

Safety Literature 2nd July 2023

A systematic review of fear of falling and related constructs after hip fracture: prevalence, measurement, associations with physical function, and interventions

Gadhvi C, Bean D, Rice D. BMC Geriatr. 2023; 23(1): e385.

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DOI 10.1186/s12877-023-03855-9 PMID 37353752

Abstract

BACKGROUND: Hip fracture is a common and debilitating injury amongst older adults. Fear of falling (FoF) and related constructs (balance confidence and falls efficacy) may impede rehabilitation after hip fracture. An updated systematic review to synthesize existing literature on FoF after hip fracture is needed. This review focussed on four research questions: In the hip fracture population: (1) What is the prevalence of FoF?; (2) What FoF assessment tools are validated? (3) What is the relationship between FoF and physical function?; (4) What interventions are effective for reducing FoF? **METHODS:** A systematic search was undertaken in EBSCO Health, Scopus and PsychINFO in January 2021 (and updated December 2022) for articles on FoF after hip fracture. Data in relation to each research question was extracted and analysed. The quality of the studies was appraised using the 'Risk of Bias Tool for Prevalence Studies', 'COSMIN Risk of Bias checklist for Patient-reported outcome measures', modified version of the 'Appraisal Tool for Cross-sectional studies', and the 'Cochrane Risk of Bias 2' tools for each research question, respectively.

RESULTS: 36 studies (37 articles) with 5099 participants were included (mean age 80.2 years and average 78% female). Prevalence rates for FoF after hip fracture ranged between 22.5% and 100%, and prevalence tended to decrease as time progressed post hip fracture. The 'Falls Efficacy Scale - International' (FES-I) and 'Fear of Falling Questionnaire - Revised' (FFQ-R) were found to be reliable, internally consistent, and valid tools in hip fracture patients. FoF after hip fracture was consistently associated with measures of physical function including balance, gait speed, composite physical performance measures and self-reported function. Ten of 14 intervention studies were considered high risk of bias. Exercise-based interventions with or without a psychological component were not effective in reducing FoF after hip fracture compared to a control condition.

CONCLUSION: FoF is prevalent after hip fracture and is consistently associated with poorer physical function. Only two instruments (FES-I and FFQ-R) have been validated for measuring FoF in the hip fracture population. However, there remains a need for larger, higher quality randomised controlled trials targeting FoF after hip fracture in order to guide clinical practice. **TRIAL REGISTRATION:** PROSPERO registration: CRD42020221836.

Language: en

Keywords: Rehabilitation; Older adults; Fear of falling; Balance confidence; Falls efficacy; Hip fracture; Neck of femur fracture OR nof

Associations between psychotropic and anti-dementia medication use and falls in community-dwelling older adults with cognitive impairment

Santiago Martinez P, Lord SR, Close JCT, Taylor ME. Arch. Gerontol. Geriatr. 2023; 114: e105105.

(Copyright © 2023, Elsevier Publishing)

DOI 10.1016/j.archger.2023.105105 **PMID** 37364485

Abstract

OBJECTIVES: Evidence for effective fall prevention strategies is limited for people with cognitive impairment. Understanding what factors contribute to fall risk identifies potential intervention strategies. We aimed to determine if psychotropic and anti-dementia medication use are associated with falls in community-dwelling older people with mild-moderate cognitive impairment and dementia.

DESIGN: Secondary analysis of an RCT (i-FOCIS). **PARTICIPANTS AND SETTING:** 309 community-dwelling people with mild to moderate cognitive impairment or dementia from Sydney, Australia.

METHODS: Demographic information, medical history, and medication use were collected at baseline and participants were followed up for 1-year for falls using monthly calendars and ancillary telephone falls.

RESULTS: Psychotropic medication use was associated with an increased rate of falls (IRR 1.41, 95%CI 1.03, 1.93) and slower gait speed, poor balance and reduced lower limb function when adjusting for age, sex, education and cognition, as well as RCT group allocation when examining prospective falls. Antidepressants use increased the rate of falls in a similarly adjusted model (IRR 1.54, 95%CI 1.10, 2.15), but when additionally adjusting for depressive symptoms, antidepressant use was no longer significantly associated with falls while depressive symptoms was. Anti-dementia medication use was not associated with rate of falls.

CONCLUSIONS: Psychotropic medication use increases fall risk, and anti-dementia medication does not reduce fall risk in older adults with cognitive impairment. Effective management of depressive symptoms, potentially with non-pharmacological approaches, is needed to prevent falls in this population. Research is also required to ascertain the risks/benefits of withdrawing psychotropic medications, particularly in relation to depressive symptoms.

