and wellbeing for an ageing population.

The cost-effectiveness of the stopping elderly accidents, deaths and injuries options randomised quality improvement trial to prevent falls among older adults

Rein DB, Peterson C, Brault MW, Lamuda PA, Hackney ME, Vaughan CP, Johnson Nd TM, Haddad YK; Emory STEADI Implementation Team. Age Ageing. 2026 Jun 1;55(6):afag141.

DOI: [10.1093/ageing/afag141](https://doi.org/10.1093/ageing/afag141)

PMID: 42315165

Abstract

Background: Stopping Elderly Accidents, Deaths, and Injuries (STEADI) Options was a randomized trial of a telemedicine implementation of the CDC's STEADI older adult fall prevention initiative implemented among adults ages 65 and older at increased risk for falls.

Methods: Using STEADI Options and published data, we simulated the intervention's cost-effectiveness as compared to standard of care from the healthcare payer's perspective, over a one-year time horizon with a 0% discount rate. Using an incremental net benefit (INB) framework we estimated cost-effectiveness assuming a baseline willingness-to-pay (WTP) of \$25 478 to prevent one medically treated fall and performed univariate and probabilistic sensitivity analyses.

Results: Cumulatively when compared to the control participants, those in the intervention cost - \$873 (95% U.I. -\$3839, \$2081) less, experienced fewer falls treated within the healthcare system - 0.037 (95% Confidence interval (C.I.), -0.090, 0.015), and fewer falls treated by other providers -0.007 (95% C.I. -0.070, 0.053). The intervention's INB of \$1995 (95% U.I. -\$2166, \$6118) per enrollee, was cost saving in 71.8% of simulations and cost-effective in 82.9% of simulations. Cost-effectiveness was insensitive to wide changes in the model's parameters, was cost-effective in 71.8% of simulations at a WTP of \$0 and 85.4% of simulations at a WTP of \$50 000.

Conclusion: Within the study cohort, the intervention was highly likely to be cost-effective. However, differences in medically treated falls and total healthcare costs were not statistically significant; therefore, we cannot rule out the possibility that the intervention had no impact.

Keywords: STEADI; cost-effectiveness; fall prevention; older adults; preventive care.

Vitamin D supplementation for fall prevention in nursing homes: Fall study in elderly people in Andalucía, Spain

Rivero JB, Escámez BC, Cruz JV, Domínguez LG, Franco CL, Rodríguez IPM, Mongil RL, Díaz NP, Gallego CC. Rev Esp Geriatr Gerontol. 2026 May-Jun;61(3):101807.

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PMID: 42235406

Abstract

Introduction: Falls in nursing home are a major problem, since risk factors for falls (such as muscular weakness, cognitive impairment, osteoporosis, balance and gait problems etc.) are more prevalent in this population than in community-dwelling individuals. Guidelines suggest that elderly people should be treated with vitamin D the whole year. In Nursing Homes vitamin D supplementation reduces falls, osteoporosis and respiratory infections, but it is undertreated in this environment. The main objective of this study was to see if there was any association between vitamin D supplementation and the frequency of falls in elderly people living in nursing homes in Andalucía, Spain. And, as a secondary objective, we wanted to see if there was association between the dosage of vitamin D and falls.

Methodology: This is a multicenter, observational, retrospective, cross-sectional, and analytic study with elderly individuals residing in nursing homes in 2023.

Results: 961 participants were included. Only 38.4% of the residents were receiving vitamin D supplementation. Most of them (60%) were taking cholecalciferol, 35% calcifediol, and only 5% were on combination of vitamin D with calcium. The supplement with the lowest association to falls was cholecalciferol (34.7%) (p value 0.05), and those residents taking cholecalciferol weekly were the ones with less falls (28.67%) (p value 0.02).

Conclusion: Nursing home residents were undertreated with vitamin D, the dosage with the lowest association with falls was cholecalciferol weekly

Keywords: Caídas; Falls; Fragilidad; Frailty; Nursing home; Residencia de ancianos/mayores; Vitamin D; Vitamina D.

e-Counseling for Fall Prevention in Older Adults: Scoping Review

Safarina L, Kosasih CE, Pramukti I, Nursjamsi N. JMIR Aging. 2026 May 26;9:e78444.

