

**Safety Literature 4th June 2023****Change in gait speed and fall risk among community-dwelling older adults with and without mild cognitive impairment: a retrospective cohort analysis**

Adam CE, Fitzpatrick AL, Leary CS, Hajat A, Ilango SD, Park C, Phelan EA, Semmens EO. BMC Geriatr. 2023; 23(1): e328.

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**DOI** 10.1186/s12877-023-03890-6 **PMID** 37231344

**Abstract**

**BACKGROUND:** Although slow gait speed is an established risk factor for falls, few studies have evaluated change in gait speed as a predictor of falls or considered variability in effects by cognitive status. Change in gait speed may be a more useful metric because of its potential to identify decline in function. In addition, older adults with mild cognitive impairment are at an elevated risk of falls. The purpose of this research was to quantify the association between 12-month change in gait speed and falls in the subsequent 6 months among older adults with and without mild cognitive impairment.

**METHODS:** Falls were self-reported every six months, and gait speed was ascertained annually among 2,776 participants in the Ginkgo Evaluation of Memory Study (2000-2008). Adjusted Cox proportional hazards models were used to estimate hazard ratios (HR) and 95% confidence intervals (CI) for fall risk relative to a 12-month change in gait speed.

**RESULTS:** Slowing gait speed over 12 months was associated with increased risk of one or more falls (HR:1.13; 95% CI: 1.02 to 1.25) and multiple falls (HR:1.44; 95% CI: 1.18 to 1.75). Quickening gait speed was not associated with risk of one or more falls (HR 0.97; 95% CI: 0.87 to 1.08) or multiple falls (HR 1.04; 95% CI: 0.84 to 1.28), relative to those with a less than 0.10 m/s change in gait speed. Associations did not vary by cognitive status ( $p(\text{interaction}) = 0.95$  all falls, 0.25 multiple falls).

**CONCLUSIONS:** Decline in gait speed over 12 months is associated with an increased likelihood of falls among community-dwelling older adults, regardless of cognitive status. Routine checks of gait speed at outpatient visits may be warranted as a means to focus fall risk reduction efforts.

Language: en

**Keywords**

Falls; Change in gait speed; Mild cognitive impairment

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## **Does frailty status predict outcome in major trauma in older people? A systematic review and meta-analysis**

Alqarni AG, Gladman JRF, Obasi AA, Ollivere B. Age Ageing 2023; 52(5): afad073.

(Copyright © 2023, Oxford University Press)

**DOI** 10.1093/ageing/afad073 **PMID** 37247405

### **Abstract**

**INTRODUCTION:** The incidence of major trauma in older people is increasing. Frailty is likely to be a factor that influences the outcomes of trauma. We conducted a systematic review aiming to investigate whether frailty affects major trauma outcomes in older people and whether it is more predictive than age.

**METHODS:** Observational studies investigating frailty, major trauma severity and outcomes were eligible. We searched electronic databases (Ovid MEDLINE, PubMed, Ovid EMBASE and CINAHL) from 2010 to 01 January 2023. We used Joanna Briggs Institute software to assess the risk of bias and conduct meta-analyses of the relationships between frailty status and outcomes. We used a narrative synthesis to compare the predictive value of frailty and age.

**RESULTS:** Twelve studies were eligible for meta-analyses. In-hospital mortality (odds ratio (OR) = 1.12, 95% confidence interval (CI) 1.05, 1.19), length of stay (OR = 2.04, 95% CI 1.51, 2.56), discharge to home (OR = 0.58, 95% CI 0.53, 0.63) and in-hospital complications (OR = 1.17, 95% CI 1.10, 1.24) were all associated with frailty. Frailty was found to be a more consistent predictor of adverse outcomes and mortality in older trauma patients than injury severity and age in six studies that reported multivariate regression analysis.

**DISCUSSION:** Older trauma patients with frailty have higher in-hospital mortality rates, prolonged hospital stays, in-hospital complications and adverse discharge disposition. Frailty is a better predictor of adverse outcomes than age in these patients. Frailty status is likely to be a useful prognostic variable in guiding patient management and stratifying clinical benchmarks and research trials.

Language: en

### **Keywords**

major trauma; frailty; systematic review; older people

## Factors that cause women with osteoporosis to fall

Correa RGP, Pivovarsky MLF, da Silva Santos G, Gomes ARS, Borba VZC. Arch. Endocrinol. Metab. 2023; 67(4): e000578.

