

DOACs for older adults with atrial fibrillation and falls: results from the prospective single-centre DOAFF study

Catalani F, Patetta LMA, Campello E, Fino R, Novello S, Occhipinti G, Zanforlini BM, Simioni P, Sergi G. *Thromb. Res.* 2024; 238: 78-84.

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Abstract

INTRODUCTION: Falls are one of the most fearsome events in anticoagulated older adults. The evidence concerning safety of direct oral anticoagulants (DOACs) in falling elderly patients with atrial fibrillation (AF) is still limited.

METHODS: We prospectively enrolled consecutive anticoagulant-naïve patients aged 65 years and older, starting anticoagulation with DOACs for AF. The study cohort was stratified in fallers vs. non-fallers, according to the occurrence of at least one fall during the 2-year follow-up and bleeding outcomes were evaluated.

RESULTS: We enrolled 524 consecutive patients. Mean age was 80.8 years and they were mostly women (54.0%). Among the study cohort, 148 patients (28.2%) presented at least one fall episode during the study period. After the adjustment for potential confounders, no difference was found between fallers and non-fallers for all the study outcomes: major bleeding [HR: 1.04 (95%CI: 0.58-1.85)], intracranial haemorrhage [HR: 1.63 (95%CI: 0.69-3.80)], clinically relevant non-major bleeding [HR: 1.21 (95%CI: 0.83-1.76)], and all-cause death [HR: 1.51 (95%CI: 0.85-2.69)]. The presence of a prior cerebrovascular event [HR: 2.27 (95%CI: 1.12-4.62); p-value: 0.02] and polypharmacy [HR: 1.60 (95%CI: 1.08-2.39); p-value: 0.02] were the main drivers for major and clinically relevant non-major bleedings, respectively.

CONCLUSIONS: Falls in an anticoagulant-naïve population aged 65 years and over starting a DOAC for AF do not increase the bleeding risk. Thus, the presence of falls should not discourage clinicians from prescribing DOACs also in this subset of patients.

Language: en

Keywords: Atrial fibrillation; Bleeding; DOACs; Elderly; Falls; Heart disease

Epidemiology of accidental injuries at home and related risk factors for mortality among older adults in South Korea: a retrospective cohort study

Cho OH, Yoon J. *Medicina (Lithuania)* 2024; 60(4): e593.

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Abstract

Background and Objectives: Accidental home injuries among older adults are increasing globally, but reporting is limited. This study aims to establish foundational data for program development and policies to prevent accidental injuries at home in older adults by using data on the occurrence of accidental injuries at home and analyzing the risk factors of mortality due to accidental injuries among adults aged 65 years and older.

MATERIALS AND METHODS: This retrospective study used data from the community-based Severe Trauma Survey in South Korea. This study identified general, injury-related, and treatment-related characteristics of older adults who were transported to the emergency department with accidental injuries at home. Single-variable and multiple logistic regression analyses were used to identify risk factors for mortality after injury.

RESULTS: The majority of older adults in this study who experienced accidental injuries at home were aged 75 to 84 (42.8%) and female (52.8%), with 1465 injured from falls and slips (68.0%). Risk factors for mortality included older age (≥ 85 years) (ORs 2.25, 95% CI 1.47-3.45), male sex (ORs 1.60, 95% CI 1.15-2.20), mechanism of injury (falls or slips vs. contact injury, ORs 6.76, 95% CI 3.39-13.47; airway obstruction vs. contact injury, ORs 13.96, 95% CI 6.35-30.71), higher severity (moderate vs. mild, ORs 2.56, 95% CI 1.45-4.54; severe vs. mild, ORs 12.24, 95% CI 6.48-23.12; very severe vs. mild, ORs 67.95, 95% CI 38.86-118.81), and receiving a blood transfusion (ORs 2.14, 95% CI 1.24-3.67).

CONCLUSIONS: Based on these findings, the home and community environments where older adults live should be inspected and monitored, and in-home accidental injury prevention strategies should be developed tailored to the characteristics of older adults' risk factors and their injury-related characteristics.

