

SafetyLit November 26th, 2017**Are there associations with age and sex in walking stability in healthy older adults?**

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Gait Posture 2017; 60: 65-70.

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DOI 10.1016/j.gaitpost.2017.11.010 **PMID** 29161624

Abstract

The variability of the centre of pressure (COP) during walking can provide information in relation to stability when walking. The aim of this study was to investigate if age and sex were associated with COP variability, COP excursions, and COP velocities during walking. One-hundred and fourteen older adults (age 65.1±5.5 yrs.) participated in the study. A Kistler force platform (1000Hz) recorded the ground reaction forces and COPs during walking at a self-selected walking speed. The stance phase was divided, using the vertical GRF, into four sub-phases: loading response (LR), mid-stance (MSt), terminal stance (TSt), and pre-swing (PSw). The standard deviations of the COP displacement (variability), the COP velocity, and COP excursion in the medial-lateral and anterior-posterior directions, as well as the resultant magnitude were assessed. When controlling for walking speed, a greater age was associated with a higher variability and excursion of the COP during LR only suggesting that stability is maintained during the majority of the stance phase. During LR lower COP velocity was significantly associated for females for anterior-posterior and total COP, which may be a strategy to facilitate stability before, and moving into, MSt and TSt.

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PDF Y Endnote Y**Change in fear of falling in Parkinson's disease: a two-year prospective cohort study**

Gazibara T, Tepavcevic DK, Svetel M, Tomić A, Stankovic I, Kostić VS, Pekmezović T.

Int. Psychogeriatr. 2017; ePub(ePub): ePub.

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DOI 10.1017/S1041610217002514 **PMID** 29145921

Abstract

BACKGROUND: Fear of falling in Parkinson's disease (PD) has been suggested as predictor of future falling. The purpose of this study was to compare fear of falling score after two years of follow-up with those observed at baseline and to assess factors associated with change in fear of falling over time.

METHODS: A total of 120 consecutive persons with PD were recruited and followed for two years. Fear of falling was assessed by using the 10-item Falls Efficacy Scale (FES). Occurrence of falling was registered during the first year of follow-up.

RESULTS: After two years, the average FES score statistically significantly changed ($p = 0.003$) from 30.5 to 37.5 out of 100 (increase of 22.9%). We observed that median scores of all FES items, except for "Preparing a meal, not requiring carrying of heavy or hot objects" and "Personal grooming," significantly increased after two-year follow-up. After accounting for age, gender, PD duration, levodopa dosage, Hoehn and Yahr stage, Unified Parkinson's Disease Rating Scale score three, depression, anxiety, and falling, we observed that sustaining greater number of falls in the first year

of follow-up was associated with higher increase in FES score after two years (odds ratio 3.08, 95% confidence interval 1.30-4.87).

CONCLUSION: After two years of follow-up, we observed a decrease in confidence at performing nearly all basic daily activities. Fall prevention programs should be prioritized in management of PD.

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Cognitive reserve as a variable impacting the effectiveness of rehabilitation on balance in Parkinson's disease

Piccinini G, Imbimbo I, Ricciardi D, Coraci D, Santilli C, Lo Monaco MR, Loreti C, Vulpiani MC, Silveri MC, Padua L.

Eur. J. Phys. Rehabil. Med. 2017; ePub(ePub): ePub.

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Abstract

BACKGROUND: Cognitive reserve (CR) can be considered an active expression of brain resilience in response to damage. Several studies have shown the influence of CR on cognitive impairment and its relationship with cognitive function in Parkinson's disease (PD).

AIM: To show if CR influences the effectiveness of balance rehabilitation in PD patients who performed a conventional rehabilitative treatment.

DESIGN: Observational longitudinal study.

SETTING: Neurology outpatient Unit, University Hospital.

POPULATION: Fifty-three patients affected by idiopathic PD, stage 2-3 at the Hoehn and Yahr scale.