Language: en

Keywords

Anti-dementia Agents; Balance; Cognitive dysfunction; Dementia; Gait; Psychotropic Medications

Changes in distance between a wearable robotic exoskeleton user and four-wheeled walker during gait in level and slope conditions: implications for fall prevention systems

Tan K, Koyama S, Sakurai H, Kanada Y, Tanabe S. Biomimetics (Basel) 2023; 8(2).

(Copyright © 2023, MDPI)

DOI 10.3390/biomimetics8020213 **PMID** 37366808

Abstract

When walking with wearable robotic exoskeletons (WRE) in people with spinal cord injury, the distance between the user and the walker is one of the most important perspectives for ensuring safety. The purpose of this study was to clarify the distance between WRE users and four-wheeled walkers (4WW) while walking on level and sloping surfaces. To eliminate the effects of variation in neurological conditions, 12 healthy subjects participated. All participants ambulated using the WRE and the 4WW on level and sloping surfaces. The outcomes were the mean distances between the WRE users and the 4WWs in the level and slope conditions. To examine the influence of uphill and downhill slopes on distance, comparisons were conducted between the uphill or downhill conditions and the respective transitional periods. In the uphill condition, the mean distances were significantly greater than that in the level condition. Conversely, the mean distance moving downhill was significantly shorter than that in the level condition. Changes in the distance between the WRE user and the 4WW might increase the risk of falling forward on an uphill slope and backward on a downhill slope. This study's results will assist in developing a new feedback system to prevent falls.

Language: en

Keywords

fall prevention; assistive device; gait training; powered exoskeleton; rehabilitation robotics; slope

Coproduction and usability of a smartphone app for falls reporting in Parkinson disease

Wales J, Moore J, Naisby J, Ratcliffe N, Barry G, Amjad A, Godfrey A, Standerline G, Webster E, Morris R. Phys. Ther. 2023; pzad076.

(Copyright © 2023, American Physical Therapy Association)

DOI 10.1093/ptj/pzad076 **PMID** 37369034

Abstract

OBJECTIVE: The purpose of this study was to coproduce a smart-phone application for digital falls reporting in people with Parkinson disease (PD) and to determine usability using an explanatory mixed-methods approach.

METHODS: This study was undertaken in 3 phases. Phase 1 was the development phase, in which people with PD were recruited as co-researchers to the project. The researchers, alongside a project advisory group, coproduced the app over 6 months. Phase 2 was the implementation phase, in which 15 people with PD were invited to test the usability of the app. Phase 3 was the evaluation phase, in which usability was assessed using the systems usability scale by 2 focus groups with 10 people with PD from phase 2.

RESULTS: A prototype was successfully developed by researchers and the project advisory group. The usability of the app was determined as good (75.8%) by people with PD when rating using the systems usability scale. Two focus groups (n = 5 per group) identified themes of 1) usability, 2) enhancing and understanding management of falls, and 3) recommendations and future developments.

CONCLUSIONS: A successful prototype of the iFall app was developed and deemed easy to use by people with PD. The iFall app has potential use as a self-management tool for people with PD alongside integration into clinical care and research studies. **IMPACT:** This is the first digital outcome tool to offer reporting of falls and near-miss fall events. The app may benefit people with PD by supporting self-management, aiding clinical decisions in practice, and providing an accurate and reliable outcome measure for future research. **LAY**

SUMMARY: A smartphone application designed in collaboration with people who have PD to record their falls was acceptable and easy to use by people with PD.

Language: en

Keywords

Accidental Falls; App; Co-Production; Digital Measurement Tool; Parkinson Disease; Usability

Development of the home environment risk rating scale and investigation of the psychometric properties in the elderly and adult individuals

Akyurek G, Bilgin N, Kocademir FN, Aslan S, Turk AB. J. Public Health (Heidelberg) 2023; ePub(ePub): ePub.

(Copyright © 2023, Holtzbrinck Springer Nature Publishing Group)

DOI 10.1007/s10389-023-01885-6 **PMID** 37361307

Abstract

AIM: To reduce home accidents, which is one of the critical public health problems, it is necessary to evaluate the home environment first. The aim of this study was to develop the Home Environment Risk Rating Scale (HERRS) and examine its psychometric properties in elderly and adult individuals. **SUBJECT AND METHODS:** This study was conducted on 220 elderly and adult individuals (63.68 ± 10.31 years old, 68.2% female, 31.8% male) living in their homes. The participants completed the Sociodemographic Information Form, Home Environment Conditions Evaluation Form for Falls, and Home and Environment Risk Rating Scale. In addition, psychometric measurement results for horizontal and vertical measurements were analyzed by exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) methods.