Language: en

Keywords: *Accidental Injuries/epidemiology/mortality; Accidental Falls/statistics & numerical data/mortality; Accidents, Home/statistics & numerical data/mortality; Aged; Aged, 80 and over; Cohort Studies; elderly; Female; home accidents; Humans; injuries; Logistic Models; Male; mortality; Republic of Korea/epidemiology; Retrospective Studies; Risk Factors

Associations between monitor-independent movement summary (MIMS) and fall risk appraisal combining fear of falling and physiological fall risk in community-dwelling older adults

Choudhury R, Park JH, Banarjee C, Coca MG, Fukuda DH, Xie R, Stout JR, Thiamwong L. *Front. Aging* 2024; 5: e1284694.

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Abstract

INTRODUCTION: Fall Risk Appraisal (FRA), a process that integrates perceived and objective fall risk measures, serves as a crucial component for understanding the incongruence between fear of falling (FOF) and physiological fall risk in older adults. Despite its importance, scant research has been undertaken to investigate how habitual physical activity (PA) levels, quantified in Monitor-Independent Movement Summary (MIMS), vary across FRA categories. MIMS is a device-independent acceleration summary metric that helps standardize data analysis across studies by accounting for discrepancies in raw data among research-grade and consumer devices.

OBJECTIVE: This cross-sectional study explores the associations between MIMS (volume and intensity) and FRA in a sample of older adults in the United States.

METHODS: We assessed FOF (Short Falls Efficacy Scale-International), physiological fall risk (balance: BTrackS Balance, leg strength: 30-s sit-to-stand test) and 7-day free-living PA (ActiGraph GT9X) in 178 community-dwelling older adults. PA volume was summarized as average daily MIMS (MIMS/day). PA intensity was calculated as peak 30-min MIMS (average of highest 30 non-consecutive MIMS minutes/day), representing a PA index of higher-intensity epochs. FRA categorized participants into following four groups: Rational (low FOF-low physiological fall risk), Irrational (high FOF-low physiological fall risk), Incongruent (low FOF-high physiological fall risk) and Congruent (high FOF-high physiological fall risk).

RESULTS: Compared to rational group, average MIMS/day and peak 30-min MIMS were, respectively, 15.8% ($p = .025$) and 14.0% ($p = .004$) lower in irrational group, and 16.6% ($p = .013$) and 17.5% ($p < .001$) lower in congruent group. No significant differences were detected between incongruent and rational groups. Multiple regression analyses showed that, after adjusting for age, gender, and BMI (reference: rational), only irrational FRA was significantly associated with lower PA volume ($\beta = -1,452.8$ MIMS/day, $p = .034$); whereas irrational and congruent FRAs were significantly associated with lower "peak PA intensity" (irrational: $\beta = -5.40$ MIMS/day, $p = .007$; congruent: $\beta = -5.43$ MIMS/day, $p = .004$).

CONCLUSION: These findings highlight that FOF is a significant barrier for older adults to participate in high-intensity PA, regardless of their balance and strength. Therefore, PA programs for older adults should develop tailored intervention strategies (cognitive reframing, balance and strength exercises, or both) based on an individual's FOF and physiological fall risk.

Language: en

Keywords: accelerometry; aging; fall risk; falls; fear of falling; MIMS; physical activity

The applications of artificial intelligence for assessing fall risk: systematic review

González-Castro A, Leiros-Rodríguez R, Prada-García C, Benítez-Andrades JA. J. Med. Internet. Res. 2024; 26: e54934.

(Copyright © 2024, Centre for Global eHealth Innovation)

DOI: 10.2196/54934

PMID: 38684088

Abstract

BACKGROUND: Falls and their consequences are a serious public health problem worldwide. Each year, 37.3 million falls requiring medical attention occur. Therefore, the analysis of fall risk is of great importance for prevention. Artificial intelligence (AI) represents an innovative tool for creating predictive statistical models of fall risk through data analysis.

OBJECTIVE: The aim of this review was to analyze the available evidence on the applications of AI in the analysis of data related to postural control and fall risk.

METHODS: A literature search was conducted in 6 databases with the following inclusion criteria: the articles had to be published within the last 5 years (from 2018 to 2024), they had to apply some method of AI, AI analyses had to be applied to data from samples consisting of humans, and the analyzed sample had to consist of individuals with independent walking with or without the assistance of external orthopedic devices.

RESULTS: We obtained a total of 3858 articles, of which 22 were finally selected. Data extraction for subsequent analysis varied in the different studies: 82% (18/22) of them extracted data through tests or functional assessments, and the remaining 18% (4/22) of them extracted through existing medical records. Different AI techniques were used throughout the articles. All the research included in the review obtained accuracy values of >70% in the predictive models obtained through AI.