(Copyright © 2023, Segmento Farma Editores)

DOI 10.20945/2359-3997000000578 PMID 37252691

### Abstract

**OBJECTIVE:** To analyze and compare intrinsic and extrinsic factors that cause falls among women receiving treatment for osteoporosis.

**SUBJECTS AND METHODS:** A cross-sectional study of women  $\geq 50$  years receiving treatment for osteoporosis. Participants filled out questionnaires (demographic characteristics), and researchers took anthropometric measurements of bone mineral density, handgrip strength (HGS), ankle range of motion (ROM), and gait speed (GS). We also evaluated the Timed Up and Go Test (TUGT), Five Times Sit-to-Stand Test (SST), and Falls Efficacy Scale-International (FES-I) and investigated the extrinsic factors for falls.

**RESULTS:** We included 144 participants (71.6 [8.3 years]), who reported 133 falls. We classified participants into a non-faller group (NFG; 0 falls,  $n=71$ , 49.5%), a faller group (FG; 1 fall,  $n=42$ , 28.9%), and a recurrent-faller group (RFG; more than 1 fall,  $n=31$ , 21.5%). Most patients had an increased risk of falling according to the TUGT, SST, reduced ankle ROM, and GS ( $P<.005$  for all). FES-I was associated with sporadic and recurrent falls. For the multivariate analysis, the number of falls was influenced by the presence of ramps (RR 0.48, 95% CI, 0.26-0.87,  $P=.015$ ), uneven surfaces (RR 1.6, 95% CI, 1.05-2.43,  $P=.028$ ), and antislippery adhesive on stairs (RR 2.75, 95% CI, 1.77-4.28,  $P<.001$ ).

**CONCLUSION:** Patients receiving treatment for osteoporosis are influenced by intrinsic and extrinsic factors that cause falls. Lower-limb strength and power-discriminated participants at a higher risk of falls, but extrinsic factors varied. Only uneven floors and antislippery adhesives on stairs were associated with increased frequency of falls.

Language: en

### Keywords

falls; Elderly; extrinsic factors; intrinsic factors; osteoporosis

## **Fall-risk-increasing drugs in older patients: the role of guidelines and GP-centred health care in Germany**

Laux G, Kaufmann-Kolle P, Szecsenyi J, Altiner A, Leutgeb R. Age Ageing 2023; 52(5): afad071.

(Copyright © 2023, Oxford University Press)

**DOI** 10.1093/ageing/afad071 **PMID** 37247399

### **Abstract**

**BACKGROUND:** fall-risk-increasing drugs (FRIDs) are a ubiquitous issue, especially for older patients. As part of a German guideline for pharmacotherapy, from 2019, a new quality indicator for this patient group was developed to measure the percentage of patients receiving FRIDs.

**METHODS:** patients, aged at least 65 years in 2020, insured by the Allgemeine Ortskrankenkasse statutory health insurance (Allgemeine Ortskrankenkasse, Baden-Wuerttemberg, Germany) with a particular general practitioner (GP) were observed from 1 January to 31 December 2020 cross-sectionally. The intervention group received GP-centred health care. Within GP-centred health care, GPs have the role of gatekeepers for patients within the health system and are-in contrast to regular care GPs in addition to other commitments-obliged to regularly attend training sessions on appropriate pharmacotherapy. The control group received regular GP care. For both groups, we measured the percentage of patients receiving FRIDs as well as the occurrence of (fall-related) fractures as the main outcomes. To test our hypotheses, we performed multivariable regression modelling.

**RESULTS:** a total of 634,317 patients were eligible for analysis. Within the intervention group (n = 422,364), we could observe a significantly reduced odds ratio (OR) for obtaining a FRID (OR = 0.842, confidence interval [CI]: [0.826, 0.859], P < 0.0001) in comparison to the control group (n = 211,953). Moreover, we could observe a significantly reduced chance for (fall-related) fractures in the intervention group (OR: 0.932, CI: [0.889, 0.975], P = 0.0071).

**CONCLUSIONS:** the findings point in the direction that the health care providers' awareness of the potential danger of FRIDs for older patients is higher in the GP-centred care group.

Language: en

### **Keywords**

older people; GP-centred care; guidelines; older patients; pharmacotherapy; risk of falling

## Healthy aging reduces dynamic balance control as measured by the simplified Star Excursion Balance Test

Segal AD, Vargas BL, Richards FG, Shelley CJ, Silverman AK. Gait Posture 2023; 103: 190-195.