RESULTS: It was found that the Kaiser-Mayer-Olkin (KMO) value for horizontal and vertical measurements were 0.613 and 0.704, respectively.

RESULTS of EFA for horizontal and vertical measurements revealed that five factors together explain 72.033% and three factors together explain 68.368% of the total variance, respectively. The result of CFA for horizontal and vertical measurements demonstrate that the 5-sub-dimension horizontal scale structure and the 3-sub-dimension vertical measurement structure generally fit acceptable in this scale. Cronbach's alpha was satisfactory in all of the measurements (0.73 and 0.80 respectively); the ICCs were good/excellent in all of the measurements (0.99 and 0.90, respectively).

CONCLUSION: The results show that HERRS has the potential to examine the risks of the home environment adequately for the home structure of Turkish society in detail and is a valid and reliable test that health professionals can use. **SUPPLEMENTARY**

INFORMATION: The online version contains supplementary material available at 10.1007/s10389-023-01885-6.

Language: en

Keywords

Environment; Reliability; Development; Measure; Validity

Differences in fall-related characteristics across cognitive disorders

Minta K, Colombo G, Taylor WR, Schinazi VR. *Front. Aging Neurosci.* 2023; 15: e1171306.

(Copyright © 2023, Frontiers Research Foundation)

DOI 10.3389/fnagi.2023.1171306 **PMID** 37358956

Abstract

Approximately 40-60% of falls in the elderly lead to injuries, resulting in disability and loss of independence. Despite the higher prevalence of falls and morbidity rates in cognitively impaired individuals, most fall risk assessments fail to account for mental status. In addition, successful fall prevention programmes in cognitively normal adults have generally failed in patients with cognitive impairment. Identifying the role of pathological aging on fall characteristics can improve the sensitivity and specificity of fall prevention approaches. This literature review provides a thorough investigation into fall prevalence and fall risk factors, the accuracy of fall risk assessments, and the efficacy of fall prevention strategies in individuals with diverse cognitive profiles. We show that fall-related characteristics differ between cognitive disorders and fall risk assessment tools as well as fall prevention strategies should critically consider each patient's cognitive status to facilitate the identification of fallers at an earlier stage and support clinical decision-making.

Language: en

Keywords

dementia; gait; fall risk; cognitive impairment; fall prevention strategies; injurious falls

Dual-task performance, balance and aerobic capacity as predictors of falls in older adults with cardiovascular disease: a comparative study

Silveira H, Lima J, Plácido J, Ferreira JV, Ferreira R, Laks J, Deslandes A. Behav. Sci. (Basel) 2023; 13(6).

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

DOI 10.3390/bs13060488 **PMID** 37366740

Abstract

Cardiovascular diseases (CVD) are highly prevalent and strongly associated with the risk of falls in the elderly. Falls are associated with impairments in cognition and functional or gait performance; however, little is known about these associations in the elderly population with CVD. In this study, we aimed to clarify the possible associations of physical capacity and functional and cognitive outcomes with the incidence of falls in older adults with CVD. In this comparative study, 72 elderly patients were divided into fallers (n = 24 cases) and non-fallers (n = 48 controls) according to the occurrence of falls within one year. Machine learning techniques were adopted to formulate a classification model and identify the most important variables associated with the risk of falls. Participants with the worst cardiac health classification, older age, the worst cognitive and functional performance, balance and aerobic capacity were prevalent in the case group. The variables of most importance for the machine learning model were VO(2max), dual-task in seconds and the Berg Scale. There was a significant association between cognitive-motor performance and the incidence of falls. Dual-task performance, balance, and aerobic capacity levels were associated with an increased risk of falls, in older adults with CVD, during a year of observation.

Language: en

Keywords

older adults; polypharmacy; cardiovascular disease; dual-task; executive function; physical function

Fall-risk-increasing drugs and gait performance in community-dwelling older adults: exploratory results from the gait and brain study

Osman A, Speechley M, Ali S, Montero-Odasso M. *Drugs Aging* 2023; ePub(ePub): ePub.

(Copyright © 2023, Adis International)

DOI 10.1007/s40266-023-01045-1 **PMID** 37347412

Abstract

BACKGROUND/OBJECTIVE: While several psychotropic and cardiovascular drugs have been identified as fall-risk-increasing drugs (FRIDs) in older adults, the intervening mechanisms linking FRIDs and falls are unclear. It is plausible that gait performance is an intermediate variable on the causal pathway between FRIDs and falls. The current evidence on the relationship between medication use and gait performance in older adults is scarce. We aimed to assess the association between FRIDs and gait performance in community-dwelling older adults.