CONCLUSIONS: The use of AI proves to be a valuable tool for creating predictive models of fall risk. The use of this tool could have a significant socioeconomic impact as it enables the development of low-cost predictive models with a high level of accuracy. TRIAL

REGISTRATION: PROSPERO CRD42023443277; <https://tinyurl.com/4sb72ssv>.

Language: en

Keywords: *Accidental Falls/prevention & control; *Artificial Intelligence; accidental falls; AI; artificial intelligence; fall risk; Humans; machine learning; patient care; Postural Balance; public health; Risk Assessment/methods

Comment on 'Effects of multicomponent exercise on the muscle strength, muscle endurance and balance of frail older adults: a meta-analysis of randomised controlled trials' [letter]

Han L, Hu P, Kuang W, Zhang S. *J. Clin. Nurs.* 2024; ePub(ePub): ePub.

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Abstract

[Abstract unavailable]

Language: en

The relationship between participation in leisure activities and incidence of falls in residential aged care

Huang G, Wabe N, Raban MZ, Silva SSM, Seaman K, Nguyen AD, Meulenbroeks I, Westbrook JI. PLoS One 2024; 19(4): e0302678.

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PMID: 38662707

Abstract

BACKGROUND: Active engagement in leisure activities has positive effects on individuals' health outcomes and social functioning; however, there is limited understanding of the link between participation in leisure activities, particularly non-exercise activities, and falls in older adults. This study aimed to determine the relationship between participation in leisure activities and the incidence of falls, and the variation of this relationship by dementia status in residential aged care facilities (RACFs).

METHODS: A retrospective longitudinal cohort study utilising routinely collected data (January 2021-August 2022) from 25 RACFs in Sydney, Australia, was conducted. The cohort included 3,024 older permanent residents (1,493 with dementia and 1,531 without) aged ≥ 65 and with a stay of ≥ 1 week. The level of participation in leisure activities was measured using the number of leisure activities per 1,000 resident days and divided into quartiles. Outcome measures were the incidence rate of all falls and injurious falls (i.e., number of falls per 1,000 resident days). We used multilevel negative binary regression to examine the relationship between leisure participation and fall incidence.

RESULTS: For the whole sample, leisure participation was significantly inversely associated with the incidence rate of all falls and injurious falls. For example, residents in the high leisure participation group were 26% less likely to experience a fall compared to those in the low leisure participation group after controlling for confounders (incidence rate ratio = 0.74, 95% confidence interval = 0.60, 0.91). Such inverse relationship was observed in both exercise and non-exercise activities and was stronger among residents without dementia.

CONCLUSIONS: Leisure participation is associated with a lower rate of falls, a key quality indicator by which RACFs are benchmarked and funded in Australia and many other countries. More recognition and attention are needed for the currently underfunded leisure activities in RACFs in future funding arrangement.

Language: en

Keywords: *Accidental Falls/statistics & numerical data; *Leisure Activities; Aged; Aged, 80 and over; Australia/epidemiology; Dementia/epidemiology; Female; Homes for the Aged; Humans; Incidence; Longitudinal Studies; Male; Retrospective Studies

Association of average daily morphine milligram equivalents and falls in older adult chronic opioid users

Hwang S, Hughes TD, Niznik J, Ferreri SP. *Pharmacy (Basel)* 2024; 12(2): e62.

(Copyright © 2024, MDPI: Multidisciplinary Digital Publishing Institute)

DOI: 10.3390/pharmacy12020062

PMID: 38668088

Abstract

Opioids remain commonly prescribed in older adults, despite the known association with falls and fall-related injuries. This retrospective cohort study sought to determine the association of opioid use and falls in older adult opioid users. Using a one-year lookback period in electronic health records, daily morphine milligram equivalents (MMEs) were calculated using prescription orders. Fall history was based on patient self-reporting. A receiver operating characteristic (ROC) curve was used to identify the threshold of average daily MMEs at which the likelihood of falls was increased. Older opioid users were most often women and White, with 30% having fallen in the prior year. In ROC analyses ($n = 590$), the threshold where fall risk increased was 37 MMEs ($p = 0.07$). Older adults prescribed more than 37 MMEs daily may be at increased fall risk and should be targeted for deprescribing interventions. Additionally, analysis on patient characteristics and covariates suggest that sex, age, COPD, sleep apnea, cancer, and psychiatric conditions may indicate an increased risk of falls in older adults taking chronic opioids ($p < 0.05$). Multifactorial interventions may be needed to modify fall risk beyond medication use alone.