(Copyright © 2023, Elsevier Publishing)

DOI 10.1016/j.gaitpost.2023.05.020 PMID 37244214

### Abstract

**BACKGROUND:** Detecting and classifying factors that contribute to age-related balance decline are essential for targeted interventions. Dynamic postural tests that challenge neuromuscular balance control are important to detect subtle deficits that affect functional balance in healthy aging. **RESEARCH QUESTION:** How does healthy aging affect specific components of dynamic postural control as measured by the simplified Star Excursion Balance Test (SEBT)? **METHODS:** Twenty healthy younger (18-39 years) and twenty healthy older (58-74 years) adults performed the standardized simplified SEBT, which involved standing on one leg and reaching the contralateral leg as far as possible in the anterior, posteromedial, and posterolateral directions. Optical motion capture was used to quantify the maximum reach distance normalized by body height (%H) for three repeated trials in each direction per leg. Linear mixed effects models and pairwise comparisons of estimated marginal means were used to assess differences ( $p < 0.05$ ) in normalized maximum reach distance by age group, reach direction, and leg dominance. Intersubject and intrasubject variability were also assessed by age group using coefficients of variation (CV).

**RESULTS:** Healthy older adults had less dynamic postural control compared to younger adults, with shorter reach distances in the anterior (7.9 %), posteromedial (15.8 %), and posterolateral (30.0 %) directions ( $p < 0.05$ ). Leg dominance and sex did not significantly affect SEBT score for either age group ( $p > 0.05$ ). Low intrasubject variability ( $CV < 0.25$  %) was found for repeated trials in both the older and younger participants. Therefore, the comparatively higher intersubject variability (Range  $CV = 8-25$  %) was mostly attributed to differences in SEBT performance across participants. **SIGNIFICANCE:** Quantifying dynamic postural control in healthy older adults in a clinical setting is important for early detection of balance decline and guiding targeted and effective treatment. These results support that the simplified SEBT is more challenging for healthy older adults, who may benefit from dynamic postural training to mitigate age-related decline.

Language: en

### Keywords

Dynamic; Leg dominance; Older; Postural control; SEBT; Senior

## **Levels of accelerometer-based physical activity in older adults with a mismatch between physiological fall risk and fear of falling**

Thiamwong L, Xie R, Park JH, Choudhury R, Malatyali A, Li W, Eckstrom E, Stout JR. J. Gerontol. Nurs. 2023; 49(6): 41-49.

(Copyright © 2023, Healio)

**DOI** 10.3928/00989134-20230512-06 **PMID** 37256756

### **Abstract**

We examined the associations between levels of accelerometer-based physical activity and the mismatch of physiological fall risk and fear of falling (FOF) in community-dwelling older adults. We assessed 123 participants who received 7-day wrist-worn accelerometry. Physiological fall risk was assessed using the portable BTrackS™ balance system and FOF was assessed using a short version of the Falls Efficacy Scale-International. Participants were categorized into four groups: rational (low FOF/normal balance), irrational (high FOF/normal balance), incongruent (low FOF/poor balance), and congruent (high FOF/poor balance). One third of older adults had a mismatch between their FOF and actual fall risk. Accelerometer-based moderate to vigorous physical activity (MVPA) was significantly different in the irrational group compared to the rational group ( $p = 0.023$ ) and the congruent group compared to the rational group ( $p = 0.032$ ). Encouraging older adults to improve MVPA may prevent them from shifting from rational to irrational or congruent groups, thereby reducing the risk of injurious falls. [Journal of Gerontological Nursing, 49(6), 41-49.].

Language: en

## Neuropsychiatric symptoms as indicators of fall risk in geriatric inpatients

Wilczyński K, Gorczyca M, Grabarczyk M, Szewieczek J. *Medicina (Lithuania)* 2023; 59(5): e887.

(Copyright © 2023, Lietuvos Gydytoju Sajunga Lithuania)

DOI 10.3390/medicina59050887 PMID 37241119

### Abstract

**Background and Objectives:** It is well established that patients with cognitive impairment are at a higher risk of falls. However, the impact of coexisting neuropsychiatric symptoms on the overall risk of falls in hospitalized geriatric individuals with and without dementia has not been extensively studied. This cross-sectional study will assess the association between neuropsychiatric symptoms and fall risk in geriatric individuals analyzed by sex.