METHODS: This was a cross-sectional analysis using data from the Gait and Brain Study, a study of community-dwelling older adults aged 65 years old and over (N = 345). The following drug classes were assessed: antidepressants, benzodiazepines, alpha-blockers, beta-blockers, vasodilators, diuretics, statins and aspirin. Medication use was ascertained through validated questionnaires and electronic medical records. Multiple linear regression models were used to assess the association between each of the drug classes and gait speed and gait variability. Gait variability was expressed as the coefficient of variation (CV = mean/standard deviation) of stride time. Models were adjusted for age, sex, education, body mass index (BMI), mini-mental status exam (MMSE) score, Geriatric Depression Scale (GDS) score, general activity level, use of other FRIDs and comorbidity propensity score.

RESULTS: Diuretic use was associated with significantly reduced gait speed (B = -7.97 cm/s, 95% CI: -13.94, -2.00, P = 0.009). Statin use was associated with significantly increased stride time CV (B = 0.13, 95% CI: 0.02, 0.24, P = 0.026). Other drugs did not have a statistically significant relationship with gait speed or variability.

CONCLUSION: The association between diuretic use and reduced gait speed is consistent with existing evidence on diuretic use and increased fall risk. The association between statins and increased stride time variability is notable given inconclusive evidence in previous studies. Our results provide initial estimates of the association between FRIDs and gait performance in older adults for future longitudinal studies.

Language: en

Managing geriatric patients with falls and fractures

Williams CT, Whyman J, Loewenthal J, Chahal K. Orthop. Clin. North Am. 2023; 54(3S): e1-e12.

(Copyright © 2023, Elsevier Publishing)

DOI 10.1016/j.ocl.2023.04.001 **PMID** 37349065

Abstract

Orthopedic fractures in adults 65 and older are common and can lead to functional decline and increased morbidity and mortality. Falls are often the precipitating event for fractures in this population, linked to common aging physiology with increasing comorbid conditions and advancing frailty. Managing falls and orthopedic fractures in the geriatric population is complex, requiring a systematic and collaborative approach spearheaded by a multidisciplinary team focused on improving patient outcomes.

Language: en

Keywords

Frailty; Fragility fractures; Hip fractures; Orthopedics; Perioperative assessment; Postoperative care

Physical functioning in patients with a recent fracture: the "Can Do, Do Do" framework applied to explore physical capacity, physical activity and fall risk factors

Schene MR, Meijer K, Cheung D, Willems HC, Driessen JHM, Vranken L, van den Bergh JP, Wyers CE. *Calcif. Tissue Int.* 2023; ePub(ePub): ePub.

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DOI 10.1007/s00223-023-01090-3 **PMID** 37367955

Abstract

Physical capacity (PC) and physical activity (PA) are associated physical performance measures, and combined, PC and PA are used to categorize physical performance in the "can do, do do" framework. We aimed to explore physical performance of patients attending the fracture liaison service (FLS). In this cross-sectional study, PC was measured by 6-min-walking-test (can't do/can do) and PA by accelerometer (don't do/do do). Following quadrants were defined based on predefined cut-off scores for poor performance: (1) "can't do, don't do"; (2) "can do, don't do"; (3) "can't do, do do"; (4) "can do, do do". Odds ratios (OR) were calculated and fall and fracture risk factors were assessed between quadrants. Physical performance of 400 fracture patients was assessed (mean age 64; female 70.8%). Patients performed as follows: 8.3% "can't do, don't do"; 3.0% "can do, don't do"; 19.3% "can't do, do do"; 69.5% "can do, do do". For the "can't do" group the OR for low PA was 9.76 (95% CI: 4.82-19.80). Both the "can't do, don't do" and "can't do, do do" group differed significantly compared to the "can do, do do" group on several fall and fracture risk factors and had lower physical performance. The "can do, do do" framework is able to identify fracture patients with an impaired physical performance. Of all FLS patients 20% "can't do, but "do do" while having a high prevalence of fall risk factors compared to persons that "can do, do do", which may indicate this group is prone to fall.

Language: en

Keywords

Accelerometer⁵; Falls⁴; Fracture liaison service¹; Physical activity²; Physical capacity³

Prediction of in-hospital falls using NRS, PACD Score and FallRS: a retrospective cohort study

Sieglwart J, Spennato U, Lerjen N, Mueller B, Schuetz P, Koch D, Struja T. *Geriatrics (Basel)* 2023; 8(3).