DOI: [10.2196/78444](https://doi.org/10.2196/78444)

PMID: 42190243

Abstract

Background: Falls are a major contributor to injury, disability, and mortality among older adults worldwide. Digital health-based e-counseling has emerged as a scalable strategy to support fall prevention by addressing physical, behavioral, and cognitive risk factors.

Objective: This scoping review aimed to map the scope, characteristics, and outcomes of e-counseling interventions for fall prevention among adults aged 60 years or older.

Methods: Guided by Arksey and O'Malley's framework and reported in accordance with PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews), we searched PubMed, ScienceDirect, CINAHL, and ProQuest for studies published between January 2019 and May 2025. Eligible studies evaluated digital or telehealth-based counseling interventions for fall prevention. Data were synthesized descriptively, and methodological quality was appraised using the Mixed Methods Appraisal Tool.

Results: A total of 13 studies were included, comprising randomized controlled trials, feasibility studies, qualitative research, and retrospective cohorts conducted across Asia, Europe, and North America. e-Counseling modalities included virtual reality, mobile health application, teleconsultations, and wearable-triggered feedback systems. Reported outcomes included reductions in fall incidence ranging from 15% to 90.9%, improvements in balance and mobility, increased fall risk awareness, and enhanced self-efficacy. Interventions incorporating cultural tailoring and digital literacy support demonstrated higher engagement and adherence.

Conclusions: e-Counseling appears to be a promising and scalable approach for fall prevention in older adults, with benefits across physical and behavioral domains. Future research should focus on long-term effectiveness, equitable access in low- and middle-income settings, and integration into routine health care systems.

Keywords: digital health; e-counseling; fall prevention; older adults; scoping review; telehealth.

Multidisciplinary approach to reducing falls for people with dementia on an older adult mental health ward

Sorlie C, Shields G, Connellan T, Addo N, Aurelio M. BMJ Open Qual. 2026 Jun 1;15(2):e003988.

DOI: [10.1136/bmjog-2025-003988](https://doi.org/10.1136/bmjog-2025-003988)

PMID: 42225373

Abstract

Background: Falls can present a significant cost to individuals, their loved ones and the healthcare system. People with dementia on inpatient wards are at increased risk of falls, making this an important patient safety issue.

Aim: The aim of the project was to reduce falls rate on an older adult mental health ward by 30% (from an average of 5.4 to 3.7 per 1000 occupied bed days) by September 2024.

Methods: Using quality improvement methodology, a multidisciplinary team tested interventions to enhance therapeutic engagement, strengthen supportive nursing observations, mitigate medication-related risks and improve the ward environment.

Results: The project surpassed its aim, reducing falls rate by 74% to 1.4 falls per 1000 occupied bed days.

Conclusions: This project demonstrated the importance of a multidisciplinary approach to falls reduction, as well as the value of employing Plan-Do-Study-Act methodology for rapid testing and learning.

Keywords: Dementia; Geriatrics; Mental health; Patient safety; Quality improvement.

Comparative effectiveness of exercise and cognitive interventions for fall prevention in older adults: a Bayesian network meta-analysis

Sun Z, Gao M, Mao D, Tian X, Shang Q. Public Health. 2026 Jul;256:106316.

DOI: [10.1016/j.puhe.2026.106316](https://doi.org/10.1016/j.puhe.2026.106316)

PMID: 42127654

Abstract

Objectives: To comparatively evaluate the effects of different exercise and cognitive interventions on fall prevention in older adults and to provide evidence-based guidance for clinical practice.

Study design: Bayesian network meta-analysis.

Methods: This study systematically searched PubMed, Embase, Web of Science, Cochrane Library, China National Knowledge Infrastructure (CNKI), and Wanfang Database up to December 27, 2025, to identify randomized controlled trials (RCTs) on exercise and cognitive interventions for fall prevention in older adults. Data analyses were conducted using R 4.4.3 and Stata 16.0, with intervention effects expressed as odds ratios (ORs) and 95% confidence intervals (CIs). The surface under the cumulative ranking curve (SUCRA) was used to rank the relative effectiveness of interventions.