**MATERIALS AND METHODS:** A total of 234 patients, both with and without dementia, admitted to the geriatric ward at Leszek Giec Upper-Silesian Medical Centre of the Silesian Medical University in Katowice, Poland, between January 2019 and January 2020 were included in this study. The Neuropsychiatric Inventory-Questionnaire was used to assess the presence of neuropsychiatric symptoms. Increased fall risk was defined by Berg scores of  $\leq 40$ .

**RESULTS:** The mean age of the study group was  $80.7 \pm 6.6$ , and women accounted for 62.8% of the study population. Apathy was the most common neuropsychiatric symptom, affecting 58.1% of patients, and it was the most common symptom among people with dementia, affecting 67.80% of patients. The receiver operating characteristics curve analysis revealed that a high fall risk was significantly associated with the total number of neuropsychiatric symptoms ( $\geq 4$ ) and the total intensity of these symptoms ( $\geq 6$ ). For women, high fall risk was associated with three or more neuropsychiatric symptoms and a total neuropsychiatric symptom intensity score of at least 6. For men, the association of high fall risk with the total number of NPS was not significant; a total NPS intensity score of 10 or more was associated with high fall risk. Multivariate logistic regression analysis identified associations with fall risk for hallucinations.

**CONCLUSIONS:** Our results suggest that the presence of neuropsychiatric symptoms, particularly hallucinations is associated with an increased risk of falls in geriatric inpatients. In addition, the cumulative total of NPS and their cumulative intensity are both independently associated with an increased risk of falls. These results suggest that fall prevention strategies should include the management of neuropsychiatric symptoms in hospitalized geriatric individuals.

Language: en

### Keywords

elderly; dementia; falls; cognitive impairment; neuropsychiatric symptoms; risk of falls

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Language: en

### Keywords

elderly; dementia; falls; cognitive impairment; neuropsychiatric symptoms; risk of falls

## **Physical performance and falling risk are associated with five-year mortality in older adults: an observational cohort study**

Salis F, Mandas A. Medicina (Lithuania) 2023; 59(5).

(Copyright © 2023, Lietuvos Gydytoju Sajunga Lithuania)

**DOI** 10.3390/medicina59050964 **PMID** 37241196

### **Abstract**

**BACKGROUND:** Falls in older people have a significant impact on public health. The scientific literature has provided evidence about the necessity for older adults to be physically active, since it reduces the incidence of falls, several diseases, and deaths, and can even slow down some effects of aging. The primary aim of our study is to identify if physical performances and risk of falling are related to 1-, 2-, 3-, 4-, and 5-year mortality. Its secondary aim is to establish if people with both severely impaired physical performance and a high risk of falling also present impairment in other geriatric domains.

**METHODS:** In this prospective study, we enrolled subjects aged 65 years or more, subjected them to comprehensive assessment (including assessment of risk of falling, physical capacities, comorbidities, autonomies in daily living, cognitive abilities, mood, and nutritional status), and followed them for 5 years.

**RESULTS:** We included 384 subjects, 280 of whom were women (72.7%), with a median age of 81 years. Our results showed that physical performances and risk of falling are highly correlated to each other ( $\rho = 0.828$ ). After divided the sample into three groups (people without augmented risk of falling and able to perform adequate physical activity; people with moderate risk of falling and/or disability; people with severe risk of falling and/or disability), we found that the more severe the disability and risk of falling were, the more compromised the other geriatric domains were. Moreover, the survival probability progressively increased following the same trend, amounting to only 41% in severely compromised people, 51.1% in moderately compromised people, and 62.8% in people without physical compromise nor an augmented falling risk ( $p = 0.0124$ ).

**CONCLUSIONS:** Poor physical performance combined with a high risk of falling, correlated with each other, are associated with higher mortality and impairment in multiple domains in older adults.

Language: en

### **Keywords**

elderly; mortality; comprehensive geriatric assessment (CGA); falling risk; physical performance

## **The geographic environment and the frequency of falling: a study of mortality outcomes in elderly people in China**

Huang Y, Li C, Lu X, Wang Y. Geospat. Health 2023; 18(1).