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

DOI 10.3390/geriatrics8030060 **PMID** 37367092

Abstract

BACKGROUND: Harmful in-hospital falls with subsequent injuries often cause longer stays and subsequently higher costs. Early identification of fall risk may help in establishing preventive strategies.

OBJECTIVE: To assess the predictive ability of different clinical scores including the Post-acute care discharge (PACD) score and nutritional risk screening score (NRS), and to develop a new fall risk score (FallRS).

METHODS: A retrospective cohort study of medical in-patients of a Swiss tertiary care hospital from January 2016 to March 2022. We tested the ability of the PACD score, NRS and FallRS to predict a fall by using the area under curve (AUC). Adult patients with a length of stay of ≥ 2 days were eligible.

RESULTS: We included 19,270 admissions (43% females; median age, 71) of which 528 admissions (2.74%) had at least one fall during the hospital stay. The AUC varied between 0.61 (95% confidence interval (CI), 0.55-0.66) for the NRS and 0.69 (95% CI, 0.64-0.75) for the PACD score. The combined FallRS score had a slightly better AUC of 0.70 (95% CI, 0.65-0.75) but was more laborious to compute than the two other scores. At a cutoff of 13 points, the FallRS had a specificity of 77% and a sensitivity of 49% in predicting falls.

CONCLUSIONS: We found that the scores focusing on different aspects of clinical care predicted the risk of falls with fair accuracy. A reliable score with which to predict falls could help in establishing preventive strategies for reducing in-hospital falls. Whether or not the scores presented have better predictive ability than more specific fall scores do will need to be validated in a prospective study.

Language: en

Keywords

prediction; falls; fall risk score; in-hospital; nutritional risk score; post-acute care discharge score

The direct and mediating effects of cognitive impairment on the occurrence of falls: a cohort study based on community-dwelling old adults

Zhang T, Yang C, Shu G, Gao C, Ma H, Zou L, Zuo J, Liu S, Yan J, Hu Y. *Front. Med. (Lausanne)* 2023; 10: e1190831.

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DOI 10.3389/fmed.2023.1190831 **PMID** 37359023

Abstract

BACKGROUND: Cognitive impairment has been reported to be associated with falls in older adults. However, the complex relationship among falls, cognitive impairment and its associated factors, which could be targeted with specific interventions, remains to be elucidated. This study aimed to examine the direct effects of cognitive impairment on falls, to identify the factors associated with cognitive impairment and to explore the mediation role of cognitive impairment in the association of fall with cognition related factors.

METHODS: This 1-year follow-up cohort study enrolled old adults aged 60 years or over. Information about demographic and anthropometric characteristics, fall outcomes, function and nutritional status were collected through face-to-face interview. Cognitive function was evaluated by the Montreal Cognitive Assessment (MoCA). Multivariable regression analyses were used to test the association between cognitive impairment and falls and to identify the factors related to cognitive impairment. Additionally, we conduct causal mediation analyses to estimate the mediation effects of cognitive impairment in the pathways of fall occurrence.

RESULTS: Of the 569 participants included in this study, 366 (64.32%) had cognitive impairment, 96 (16.87%) had fall history in the past 1 year, 81 (14.24%) experienced fall and 47 (8.26%) received treatment because of falling during the 1-year follow-up. The association between cognitive impairment and 1-year fall risk was confirmed after adjusting for multiple covariates [odds ratio (OR):2.03, 95% confidence interval (CI): 1.13-3.80]. IADL disability, depression and low grip strength were associated with a higher prevalence of cognitive impairment. While overweight, higher education and higher income level were found to be related to a lower risk of cognitive impairment. Among these associated factors, cognitive impairment mediated the positive association of falling with IADL ability and depression, and a negative relationship with education and income level.

CONCLUSION: Our study not only confirmed the direct influence of cognitive impairment on fall risk in older adults, but also suggested a mediating role that cognitive impairment played in the pathways of fall occurrence. Our finding could help develop more specific interventions for fall prevention.

Language: en

Keywords

epidemiology; falls; older people; cognitive impairment; mediation effects

The role of ultrasonographically measured rectus femoris muscle on falls in community-dwelling older adults: a single-center study

Güner M, Boğa, Topuz S, Okyar Baş A, Ceylan S, Çöteli S, Kahyaoğlu Z, Balcı C, Dogu BB, Cankurtaran M, Halil M. Eur. Geriatr. Med. 2023; ePub(ePub): ePub.