METHODS: Each patient underwent 32 group sessions of conventional rehabilitative treatment. At baseline, patient CR was assessed by the Cognitive Reserve Index questionnaire (CRIq). The primary outcome was the evaluation of static and dynamic balance modifications, induced by the treatment, through the Berg Balance Scale (BBS), assessed at T0 and T1. Mini Mental State Examination, Unified Parkinson's Disease Rating Scale Part III (clinician-scored monitored motor evaluation) and Brief Intelligence Test were assessed only at T0 and used as descriptive variables.

RESULTS: Considering the clinically meaningful change, BBS improved in 26% of patients worsened in 2% and was unchanged in 72%. BBS score significantly improved in older patients, and in those with lower CRI total score. A significant inverse correlation was observed between changes in BBS and work and education related CR. Patients with lower baseline BBS score showed more improvement in balance.

CONCLUSIONS: We found an inverse correlation between CR level and balance improvement in PD patients who underwent conventional rehabilitation: higher improvement in BBS was observed in those with a lower CRI score. This may suggest that patients with higher CRI could benefit from more stimulating modes of non conventional rehabilitation (e.g. robotic, virtual reality).

REHABILITATION IMPACT: Rehabilitation should be individually tailored with CR considered as a significant variable.

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Comparison of fall prediction by the Hessisch Oldendorf Fall Risk Scale and the Fall Risk Scale by Huhn in neurological rehabilitation: an observational study

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Clin. Rehabil. 2017; ePub(ePub): ePub.

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DOI 10.1177/0269215517741666 **PMID** 29160093

Abstract

OBJECTIVE: To calculate scale performance of the newly developed Hessisch Oldendorf Fall Risk Scale (HOSS) for classifying fallers and non-fallers in comparison with the Risk of Falling Scale by Huhn (FSH), a frequently used assessment tool.

DESIGN: A prospective observational trial was conducted. **SETTING:** The study was performed in a large specialized neurological rehabilitation facility. **SUBJECTS:** The study population (n = 690) included neurological and neurosurgery patients during neurological rehabilitation with varying levels of disability. Around the half of the study patients were independent and dependent in the activities of daily living (ADL), respectively. **INTERVENTIONS:** Fall risk of each patient was assessed by HOSS and FSH within the first seven days after admission. **MAIN MEASURES:** Event of fall during rehabilitation was compared with HOSS and FSH scores as well as the according fall risk. Scale performance including sensitivity and specificity was calculated for both scales.

RESULTS: A total of 107 (15.5%) patients experienced at least one fall. In general, fallers were characterized by an older age, a prolonged length of stay, and a lower Barthel Index (higher dependence in the ADL) on admission than non-fallers. The verification of fall prediction for both scales showed a sensitivity of 83% and a specificity of 64% for the HOSS scale, and a sensitivity of 98% with a specificity of 12% for the FSH scale, respectively.

CONCLUSION: The HOSS shows an adequate sensitivity, a higher specificity and therefore a better scale performance than the FSH. Thus, the HOSS might be superior to existing assessments.

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Economic burden of informal caregiving associated with history of stroke and falls among older adults in the U.S.

Joo H, Wang G, Yee SL, Zhang P, Sleet D. *Am. J. Prev. Med.* 2017; 53(6S2): S197-S204.

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Abstract

INTRODUCTION: Older adults are at high risk for stroke and falls, both of which require a large amount of informal caregiving. However, the economic burden of informal caregiving associated with stroke and fall history is not well known.

METHODS: Using the 2010 Health and Retirement Study, data on non-institutionalized adults aged ≥65 years (N=10,129) in 2015-2017 were analyzed. Two-part models were used to estimate informal caregiving hours. Based on estimates from the models using a replacement cost approach, the authors derived informal caregiving hours and costs associated with falls in the past 2 years for stroke and non-stroke persons.