Language: en

Keywords: falls; morphine milligram equivalent; older adults; opioids

An Emergency Department-based system intervention to improve osteoporosis screening for older adults at high-risk of fracture

Jackson LE, Skains RM, Mudano A, Techarukpong N, Booth JS, Saag KG, Fraenkel L, Danila MI. *JBMR Plus* 2024; 8(5): ziae038.

(Copyright © 2024, John Wiley and Sons)

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PMID: 38681999

PMCID: PMC11055962

Abstract

Falls and osteoporosis are risk factors for fragility fractures. Bone mineral density (BMD) assessment is associated with better preventative osteoporosis care, but it is underutilized by those at high fracture risk. We created a novel electronic medical record (EMR) alert-driven protocol to screen patients in the Emergency Department (ED) for fracture risk and tested its feasibility and effectiveness in generating and completing referrals for outpatient BMD testing after discharge. The EMR alert was configured in 2 tertiary-care EDs and triggered by the term "fall" in the chief complaint, age (≥ 65 years for women, ≥ 70 years for men), and high fall risk (Morse score ≥ 45). The alert electronically notified ED study staff of potentially eligible patients. Participants received osteoporosis screening education and had BMD testing ordered. From November 15, 2020 to December 4, 2021, there were 2,608 EMR alerts among 2,509 patients. We identified 558 patients at high-risk of fracture who were screened for BMD testing referral. Participants were excluded for: serious illness (N = 141), no documented health insurance to cover BMD testing (N = 97), prior BMD testing/recent osteoporosis care (N = 58), research assistant unavailable to enroll (N = 53), concomitant fracture (N = 43), bedridden status (N = 38), chief complaint of fall documented in error (N = 38), long-term care residence (N = 34), participation refusal (N = 32), or hospitalization (N = 3). Of the 16 participants who had BMD testing ordered, 7 scheduled and 5 completed BMD testing. EMR alerts can help identify subpopulations who may benefit from osteoporosis screening, but there are significant barriers to identifying eligible and willing patients for screening in the ED. In our study targeting an innovative venue for osteoporosis care delivery, only about 1% of patients at high-risk of fracture scheduled BMD testing after an ED visit. Adequate resources during and after an ED visit are needed to ensure that older adults participate in preventative osteoporosis care.

Language: en

Keywords: DXA; fracture prevention; fracture risk assessment; osteoporosis; screening

Multimodal fall detection for solitary individuals based on audio-video decision fusion processing

Jiao S, Li G, Zhang G, Zhou J, Li J. *Heliyon* 2024; 10(8): e29596.

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PMCID: PMC11053201

Abstract

Falls often pose significant safety risks to solitary individuals, especially the elderly. Implementing a fast and efficient fall detection system is an effective strategy to address this hidden danger. We propose a multimodal method based on audio and video. On the basis of using non-intrusive equipment, it reduces to a certain extent the false negative situation that the most commonly used video-based methods may face due to insufficient lighting conditions, exceeding the monitoring range, etc. Therefore, in the foreseeable future, methods based on audio and video fusion are expected to become the best solution for fall detection. Specifically, this article outlines the following methodology: the video-based model utilizes YOLOv7-Pose to extract key skeleton joints, which are then fed into a two stream Spatial Temporal Graph Convolutional Network (ST-GCN) for classification. Meanwhile, the audio-based model employs log-scaled mel spectrograms to capture different features, which are processed through the MobileNetV2 architecture for detection. The final decision fusion of the two results is achieved through linear weighting and Dempster-Shafer (D-S) theory. After evaluation, our multimodal fall detection method significantly outperforms the single modality method, especially the evaluation metric sensitivity increased from 81.67% in single video modality to 96.67% (linear weighting) and 97.50% (D-S theory), which emphasizing the effectiveness of integrating video and audio data to achieve more powerful and reliable fall detection in complex and diverse daily life environments.