(Copyright © 2023, Elsevier Publishing)

DOI 10.1007/s41999-023-00823-9 **PMID** 37353629

Abstract

BACKGROUND: There are many risk factors for falls and sarcopenia has emerged as an important risk factor. Measuring muscle mass is a useful method to determine sarcopenia. Our aim was to determine the difference in muscle mass between older adults with (fallers) and without history of falls (non-fallers) using ultrasonography (US).

METHODS: Two hundred ten geriatric patients were enrolled. Fall was defined as an event declared by the person who fell. Sarcopenia was defined by EWGSOP2 criteria. Muscle mass was assessed by muscle ultrasonography of five different muscles.

RESULTS: The mean age of the whole study group was 74.1 ± 6.3 years and 58.1% (n = 122) of the total study population was female. Among the participants, 69 patients (31.3%) had a fall history. The sarcopenia ratio was 23.2% in the fallers, and it was 13.7% in the non-fallers, the difference was statistically insignificant ($p > 0.05$), the measurement of rectus femoris muscle (RF) thickness and cross-sectional area (RFCSA) were significantly smaller among the fallers than non-fallers ($p < 0.05$). The ROC analysis revealed that RF and RFCSA could determine the history of falls [for RF area under curve (AUC): 0.606, 95% confidence interval (CI) 0.526-0.686, $p = 0.010$ and for RFCSA AUC: 0.621, 95% CI 0.538-0.704, $p = 0.004$]. RFCSA was statistically relevant with a history of falls, regardless of age, sex, multimorbidity, incontinence, nutritional status, and frailty status.

CONCLUSION: Decreased RF and RFCSA determined by muscle US is a potentially modifiable risk factor for falls in older adults. Muscle US may be used for determining the risk of falls in older adults.

Language: en

Keywords

Falls; Older adults; Muscle ultrasonography; Sarcopenia

Tools for the assessment of risk-taking behavior in older adults with mild dementia: a cross-sectional clinical study

Compagne C, Gabriel D, Ferrero L, Magnin E, Tannou T. Brain Sci. 2023; 13(6).

(Copyright © 2023, Switzerland Molecular Diversity Preservation International (MDPI) AG)

DOI 10.3390/brainsci13060967 **PMID** 37371445

Abstract

Diseases such as Alzheimer's cause an alteration of cognitive functions, which can lead to increased daily risk-taking in older adults living at home. The assessment of decision-making abilities is primarily based on clinicians' global analysis. Usual neuropsychological tests such as the MoCA (Montreal Cognitive Assessment) cover most of the cognitive domains and include mental flexibility tasks. Specific behavioral tasks for risk-taking, such as the Balloon Analogue Risk Task (BART) or the Iowa Gambling Task (IGT), have been developed to assess risk-taking behavior, particularly in the field of addictology. Our cross-sectional study aims to determine whether the MoCA global cognitive assessment could be used as a substitute for behavioral tasks in the assessment of risky behavior. In the current study, 24 patients (age: 82.1 ± 5.9) diagnosed with mild dementia completed the cognitive assessment (MoCA and executive function assessment) and two behavioral risk-taking tasks (BART, simplified version of the IGT).

RESULTS revealed no relationship between scores obtained in the MoCA and behavioral decision-making tasks. However, the two tasks assessing risk-taking behavior resulted in concordant risk profiles. In addition, patients with a high risk-taking behavior profile on the BART had better Trail Making Test (TMT) scores and thus retained mental flexibility. These findings suggest that MoCA scores are not representative of risk-taking behavioral inclinations. Thus, additional clinical tests should be used to assess risk-taking behavior in geriatric settings. Executive function measures, such as the TMT, and behavioral laboratory measures, such as the BART, are recommended for this purpose.

Language: en

Keywords

Alzheimer's disease; behavioral tasks; clinical assessment; mild cognitive impairment; neuropsychological assessment; risky decision-making

Correction: A mixed methods process evaluation of a person-centred falls prevention program

Morris RL, Hill KD, Ackerman IN, Ayton D, Arendts G, Brand C, Cameron P, Etherton-Beer CD, Flicker L, Hill AM, Hunter P, Lowthian JA, Morello R, Nyman SR, Redfern J, Smit DV, Barker AL. BMC Health Serv. Res. 2023; 23(1): e695.

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DOI 10.1186/s12913-023-09743-7 **PMID** 37370149

Abstract

Correction: BMC Health Serv Res 19, 906 (2019)

<https://doi.org/10.1186/s12913-019-4614-z>

Following publication of the original article [1], an error was identified in the "Conclusion" section of the abstract.