(Copyright © 2023, Global Network for Geospatial Health, Publisher University of Naples)

**DOI** 10.4081/gh.2023.1180 **PMID** 37246537

### **Abstract**

Falling has become the first and second cause of death due to injury among urban and rural residents in China. This mortality is considerably higher in the southern part of the country than in the North. We collected the rate of mortality due to falling for 2013 and 2017 by province, age structure and population density, taking topography, precipitation and temperature into account. 2013 was used as the first year of the study since this year marks the expansion of the mortality surveillance system from 161 counties to 605 counties making available data more representative. A geographically weighted regression was used to evaluate the relationship between mortality and the geographic risk factors. High levels of precipitation, steep topography and uneven land surfaces as well as a higher quantile of the population aged above 80 years in southern China are believed to have led to the significantly higher number of falling compared with that in the North. Indeed, when evaluated by geographically weighted regression, the factors mentioned found a difference between the South and the North with regard to falling of 81% and 76% for the years 2013 and 2017, respectively. Interaction effects were observed between geographic risk factors and falling that, apart from the age factor, could be explained by topographic and climatic differences. The roads in the South are more difficult to negotiate on foot, particularly when it rains, which increases the probability of falling. In summary, the higher mortality due to falling in southern China emphasizes the need to apply more adaptive and effective measures in rainy and mountainous region to reduce this kind of risk.

Language: en

### **Keywords**

Aged; Humans; Risk Factors; Temperature; \*Environment; \*Rural Population; China/epidemiology

## **Treatment fidelity and satisfaction with an intervention based on case management for older people with falls history: randomized clinical trial**

Janducci AL, Gramani-Say K, da Silva LC, Florido JVB, Novaes ADC, Porcatti LR, Ansai JH. *Geriatr. Nurs.* 2023; 52: 48-55.

(Copyright © 2023, Elsevier Publishing)

**DOI** 10.1016/j.gerinurse.2023.05.002 **PMID** 37243992

### **Abstract**

**PURPOSE:** To verify the treatment fidelity and satisfaction with a multifactorial intervention based on case management in community-dwelling older people with falls history and related sociodemographic and clinical factors.

**METHODS:** This is a single-center, randomized, parallel-group controlled clinical trial. 62 community-dwelling older people with falls history were distributed into two groups. The Intervention Group (IG) underwent a case management involving multidimensional evaluation, explanation of the risk factors for falls identified, implementation of an intervention proposal based on the identified risks, elaboration of an individualized falls intervention plan, implementation, monitoring and review of the intervention plan. The Control Group (CG) was accompanied by a monthly phone call. After 16 weeks, the volunteers answered two closed questionnaires about treatment fidelity or non-fidelity to intervention (IG) and satisfaction with intervention (both groups). In addition, the frequency of intervention, adherence to each recommendation of the case management and satisfaction with general care were evaluated.

**RESULTS:** There was good treatment fidelity based on case management, as well as good adherence to recommendations. In addition, the satisfaction of both groups was positive, although the IG had a better score ( $p < 0.05$ ). There was a significant influence of monthly income and general health on treatment fidelity (IG). Also, age, years of schooling, general health and physical mobility significantly influenced satisfaction with the IG. There was a significant influence of number of falls on satisfaction with monitoring conducted in the CG.

**CONCLUSIONS:** Clinical and sociodemographic factors can influence treatment fidelity and satisfaction of older people with falls history to a falls prevention program.

Language: en

### **Keywords**

Risk management; Accidents due to falls; Cooperation and adherence to treatment; Patient satisfaction

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**DOI** 10.1186/s12877-023-03890-6 **PMID** 37231344

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Language: en

### **Keywords**

Falls; Change in gait speed; Mild cognitive impairment

## **Clinical outcomes in patients with atrial fibrillation and a history of falls using non-vitamin K antagonist oral anticoagulants: a nationwide cohort study**

Grymonprez M, Petrovic M, De Backer TL, Steurbaut S, Lahousse L. *Int. J. Cardiol. Heart Vasc.* 2023; 47: e101223.

(Copyright © 2023, Elsevier Publishing)

**DOI** 10.1016/j.ijcha.2023.101223 **PMID** 37252193

### **Abstract**

**BACKGROUND:** Data on non-vitamin K antagonist oral anticoagulant (NOAC) use in patients with atrial fibrillation (AF) and a history of falls are limited. Therefore, we investigated the impact of a history of falls on AF-related outcomes, and the benefit-risk profiles of NOACs in patients with a history of falls.