RESULTS: Both the prevalence of falls overall and of falls with injuries were higher among people with stroke than those without (49.5% vs 35.1% for falls and 16.0% vs 10.3% for injurious falls, $p < 0.01$). Stroke survivors needed more informal caregiving hours than their non-stroke counterparts, and the number of informal caregiving hours was positively associated with non-injurious falls and even more so with injurious falls. The national burden of informal caregiving (2015 U.S. dollars) associated with injurious falls amounted to \$2.9 billion (95% CI=\$1.1 billion, \$4.7 billion) for stroke survivors (about 0.5 million people), and \$6.5 billion (95% CI=\$4.3 billion, \$8.7 billion) for those who never had a stroke (about 3.6 million people).

CONCLUSIONS: In U.S. older adults, informal caregiving hours and costs associated with falls are substantial, especially for stroke survivors. Preventing falls and fall-related injuries, especially among stroke survivors, therefore has potential for reducing the burden of informal caregiving.

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Exercise dynamic stability under unstable conditions increases muscle strength and balance ability in the elderly

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Abstract

The purpose of the current study was to assess the effectiveness of a specific exercise intervention of mechanisms to control dynamic postural stability under unstable conditions in old adults. Forty-seven old adults (65-80 years) were assigned to two experimental groups (muscle strength group, $n=15$, perturbation-based group, $n=16$) and a control group ($n=16$). The strength group performed resistance exercises for legs and trunk muscles, while the perturbation-based group exercised mechanisms of dynamic stability under unstable conditions. The training duration was 14 weeks, with training sessions twice a week for 1.5 h. Muscle strength, balance ability and balance recovery performance were investigated before and after the interventions using maximal isometric plantar flexion and knee extension contractions, the approach of the center of pressure to the anterior limits of stability and simulated forward falls. Both interventions increased balance recovery performance in simulated forward falls (81%, $d=1.50$ and 80% $d=1.08$ in the muscle strength and perturbation-based group, respectively), while the control group did not show any changes. Plantar flexor strength increased 20% ($d=0.72$) in the muscle strength and 23% ($d=1.03$) in the perturbation-based group, while muscle strength of the knee extensors increased only in the muscle strength group (8%, $d=0.76$). On the other hand, only the perturbation-based group showed a significant improvement (38%, $d=1.61$) of standing balance ability. We conclude that a perturbation-based training program focusing on exercising mechanisms of dynamic stability on unstable conditions has the potential to enhance muscle strength as well as sensory information processing within the motor system during sudden and static balance tasks and, as a consequence, reduce the risk of falls in old adults. This article is protected by copyright. All rights reserved.

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Fall risk assessment tools for use among older adults in long-term care settings: a systematic review of the literature

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Australas. J. Ageing 2017; ePub(ePub): ePub.

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Abstract

OBJECTIVE: To conduct a systematic review of published fall risk assessment tools (FRATs) tested for predictive validity among older adults in long-term care (LTC).

METHODS: A systematic search was conducted using five databases. Only studies reporting on sensitivity and specificity values, conducted in LTC on populations primarily aged over 60 years, were considered.

RESULTS: Fifteen papers were included and three different categories of FRATs emerged: multifactorial assessment tools, functional mobility assessments and algorithms. Several FRATs showed moderate-to-good predictive validity and reliability, with the Modified Fall Assessment Tool and the Peninsula Health Falls Risk Assessment Tool (PHFRAT) also demonstrating good feasibility.

CONCLUSION: Evidence for the best choice of FRAT for use in LTC remains limited. Further research is warranted for the PHFRAT, recommended for use in LTC by best practice guidelines, before its establishment as the tool of choice for these clinical settings.

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Patient safety culture in care homes for older people: a scoping review

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DOI 10.1186/s12913-017-2713-2 **PMID** 29157257

Abstract

BACKGROUND: In recent years, there has been an increasing focus on the role of safety culture in preventing incidents such as medication errors and falls. However, research and developments in safety culture has predominantly taken place in hospital settings, with relatively less attention given to establishing a safety culture in care homes. Despite safety culture being accepted as an important quality indicator across all health and social care settings, the understanding of culture within social care settings remains far less developed than within hospitals. It is therefore important that the existing evidence base is gathered and reviewed in order to understand safety culture in care homes.