Language: en

Keywords: Audio-video fusion; Fall detection; Multimodal analysis; Solitary individuals

The "can do, do do" framework applied to assess the association between physical capacity, physical activity and prospective falls, subsequent fractures, and mortality in patients visiting the fracture liaison service

Schene MR, Wyers CE, Driessen JHM, Vranken L, Meijer K, van den Bergh JP, Willems HC. *J. Pers. Med.* 2024; 14(4).

(Copyright © 2024, MDPI: Multidisciplinary Digital Publishing Institute)

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Abstract

The "can do, do do" framework combines measures of poor and normal physical capacity (PC, measured by a 6 min walking test, can do/can't do) and physical activity (PA, measured by accelerometer, do do/don't do) into four domains and is able to categorize patient subgroups with distinct clinical characteristics, including fall and fracture risk factors. This study aims to explore the association between domain categorization and prospective fall, fracture, and mortality outcomes. This 6-year prospective study included patients visiting a Fracture Liaison Service with a recent fracture. Outcomes were first fall (at 3 years of follow-up, measured by fall diaries), first subsequent fracture, and mortality (at 6 years). Cumulative incidences of all three outcomes were calculated. The association between domain categorization and time to the three outcomes was assessed by uni- and multivariate Cox proportional hazard analysis with the "can do, do do" group as reference. The physical performance of 400 patients with a recent fracture was assessed (mean age: 64 years; 70.8% female), of whom 61.5%, 20.3%, and 4.9% sustained a first fall, sustained a subsequent fracture, or had died. Domain categorization using the "can do, do do" framework was not associated with time to first fall, subsequent fracture, or mortality in the multivariate Cox regression analysis for all groups. "Can't do, don't do" group: hazard ratio [HR] for first fall: 0.75 (95% confidence interval [CI]: 0.45-1.23), first fracture HR: 0.58 (95% CI: 0.24-1.41), and mortality HR: 1.19 (95% CI: 0.54-6.95). Categorizing patients into a two-dimensional framework seems inadequate to study complex, multifactorial outcomes. A personalized approach based on known fall and fracture risk factors might be preferable.

Language: en

Keywords: accelerometer; falls; Fracture Liaison Service; physical activity; physical capacity

Impaired standing balance in older adults with cognitive impairment after a severe fall

Schmidt L, Zieschang T, Koschate J, Stuckenschneider T. *Gerontology* 2024; ePub(ePub): ePub.

(Copyright © 2024, Karger Publishers)

DOI: 10.1159/000538598

PMID: 38679005

Abstract

Introduction Fall-related sequelae as well as balance and gait impairments are more pronounced in older adults, who are cognitively impaired (OACI) compared to older adults who are cognitively healthy (OACH). Evidence is scarce about differences in standing balance and gait in OACH and OACI after a fall, even though these are major risks for recurrent falls. Thus, the aim of the study was to investigate early impairments in gait and balance, by adding Inertial Measurement Units (IMUs) to a functional performance test in OACH and OACI after a severe fall with presentation to the emergency department (ED) and immediate discharge.

METHODS The study sample was stratified into participants with and without probable cognitive impairment using the result of the Montreal Cognitive Assessment total score (maximum of 30 points). The cutoff for probable cognitive impairment was set at ≤ 24 . Standing balance and gait parameters were measured using three IMUs in $n=69$ OACH (72.0 ± 8.2 years) and $n=76$ OACI (78.7 ± 8.1 years). Data were collected at participants' homes as part of a comprehensive geriatric assessment in the "SeFalled" study within four weeks after presentation to the ED after a severe fall (German Clinical Trials Register ID: 00025949). ANCOVA was used for statistical analysis, adjusted for age.

RESULTS The data indicated significantly more sway for OACI compared to OACH during balance tasks, whereas no differences in gait behavior were found. In detail, differences in standing balance were revealed for mean velocity (m/s) during parallel stance with eyes open ($\eta^2=0.190$, $p<0.001$) and eyes closed on a balance cushion ($\eta^2=0.059$, $p=0.029$), as well as during tandem stance ($\eta^2=0.034$, $p=0.044$) between OACI and OACH. Further differences between the two groups were detected for path length (m/s²) during parallel stance with eyes open ($\eta^2=0.144$, $p<0.001$) and eyes closed ($\eta^2=0.044$, $p<0.027$) and for range (m/s²) during tandem ($\eta^2=0.036$, $p=0.036$) and parallel stance with eyes closed ($\eta^2=0.045$, $p=0.032$).