Results: A total of 47 randomized controlled trials involving 12,384 participants were included. Compared with usual care, exercise combined with cognitive training (ECT; 8 trials, $n = 872$, OR = 0.42, 95% CI: 0.24-0.67), cognitive training (CT; 5 trials, $n = 549$, OR = 0.50, 95% CI: 0.24-0.97), mind-body exercise (MBE; 27 trials, $n = 3,078$, OR = 0.61, 95% CI: 0.43-0.87), and multimodal exercise (ME; 15 trials, $n = 2,280$, OR = 0.66, 95% CI: 0.51-0.85) all demonstrated significant fall prevention effects in older adults. SUCRA rankings indicated that ECT had the highest probability of being the most effective intervention (88.5%), followed by MBE (76.6%), CT (69.8%), and ME (61.2%).

Conclusion: This Bayesian network meta-analysis suggests that ECT may be the most effective intervention, with MBE, CT, and ME also showing benefits. The SUCRA rankings reflect probabilistic ordering rather than absolute effect sizes, and therefore should be interpreted with caution. Clinical interventions should be tailored to individual characteristics and functional needs.

Keywords: Cognitive intervention; Exercise intervention; Fall prevention; Network meta-analysis; Older adults.

Fall risk and its determinants among home-dwelling older adults: A multivariate logistic regression analysis

Tuncer O, Sakalli AA, Tekin N. Pak J Med Sci. 2026 Apr;42(4):1003-1011.

DOI: [10.12669/pjms.42.4.12475](https://doi.org/10.12669/pjms.42.4.12475)

PMID: 42257086

Abstract

Objectives: Older adults receiving home healthcare are at increased risk of falls due to environmental, nutritional, psychological, and functional vulnerabilities. Fear of falling (FoF) may further restrict activity and contribute to adverse outcomes. This study aimed to examine factors associated with fall history and FoF using multivariate logistic regression analysis.

Methods: A cross-sectional study was conducted among 320 older adults (≥ 65 years) receiving home healthcare at Izmir Bozyaka Training and Research Hospital between November 2023 and January 2024. Data were collected during home visits using validated tools: FRAIL Scale, Malnutrition Universal Screening Tool (MUST), Barthel Index, Itaki Fall Risk Scale, Six-Item Screener, Tinetti Balance and Gait Test, and Geriatric Depression Scale-Short Form (GDS-SF). Fall history and FoF were self-reported. Predictors were identified using multivariate logistic regression models.

Results: The mean age was 81.52 ± 7.57 years; 53.8% were female. Fall history and FoF were reported by 58.8% and 54.4%, respectively. Multivariate logistic regression analysis revealed that fall history was significantly predicted by environmental hazards (OR=37.37), age ≥ 80 (OR=2.60), high risk on Itaki (OR=12.15) and Tinetti (OR=5.44) scales, malnutrition risk (OR=4.64), and moderate/severe depression (OR=2.58). FoF was significantly associated with obesity (OR=5.84), calf circumference ≤ 31 cm (OR=3.55), environmental hazards (OR=8.90), malnutrition risk (OR=3.33), and moderate/severe depression (OR=3.66).

Conclusion: Falls and fear of falling in home-dwelling older adults are multifactorial issues predominantly driven by environmental safety and functional mobility. Comprehensive geriatric assessments, focusing on home environment modifications and nutritional support, are essential to reduce fall-related morbidity in this population. *Abbreviations:* BMI: Body mass index, CC: Calf circumference, FoF: Fear of Falling, GDS-SF: Geriatric Depression Scale-Short Form, HHS: Home Healthcare Service, MUST: Malnutrition Universal Screening Tool, SIS: Six Item Screener.

Keywords: Accidental falls; Fall prevention; Older people; Risk factors; Screening.

Adherence trajectories and predictors of digital balance exercise for fall prevention in community-living older people

van Schooten KS, Ambrens M, Lim ML, Sung R, Callisaya ML, Close JCT, Anstey KJ, Lord SR, Delbaere K. NPJ Digit Med. 2026 Jun 1.