The sentence "RESPOND was person-centred and reduced falls and fractures at a substantially lower dose, using fewer resources, than anticipated." should be replaced with "RESPOND, which was previously shown to reduce falls and fractures in the main trial analysis, was found to be delivered in a timely and person-centred manner, at a substantially lower dose, using fewer resources than anticipated."

The original article [1] has been corrected.

Language: en

Description and implications of falls in patients hospitalized due to COVID-19

Venema DM, Hester A, Clapper K, Kennel V, Quigley P, Reames C, Skinner A. J. Nurs. Care Qual. 2023; ePub(ePub): ePub.

(Copyright © 2023, Lippincott Williams and Wilkins)

DOI 10.1097/NCQ.0000000000000733 **PMID** 37350615

Abstract

BACKGROUND: Many hospital quality indicators, including falls, worsened during the COVID-19 pandemic. Patients hospitalized with COVID-19 may be at risk for falling due to the disease itself, patient characteristics, or aspects of care delivery.

PURPOSE: To describe and explore falls in patients hospitalized with COVID-19.

METHODS: We pooled data from 107 hospitalized adult patients who fell between March 2020 and April 2021. Patients who fell had a current, pending, or recent diagnosis of COVID-19. We analyzed patient characteristics, fall circumstances, and patient and organizational contributing factors using frequencies, the chi-square test, and Fisher's exact test.

RESULTS: Patient contributing factors included patients' lack of safety awareness, impaired physical function, and respiratory concerns. Organizational contributing factors related to staff and the isolation environment.

CONCLUSIONS: Recommendations for managing fall risk in patients hospitalized with COVID-19 include frequent reassessment of risk, consideration of respiratory function as a risk factor, ongoing patient education, assisted mobility, and adequate staff training.

Language: en

Gait characteristics related to fall risk in patients with cerebral small vessel disease

Wang Y, Li Y, Liu S, Liu P, Zhu Z, Wu J. *Front. Neurol.* 2023; 14: e1166151.

(Copyright © 2023, Frontiers Research Foundation)

DOI 10.3389/fneur.2023.1166151 **PMID** 37346167

Abstract

BACKGROUND: Falls and gait disturbance are significant clinical manifestations of cerebral small vessel disease (CSVD). However, few relevant studies are reported at present. We aimed to investigate gait characteristics and fall risk in patients with CSVD.

METHODS: A total of 119 patients with CSVD admitted to the Department of Neurology at Tianjin Huanhu Hospital between 17 August 2018 and 7 November 2018 were enrolled in this study. All patients underwent cerebral magnetic resonance imaging scanning and a 2-min walking test using an OPAL wearable sensor and Mobility Lab software. Relevant data were collected using the gait analyzer test system to further analyze the time-space and kinematic parameters of gait. All patients were followed up, and univariate and multivariate logistic regression analyses were conducted to analyze the gait characteristics and relevant risk factors in patients with CSVD at an increased risk of falling.

RESULTS: All patients were grouped according to the presence or absence of falling and fear of falling and were divided into a high-fall risk group ($n = 35$) and a low-fall risk group ($n = 72$). Logistic multivariate regression analysis showed that the toe-off angle [odds ratio (OR) = 0.742, 95% confidence interval (CI) 0.584-0.942, $p < 0.05$], toe-off angle coefficient of variation (CV) (OR = 0.717, 95% CI: 0.535-0.962, $p < 0.05$), stride length CV (OR = 1.256, 95% CI: 1.017-1.552, $p < 0.05$), and terminal double support CV (OR = 1.735, 95% CI: 1.271-2.369, $p < 0.05$) were statistically significant ($p < 0.05$) and were independent risk factors for high-fall risk in patients with CSVD.

CONCLUSION: CSVD patients with seemingly normal gait and ambulation independently still have a high risk of falling, and gait spatiotemporal-kinematic parameters, gait symmetry, and gait variability are important indicators to assess the high-fall risk. The decrease in toe-off angle, in particular, and an increase in related parameters of CV, can increase the fall risk of CSVD patients.

Language: en

Keywords

walking; fall; gait analysis; cerebral small vessel disease; gait parameters

Outcomes after stairway falls in a rural Appalachian trauma center

Zaskey M, Seely KD, Hansen M, Collins HE, Burns A, Burns B. Surgery 2023; ePub(ePub): ePub.

(Copyright © 2023, Elsevier Publishing)

DOI 10.1016/j.surg.2023.05.006 PMID 37380572

Abstract

BACKGROUND: Injuries due to falls represent one of the most common etiologies of traumatic injury in the United States. Stairway-related falls in particular can lead to significant morbidity, mortality, and concomitant long-term disability and economic costs. Our study aims to evaluate the outcomes of patients presenting to a rural academic trauma center after experiencing a fall down stairs.