CONCLUSION Even though both groups have experienced a severe fall with presentation to the ED in the preceding 4 weeks, balance control among OACI indicated a higher fall risk than among OACH. Therefore, effective secondary falls prevention efforts have to be established, particularly for OACI.

Language: en

Correction: Spanò et al. Effect of dual-task motor-cognitive training in preventing falls in vulnerable elderly cerebrovascular patients: a pilot study. Brain Sci. 2022, 12, 168

Spanò B, Lombardi MG, De Tollis M, Szczepanska MA, Ricci C, Manzo A, Giuli S, Polidori L, Griffini IA, Adriano F, Caltagirone C, Annicchiarico R. Brain Sci. 2024; 14(4): e370.

(Copyright © 2024, Switzerland Molecular Diversity Preservation International (MDPI) AG)

DOI: 10.3390/brainsci14040370

PMID: 38672060

Abstract

Missing Citation

In the original publication [1], Perrochon et al. [27] was not cited. The citation has now been inserted in Section 2.3. Motor-Cognitive Dual-Task Training (DTT), Paragraph 5 and should read:

"We used an adapted version of the Walking Stroop carpet (WSC) used by Perrochon et al. [27] to detect cognitive impairment."

The citation has now been inserted in Figure A1 legend and should read:

Figure A1. Example of a walkable led floor representation during an easy, medium, or difficult DTT Walking Stroop task. See Table A3 for more details. A figure was reproduced, with the permission of the authors, from Figure 1B-D in Clinical interventions in Aging, Walking Stroop carpet: an innovative dual-task concept for detecting cognitive impairment, Clinical Interventions in Aging 2013, 8, 317-328 by Perrochon et al. [27].

The newly added reference appears below:

27. Perrochon, A.; Kemoun, G.; Watelain, E.; Berthoz, A. Walking Stroop carpet: An innovative dual-task concept for detecting cognitive impairment. Clin. Interv. Aging 2013, 8, 317-328. <https://doi.org/10.2147/CIA.S38667>.

Text Correction

There was a minor typographical error in the original publication [1]. In Section 2.3. Motor-Cognitive Dual-Task Training (DTT), Paragraph 5, "a led wall" should be "a led floor", the correct sentence appears below:

"The second part of the protocol (2/3 of the time of each training session) concerned the use of a led floor (4.5 m × 1.5 m) and five video projectors (see Figure 1)."

With these corrections, the order of some references has been adjusted accordingly. The authors state that the scientific conclusions are unaffected. This correction was approved by the Academic Editor. The original publication has also been updated.

Reference

Spanò, B.; Lombardi, M.G.; De Tollis, M.; Szczepanska, M.A.; Ricci, C.; Manzo, A.; Giuli, S.; Polidori, L.; Griffini, I.A.; Adriano, F.; et al. Effect of Dual-Task

Motor-Cognitive Training in Preventing Falls in Vulnerable Elderly Cerebrovascular Patients:
A Pilot Study. *Brain Sci.* 2022, 12, 168.

Language: en

Trends and projections in fall death in the Netherlands from 1990 to 2045

van der Naald N, Verbeek F, Baden DN, Verbeek AJM, Ham WHW, Verbeek J, Brummelkamp E, Groenewoud H, Stolwijk-van Niekerk C, Verbeek A. *Emerg. Med. J.* 2024; ePub(ePub): ePub.

(Copyright © 2024, BMJ Publishing Group)

DOI: 10.1136/emered-2023-213073 **PMID:** 38670793

Abstract

BACKGROUND: Increasing life expectancy in high-income countries has been linked to a rise in fall mortality. In the Netherlands, mortality rates from falls have increased gradually from the 1950s, with some indication of stabilisation in the 1990s. For population health and clinical practice, it is important to foresee the future fall mortality trajectories.

METHODS: A graphical approach was used to explore trends in mortality by age, calendar period and cohorts born in the periods of 1915-1945. Population data and the numbers of people with accidental fall fatality as underlying cause of death from 1990 to 2021 were derived from Statistics Netherlands. Age-standardised mortality rates of unintentional falls per 100 000 population were calculated by year and sex. A log-linear model was used to examine the separate effects of age, period and cohort on the trend in mortality and to produce estimates of future numbers of fall deaths until 2045.