**METHODS:** Using Belgian nationwide data, AF patients initiating anticoagulation between 2013 and 2019 were included. Previous falls that occurred  $\leq 1$  year before anticoagulant initiation were identified.

**RESULTS:** Among 254,478 AF patients, 18,947 (7.4%) subjects had a history of falls, which was associated with higher risks of all-cause mortality (adjusted hazard ratio (aHR) 1.11, 95%CI (1.06-1.15)), major bleeding (aHR 1.07, 95%CI (1.01-1.14)), intracranial bleeding (aHR 1.30, 95%CI (1.16-1.47)) and new falls (aHR 1.63, 95%CI (1.55-1.71)), but not with thromboembolism. Among subjects with a history of falls, NOACs were associated with lower risks of stroke or systemic embolism (aHR 0.70, 95%CI (0.57-0.87)), ischemic stroke (aHR 0.59, 95%CI (0.45-0.77)) and all-cause mortality (aHR 0.83, 95%CI (0.75-0.92)) compared to vitamin K antagonists (VKAs), while major, intracranial, and gastrointestinal bleeding risks were not significantly different. Major bleeding risks were significantly lower with apixaban (aHR 0.77, 95%CI (0.63-0.94)), but similar with other NOACs compared to VKAs. Apixaban was associated with lower major bleeding risks compared to dabigatran (aHR 0.78, 95%CI (0.62-0.98)), rivaroxaban (aHR 0.78, 95%CI (0.68-0.91)) and edoxaban (aHR 0.74, 95%CI (0.59-0.92)), but mortality risks were higher compared to dabigatran and edoxaban.

**CONCLUSIONS:** A history of falls was an independent predictor of bleeding and death. NOACs had better benefit-risk profiles than VKAs in patients with a history of falls, especially apixaban.

Language: en

### **Keywords**

Mortality; Anticoagulation; Atrial fibrillation; Bleeding; Fall; Thromboembolism

## **Comparing older parents' and adult children's fear of falling and perceptions of age-friendly home modification: an integration of the theories of planned behavior and protection motivation**

Kwon HJ, Oh J. Behav. Sci. (Basel) 2023; 13(5).

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**DOI** 10.3390/bs13050403 **PMID** 37232640

### **Abstract**

This study investigated how a fear of falling affects perceptions and behavioral intentions toward age-friendly home modification (AFHM) in older parents and adult children by integrating the theory of planned behavior (TPB) to explain AFHM decision-making processes and the protection motivation theory to explain the impact of a fear of falling on AFHM intention. The target population comprised older parents ( $\geq 75$  years old) and adult children (45–64 years old) in Busan, South Korea ( $N = 600$ ). The participants completed a self-administered questionnaire in March 2022. Independent t-test and path model analyses were conducted to compare primary constructs between older parents and adult children and analyze the relationships among a fear of falling, TPB components, and AFHM intention.

RESULTS showed that both groups had positive attitudes toward AFHM. However, adult children showed significantly higher rates of having a fear of falling, lower perceived behavioral control, and higher AFHM intention than older parents. The proposed research models were partially supported in the older-parent group and fully supported in the adult-children group. Adult children play a critical role in AFHM, along with older adults who are directly involved in an aging society. AFHM-supporting programs, including monetary and human-force assistance, education, related public advertisements, and an active AFHM market, should be expanded.

Language: en

### **Keywords**

older adults; adult children; fear of falling; home modification; protection motivation theory; theory of planned behaviour

## **Effect of electronic rounding board on falls and self-harm among psychiatric inpatients: quality improvement project**

Kay Shibley M, Chae Kim S, Ecoff L. Crit. Care Nurs. Q. 2023; 46(3): 310-318.

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**DOI** 10.1097/CNQ.0000000000000468 **PMID** 37226922

### **Abstract**

More than 1 million falls are reported in US hospitals each year. Psychiatric inpatients are at high risk for self-harm behaviors with reported suicide rate of 6.5 per 1000 patients. Patient observation is the primary risk management intervention in preventing adverse patient safety incidents. This project aimed to examine the effectiveness of handheld electronic rounding board (ObservSMART) implementation on falls and self-harm incidents among psychiatric inpatients. A retrospective review of adverse patient safety incidents was conducted to compare the 6-month preimplementation period versus the 6-month postimplementation period with staff training and implementation in July 2019. The monthly fall rates per 1000 patient-days were 3.53 versus 3.80 during the pre- and postimplementation periods, respectively. About one-third of the falls resulted in mild or moderate injuries for both periods. The incidence of self-harm was 3 versus 7 during the pre- and postimplementation periods, with incidence of 1 versus 6, respectively, among adult patients, who are more likely to hide self-harm. Although there were no changes in falls, the implementation of ObservSMART markedly increased the detection of patient self-harm, including self-injury and suicide attempts. It also ensures staff accountability and provides an easy-to-use tool to perform timely, proximity-based patient observations.