METHODS: This was a single institution retrospective analysis of data extracted from our trauma registry. The study was considered exempt by Ballad Health Institutional Review Board. The data included patients aged 18 years or older who presented to the emergency department after a fall down stairs between January 1, 2017, and June 17, 2022. Patients who experienced falls other than those involving stairs were excluded.

RESULTS: Of the 439 patients evaluated for falls down stairs, 259 (58.9%) were aged ≥ 65 years. Compared with younger patients, older patients required significantly longer hospital admissions (4.8 vs 3.6 days, $P < .003$), had significantly higher injury severity scores (9.1 vs 6.8, $P < .05$), and were more likely to be discharged to a posthospital care facility (51% vs 14.9%, $P < .05$). There was no difference in length of intensive care unit stay (3.8 vs 3.6 days, $P < .72$), ventilator days (3.3 vs 3.3 days, $P < .97$), or mortality (7% vs 3%, $P < .08$). When considering sex, male patients had significantly worse outcomes in injury severity score (9.0 vs 7.6, $P < .02$) and mortality (10% vs 2%, $P < .0002$) but no difference in hospital (4.5 vs 4.0 days, $P < .20$), intensive care unit (3.8 vs 3.5 days, $P < .59$) or ventilator days (2.8 vs 4.3 days, $P < .27$) when compared with female patients.

CONCLUSION: Patients aged 65 years or older who experience a fall down stairs are more severely injured and require more posthospital care. Our findings demonstrate that males have an elevated risk of mortality and increased injury severity compared to female patients. Previous findings from our institution examining injuries from falls, including a sub-analysis on ground-level falls, have shown similar sex disparity. This study shows the necessity of preventing stair-related falls, especially in the older population.

Language: en

Tai Ji Quan and fall risk

Hu YT, Wu SY, Kao YS. J. Clin. Oncol. 2023; ePub(ePub): ePub.

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Abstract

We are glad to read the study by Winters-Stone et al,¹ which showed that there was no substantial decrease in falls observed for Tai Ji Quan or strength training compared with the stretching control group in postmenopausal female patients who had undergone chemotherapy. However, there are several concerns that need to be addressed and discussed in this study to enhance its validity and reliability.

The first concern that needs to be addressed is that cancer therapy often results in poor appetite and weak anabolic effects, leading to malnutrition in this population. Adequate protein intake is crucial for muscle building and is essential for the benefits derived from strength training. It is recommended that individuals undergoing chemotherapy consume 1.5 g of protein per kilogram of body weight per day to meet their protein demands.² However, the article fails to mention the protein intake of each group, which is an important factor to consider when evaluating the effectiveness of the interventions.

The second concern that needs to be addressed is that muscle hypertrophy is dependent on higher intensity and lower repetitions...

Language: en

The effect of balance, walking capacity, and fear of falling on the level of community integration in individuals with Multiple Sclerosis: a cross-sectional study

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Abstract

BACKGROUND: Social participation levels of individuals with Multiple Sclerosis (iwMS) are lower than those of healthy individuals.

OBJECTIVE: This study aimed to evaluate to which extent the walking capacity, balance, and fear of falling (FoF) affect the community integration levels of iwMS.

METHODS: Thirty-nine iwMS were evaluated for their participation levels [The Community Integration Questionnaire (CIQ)], walking capacity [The Six-Minute Walk Test (6MWT)], balance [Kinesthetic Ability Trainer (SportKAT®)], and FoF [The Modified Falls Efficacy Scale (MFES)]. Correlation and regression analyses were performed to detect the effects of SportKAT®, 6MWT, and MFES on CIQ.

RESULTS: CIQ scores were significantly correlated with 6MWT ($p = .043$) and MFES ($p = .005$) scores, while CIQ was not related with static (for two feet test $p = .356$, for right single-leg stance test $p = .412$, for left single-leg stance test $p = .730$) and dynamic balance (for clockwise test $p = .097$, for counterclockwise test $p = .540$) measured with the SportKAT®. It was found that CIQ could be predicted by 6MWT and MFES at the level of 16% and 25%, respectively.

CONCLUSION: FoF and walking capacity are associated with community integration in iwMS. Therefore, physiotherapy and rehabilitation programs of iwMS should be combined with treatment goals to increase community integration, balance, and gait and decrease the disability and FoF from an early stage. Comprehensive studies examining other factors that may impact participation in iwMS with different levels of disability are needed.

Language: en

Keywords

participation; balance; fear of falling; Multiple Sclerosis; walking capacity