RESULTS: While the total population increased by 17% between 1990 and 2021, absolute numbers of fall-related deaths rose by 230% (from 1584 to 5234), which was 251% (an increase of 576 deaths in 1990 to 2021 deaths in 2020) for men and 219% (from 1008 to 3213) for women. Age-standardised figures were higher for women than men and increased more over time. In 2020, 79% of those with death due to falls were over the age of 80, and 35% were 90 years or older. From 2020 to 2045, the observed and projected numbers of fall deaths were 2021 and 7073 for men (250% increase) and 3213 and 12 575 for women (291% increase).

CONCLUSION: Mortality due to falls has increased in the past decades and will continue to rise sharply, mainly caused by growing numbers of older adults, especially those in their 80s and 90s. Contributing risk factors are well known, implementation of preventive measures is a much needed next step. An effective approach to managing elderly people after falls is warranted to reduce crowding in the emergency care and reduce unnecessary long hospital stays.

Language: en

Keywords: accidental falls; death; epidemiology; Frail Elderly

Reframing fall prevention and risk management as a chronic condition through the lens of the expanded chronic care model: will integrating clinical care and public health improve outcomes?

Vincenzo JL, Bergen G, Casey CM, Eckstrom E. *Gerontologist* 2024; ePub(ePub): ePub.

(Copyright © 2024, Oxford University Press)

DOI: 10.1093/geront/gnae035

PMID: 38666718

Abstract

Falls are a leading cause of morbidity and mortality among adults aged 65 years and older (older adults) and are increasingly recognized as a chronic condition. Yet, fall-related care is infrequently provided in a chronic care context despite fall-related death rates increasing 41% between 2012 and 2021. One of the many challenges to addressing falls is the absence of fall-focused chronic disease management programs, which improve outcomes of other chronic conditions, like diabetes. Policies, information systems, and clinical-community connections help form the backbone of chronic disease management programs, yet these elements are often missing in fall prevention. Reframing fall prevention through the Expanded Chronic Care Model (ECCM) guided by implementation science to simultaneously support the uptake of evidence-based practices could help improve the care of older adults at risk for falling. The ECCM includes seven components: 1) self-management/develop personal skills, 2) decision support, 3) delivery system design/re-orient health services, 4) information systems, 5) build healthy public policy, 6) create supportive environments, and 7) strengthen community action. Applying the ECCM to falls-related care by integrating healthcare delivery system changes, community resources, and public policies to support patient-centered engagement for self-management offers the potential to prevent falls more effectively among older adults.

Language: en

Keywords: Chronic care model; Implementation; Injury Prevention; Older adults; STEADI

Analysis of factors influencing fall risk among elderly people in rural of China

Zhao Y, Xie D, Zhang C, Wang H, Zhang B, Liu S, Li M, Chen G, Ding H. Sci. Rep. 2024; 14(1): e9703.

(Copyright © 2024, Nature Publishing Group)

DOI: 10.1038/s41598-024-60430-x

PMID: 38678070

Abstract

Falls can cause serious health problems in the elderly. China is gradually entering a moderately aging society. In rural areas of China, the elderly are at a higher risk of falling. This study aims to explore and analyze the factors affecting the fall risk of elderly people in rural areas of China, and provide theoretical basis for reducing the fall risk of elderly people. M County, Anhui Province, China was selected as the survey site by the typical field sampling method, and the elderly people in rural areas were selected as the research objects. A total of 1187 people were investigated. Mann-Whitney U test and Kruskal-Wallis H test were used for univariate analysis, and multiple linear regression was used for multivariate analysis. Chronic diseases, multimorbidity, daily living ability, mental health, working status and family doctors are the factors that influence falls among elderly people in rural areas of China ($P < 0.05$, Adjusted $R(2) = 0.395$). The falls risk of the elderly in rural areas of China is influenced by multiple factors. Therefore, comprehensive measures should be taken to reduce the fall risk by comprehensively evaluating the influencing factors.

Language: en

Keywords: *Accidental Falls/statistics & numerical data/prevention & control; *Rural Population/statistics & numerical data; Activities of Daily Living; Aged; Aged, 80 and over; China/epidemiology; Falls; Female; Humans; Influencing factors; Male; Middle Aged; Risk Factors; Risk of falls; Rural areas of China; Senior citizen