DOI: [10.1038/s41746-026-02746-8](https://doi.org/10.1038/s41746-026-02746-8)

PMID: 42225838

Abstract

Long-term adherence to exercise delivered through digital health interventions is critical but remains a major challenge, particularly among older people. We pooled intervention-arm data from two randomised controlled trials in 511 community-living older people who participated in a home-based digital balance exercise programme for 52 weeks. Weekly adherence was automatically recorded and expressed as percentage of prescribed dose. Group-based trajectory modelling identified distinct trajectories of adherence and multinomial adaptive lasso regression examined cognitive, physical, demographic and psychological predictors of trajectory group membership. Eight adherence trajectories emerged: overachievers (3.9%), consistent adherers (8.2%), fluctuating adherers (23.1%), intermittent adherers (15.9%), late attrition (11.4%), steady decliners (18.4%), early attrition (14.9%), and non-adherers (4.3%). On average, participants achieved 56% of their prescribed dose. Executive function and standing balance predicted adherence trajectory group membership. Poor executive function was associated with high initial adherence followed by a steep decline, while poorer balance was associated with more sustained adherence. Demographic or general health variables did not significantly predict adherence trajectories. Adherence to digital exercise is a dynamic behaviour, shaped by behavioural capability rather than by age or comorbidities. These findings inform the design of adaptive digital interventions to promote long-term adherence to digital programmes among older people.

Analysis of factors associated with severity categories of fall-related injuries among inpatients at a tertiary grade A hospital in Zhejiang province from 2015 to 2025: a retrospective observational study

Wang X, Sun L, Quan L, Fan M, Wang Z. BMJ Open. 2026 Jun 8;16(6):e119277.

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PMID: 42259568

Abstract

Objectives: Understanding the factors associated with the severity categories of fall-related injuries and intervening on modifiable determinants can mitigate the risk of serious fall injuries, thereby enhancing patient safety, reducing length of hospital stay and alleviating the economic burden imposed by these injuries. This study aims to identify factors associated with the severity categories of fall-related injuries and to explore differences in the clinical characteristics of patients who sustain such injuries.

Design: A retrospective observational study.

Setting: A tertiary care hospital in Zhejiang Province, China.

Participants: This study included 1030 inpatient fall incidents that occurred between January 2015 and March 2025, drawn from the nursing adverse event reporting system.

Outcome measures: Based on the fall-related injury outcomes recorded in the nursing adverse event reporting system. Descriptive statistics were employed to analyse the current status of fall-related injuries. Univariable and multivariable analyses were conducted to explore factors associated with the severity categories of fall-related injuries.

Results: The incidence of fall-related injuries in this study was 60.6% and the incidence of serious fall injuries was 12.1%. Logistic regression analysis identified factors associated with the severity categories of fall-related injuries. The analysis revealed that patients aged ≥ 65 years (minor injuries OR=1.82; serious injuries OR=1.76), women (OR=1.59; 1.90), tripping falls (OR=3.94; 4.48), impact to the knee (OR=4.00) or trunk (OR=4.28; 5.34) and ambulatory status prior to the fall (OR=1.71; 1.97) were all associated with more severe fall injuries.

Conclusions: These findings underscore the need to strengthen fall and fall-related injury prevention efforts among inpatients, particularly among patients aged ≥ 65 years and women. Clinical professionals should prioritise protecting high-risk populations through fall prevention and control to reduce the risk of fall-related injuries.

Keywords: GERIATRIC MEDICINE; Health & safety; Hospitalization; Nursing Care.

Multi-dimensional integrated dance therapeutics (MIDT) for fall prevention in community-dwelling older adults

Wu CST, Yim VWC, Kwok CY. Front Public Health. 2026 May 29;14:1780671.

DOI: [10.3389/fpubh.2026.1780671](https://doi.org/10.3389/fpubh.2026.1780671)

PMID: 42293637

Abstract

Introduction: Recent studies advocate for dance interventions that address the physical and psychological factors associated with fall risk. The multi-dimensional integrated dance therapeutics (MIDT) program engages participants in physical, psychological, and environmental interactions within a single dance therapeutics framework, rather than focusing solely on balance, strength, or mobility outcomes; it therefore promotes an integrated approach for fall prevention among community-dwelling older individuals. With the increase in the aging population, there is a growing demand for developing an integrated framework for fall risk reduction in the community.