Language: en

### **Keywords**

Adult; Humans; \*Inpatients; \*Self-Injurious Behavior/epidemiology/prevention & control; Electronics; Hospitals; Quality Improvement

## **Factors predicting oral and maxillofacial fractures after falling and factors predicting the duration of treatment**

Machida Y, Tomioka T, Koshinuma S, Nakamura M, Yamamoto G, Hitosugi M. Dent. Traumatol. 2023; ePub(ePub): ePub.

(Copyright © 2023, John Wiley and Sons)

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### **Abstract**

**BACKGROUND/AIM:** The first objective of this study was to identify predictive factors for oral and maxillofacial fractures at the initial response to the patient. The second objective was to determine the factors influencing the incidence of treatment duration of more than 1 month using the information shown in the medical record.

**MATERIALS AND METHODS:** Hospital records from 2011 to 2019 were reviewed to identify patients who had sustained oral and maxillofacial injuries by falling or falling from a height. Patterns and types of oral and maxillofacial injury, injury severity, and background of the injury were collected from the hospital records. The variables independently associated with a treatment duration of more than 1 month were determined by logistic regression analysis.

**RESULTS:** In total, 282 patients (150 men, 132 women; median age, 17.5 years) were selected for analysis. Maxillofacial fractures were observed in 20.9% of patients (59/282); among these, mandibular fractures were the most common (47/59). Logistic regression analysis showed that age (odds ratio [OR], 1.026), nighttime occurrence (OR, 2.192), and upper face injury (OR, 20.704) were independent predictive factors for having a maxillofacial fracture. Additionally, the number of injured teeth (OR, 1.515) and the use of intermaxillary fixation (OR, 16.091) were independent predictors of treatment duration of more than 1 month.

**CONCLUSIONS:** These results may be useful in the initial management of maxillofacial injuries in terms of better-informing patients injured by falling their expected treatment duration and managing the psychological impacts of a long treatment duration.

Language: en

### **Keywords**

dental injury; falling; falling from height; maxillofacial fracture; treatment duration

## **Management of use of urinary antimuscarinics and alpha blockers for benign prostatic hyperplasia in older adults at risk of falls: a clinical review**

Ilhan B, Erdoğan T, Topinková E, Bahat G. Eur. Geriatr. Med. 2023; ePub(ePub): ePub.

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### **Abstract**

**PURPOSE:** We aimed to outline the existing information and the underlying mechanisms of risk of falls associated with the use of urinary antimuscarinics for overactive bladder (OAB) or alpha-blockers for benign prostatic hyperplasia (BPH) in older adults. In addition, we aimed to provide assistance to clinicians in decision-making about (de-)prescribing these drugs in older adults.

**METHODOLOGY:** Based on a literature search in PubMed and Google Scholar, we reviewed the literature, and identified additional relevant articles from reference lists, with an emphasis on the most commonly prescribed drugs in OAB and BPH in older patients. We discussed the use of bladder antimuscarinics and alpha-blockers, their potential side effects related to falls, and the deprescribing of these drugs in older adults.

**RESULTS:** Urinary urgency or incontinence and lower urinary tract symptoms due to untreated OAB and BPH contribute to fall risk. On the other hand, the use of bladder antimuscarinics and alpha-blockers is also related to fall risk. They contribute to (or cause) falling through dizziness, somnolence, visual impairment, and orthostatic hypotension while they differ in their side-effect profiles regarding these problems. Falls are common and can cause a remarkable amount of morbidity and mortality. Thus, preventive measures should be taken to lower the risk. If the clinical condition allows, withdrawal of bladder antimuscarinics and alpha-blockers is recommended in fall-prone older adults. There are practical resources and algorithms that guide and assist clinicians in deprescribing these drug groups.

**CONCLUSIONS:** The decision to prescribe or deprescribe these treatments in patients at high risk of falls should be individualized. In addition to explicit tools that are helpful for clinical decision-making in (de-)prescribing these drugs, STOPPFall (a recently developed expert-based decision aid specifically aiming to prevent falls) is present to assist prescribers in attaining decisions.