Aim: This study aims to examine the significant impacts of MIDT on four health outcomes: balance, mobility, fear of falling, and state of well-being.

Methods: A quasi-experimental study without a control group was conducted to examine the effects of the MIDT program on paired dependent groups. Physical health outcomes were assessed using the unipedal stance test (balance) and the Timed Up and Go (TUG; mobility) test. Psychological outcomes, including fear of falling and state of well-being, were measured using the Fear of Falling Questionnaire - Revised (FFQ-R) and the 5-Item World Health Organization Well-Being Index (WHO-5), respectively. The MIDT program consisted of twelve 1.5-h sessions that included cognitive learning of fall and fall prevention concepts, core muscle strengthening exercises, dynamic balance training, body-mind intervention techniques, fall response training, and interaction with the environment.

Results: A sample of 46 older adults was recruited from two community centers from February to May 2024. Significant positive changes were observed in both physical and psychological outcomes.

Discussion: The findings contribute to the theoretical understanding of fall prevention practices. The positive outcomes demonstrate the efficacy of the MIDT program in fall prevention.

Conclusion: This study generates new knowledge and contributes to the development of integrated fall prevention practices for community-dwelling older adults. A multi-dimensional integrated approach incorporating fall response training and interaction with the environment, in addition to strengthening physical outcomes, is recommended.

Keywords: community-dwelling older adults; dance therapeutics; fall prevention; fall risk; multi-dimensional health outcomes; physical; psychological; state of well-being.

Sociodemographic factors shaping knowledge-attitude-behaviour pathways in postpartum fall prevention

Yang L, Xu L. J Obstet Gynaecol. 2026 Dec;46(1):2678173.

DOI: [10.3389/fpubh.2026.1780671](https://doi.org/10.3389/fpubh.2026.1780671)

PMID: 42334966

Abstract

Background: Postpartum falls threaten maternal and infant safety, yet evidence on postpartum women's fall-prevention knowledge, attitude, and behaviour (KAB) and their sociodemographic correlates remains limited. This study examined postpartum fall-prevention KAB and associations among KAB dimensions and in-hospital fall occurrence.

Methods: In this cross-sectional study, 1,220 postpartum women from a tertiary hospital in Chengdu, China, completed a general questionnaire and a self-developed Postpartum Fall Prevention KAB Scale (Cronbach's $\alpha = 0.926$). Multivariable linear regression examined associations of maternal education, companion education, and residence with KAB scores. Structural equation modelling examined associations among knowledge, attitude, behaviour, and in-hospital fall occurrence.

Results: Higher maternal education was associated with higher knowledge ($B = 0.22$, 95% CI 0.06 to 0.38; $p = 0.009$), attitude ($B = 0.23$, 95% CI 0.02 to 0.43; $p = 0.030$), and behaviour scores ($B = 0.57$, 95% CI 0.02 to 1.11; $p = 0.044$). Residence was associated with attitude score ($B = 0.77$, 95% CI 0.13 to 1.41; $p = 0.020$), but not with knowledge or behaviour. Companion education was associated with behaviour score ($B = -0.67$, 95% CI -1.15 to -0.20; $p = 0.005$), but not with knowledge or attitude. In the structural model, knowledge was associated with attitude (estimate = 0.289, 95% CI 0.206 to 0.379; $p < 0.001$) and behaviour (estimate = 0.663, 95% CI 0.455 to 0.908; $p < 0.001$), and attitude was associated with behaviour (estimate = 0.471, 95% CI 0.304 to 0.634; $p < 0.001$). behaviour was not associated with in-hospital fall occurrence (estimate = 0.001, 95% CI -0.001 to 0.002; $p = 0.506$).

Conclusions: Maternal education, residence, and companion education were associated with postpartum fall-prevention KAB scores. The findings support associations broadly consistent with the KAB framework, but causality cannot be inferred. Tailored fall-prevention education should be evaluated in longitudinal, multi-centre studies.

Keywords: Attitudes; Education; Falls; Knowledge; Postpartum; behaviour.