Language: en

### **Keywords**

Falls; Urinary incontinence; Alpha-blockers; Antimuscarinics; Benign prostatic hyperplasia; FRIDs; Overactive bladder

## **The geographic environment and the frequency of falling: a study of mortality outcomes in elderly people in China**

Huang Y, Li C, Lu X, Wang Y. *Geospat. Health* 2023; 18(1).

(Copyright © 2023, Global Network for Geospatial Health, Publisher University of Naples)

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### **Abstract**

Falling has become the first and second cause of death due to injury among urban and rural residents in China. This mortality is considerably higher in the southern part of the country than in the North. We collected the rate of mortality due to falling for 2013 and 2017 by province, age structure and population density, taking topography, precipitation and temperature into account. 2013 was used as the first year of the study since this year marks the expansion of the mortality surveillance system from 161 counties to 605 counties making available data more representative. A geographically weighted regression was used to evaluate the relationship between mortality and the geographic risk factors. High levels of precipitation, steep topography and uneven land surfaces as well as a higher quantile of the population aged above 80 years in southern China are believed to have led to the significantly higher number of falling compared with that in the North. Indeed, when evaluated by geographically weighted regression, the factors mentioned found a difference between the South and the North with regard to falling of 81% and 76% for the years 2013 and 2017, respectively. Interaction effects were observed between geographic risk factors and falling that, apart from the age factor, could be explained by topographic and climatic differences. The roads in the South are more difficult to negotiate on foot, particularly when it rains, which increases the probability of falling. In summary, the higher mortality due to falling in southern China emphasizes the need to apply more adaptive and effective measures in rainy and mountainous region to reduce this kind of risk.

Language: en

### **Keywords**

Aged; Humans; Risk Factors; Temperature; \*Environment; \*Rural Population; China/epidemiology

## The pattern of injuries in the emergency room during the COVID-19 pandemic

Choi Y, Lee DH. Healthcare (Basel) 2023; 11(10): e1483.

(Copyright © 2023, MDPI: Multidisciplinary Digital Publishing Institute)

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### Abstract

**BACKGROUND:** The coronavirus disease 2019 (COVID-19) pandemic has obviously caused a remarkable change in patients' emergency department (ED) visits; however, data from multicenter studies are lacking. We aimed to present a comprehensive analysis of injury-related ED visits in Republic of Korea before and during the COVID-19 pandemic.

**MATERIALS AND METHODS:** Data from 23 tertiary hospitals based on Emergency Department-based Injury In-depth Surveillance were used for this retrospective cross-sectional study. A total of 541,515 ED visits (age  $\geq 20$  years) between 1 January 2018 and 31 December 2020 were included, and the trend of injuries related to motor vehicular accidents, falls, self-harm and suicide, assault, and poisoning were compared between the pre-COVID-19 time period and during the COVID-19 pandemic.

**RESULTS:** In the first year of the COVID-19 period, a decline in the number of ED visits was observed (41,275, 21%) compared to the previous year. Injuries caused by motor vehicles (36,332 in 2019 vs. 27,144 in 2020), falls and slips (61,286 in 2019 vs. 49,156 in 2020), assaults (10,528 in 2019 vs. 8067 in 2020), and poisonings (7859 in 2019 vs. 7167 in 2020) decreased, whereas self-harm and suicide (8917 in 2019 vs. 8911 in 2020) remained unchanged. The hospitalization (16.6% in 2019 vs. 18.8% in 2020) and ED mortality rate (0.6% in 2019 vs. 0.8% in 2020) also increased.

**CONCLUSION:** The COVID-19 pandemic led to a decline in the overall number of trauma patients seeking medical care; however, the proportion of patients requiring hospitalization or intensive care unit admission increased, indicating more severe injuries among those who did seek care. Suicide attempt rates remained unchanged, highlighting the need for targeted care and support for vulnerable patients. During the pandemic, EDs had to continue to provide care to patients with medical emergencies unrelated to COVID-19, which requires a delicate and adaptable approach to ED operations. To manage the increased stress and workload caused by the pandemic, increased resources and support for healthcare workers were needed.

**Keywords:** CoViD-19-Road-Traffic

**Language:** en

### Keywords

injury; trauma; COVID-19; emergency; pandemic; pattern; trend