METHODS: A scoping review was undertaken to describe the availability of evidence related to care homes' patient safety culture, what these studies focused on, and identify any knowledge gaps within the existing literature. Included papers were each reviewed by two authors for eligibility and to draw out information relevant to the scoping review.

RESULTS: Twenty-four empirical papers and one literature review were included within the scoping review. The collective evidence demonstrated that safety culture research is largely based in the USA, within Nursing Homes rather than Residential Home settings. Moreover, the scoping review

revealed that empirical evidence has predominantly used quantitative measures, and therefore the deeper levels of culture have not been captured in the evidence base.

CONCLUSIONS: Safety culture in care homes is a topic that has not been extensively researched. The review highlights a number of key gaps in the evidence base, which future research into safety culture in care home should attempt to address.

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Psychological correlates of fear of falling: findings from the German Aging Survey

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DOI 10.1111/ggi.13190 **PMID** 29143433

Abstract

AIM: The aim of the present study was to identify general psychological factors related to fear of falling.

METHODS: Data drawn from national probability sampling of the German population aged ≥40 years were used (German Aging Survey; n = 7779). The fear of falling and the psychological factors of loneliness, life satisfaction, positive affect, negative affect, optimism, self-efficacy, self-esteem, self-regulation and perceived stress were collected in self-administered questionnaires. Multiple logistic regression models controlling for sociodemographic, lifestyle and health-related variables were used to determine the psychological correlates of fear of falling.

RESULTS: The prevalence of fear of falling was 18% for all individuals. All psychological factors showed strong bivariate associations with fear of falling. In the multiple regression analyses, higher levels of loneliness, lower life satisfaction, lower positive affect and higher negative affect, as well as lower levels of optimism, self-efficacy, self-esteem, self-regulation and more perceived stress, were associated with increased fear of falling after controlling for sociodemographic factors, various lifestyle factors and morbidity.

CONCLUSIONS: The psychological factors considered in the present study are important for characterizing people with fear of falling. Because effective interventions to treat the fear of falling are available, our study might help to address this target group more accurately.

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Quality of life and fall risk in frail hospitalized elderly patients

Oztürk ZA, Özdemir S, Türkbeyler IH, Demir Z.

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(Copyright © 2017, Scientific and Technical Research Council of Turkey)

DOI 10.3906/sag-1610-107 **PMID** 29151307

Abstract

BACKGROUND/AIM: Frailty is a complex, multifactorial, and important geriatric syndrome characterized by decline in physiological reserves and functional deficiency in multiple systems. The aim of the current study is to investigate the prevalence of frailty and to determine the correlation between quality of life (QoL) and falling risk in geriatric hospitalized patients.

MATERIALS AND METHODS: A total of 420 patients, aged 65 years and above, were enrolled in the study. All participants were hospitalized at a university hospital in the internal medicine clinics. The Cardiovascular Health Study (CHS) frailty scale, Health-Related Quality of Life Short Form (SF-36) scale, and Hendrich II Fall Risk Model were administered to the patients. Demographic data of patients, number of chronic diseases, and information on used medication were also collected.

RESULTS: The median age of patients was 71.9 ± 6.3 years and 49.5% of the patients were female. By applying the CHS frailty scale, the proportion of frail patients was determined to be 65.5%. There were statistically significant differences among quality of life mean scores of robust, prefrail, and frail patients ($P < 0.001$). Frail patients had the lowest scores in all SF-36 subgroups. Eighty-three (19.8%) patients were in the low-risk group while 337 (80.2%) were high-risk according to the Hendrich II Fall Risk Model. The rate of patients with high falling risk and poor QoL reached a maximum in the frail group (96%).

CONCLUSION: Frailty is an important geriatric syndrome in elderly hospitalized patients. Poor QoL and high falling risk are issues commonly experienced with frailty.

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Risk factors for falls among older Aboriginal and Torres Strait Islander people in urban and regional communities

Lukaszyk C, Radford K, Delbaere K, Ivers R, Rogers K, Sherrington C, Tiedemann A, Coombes J, Daylight G, Draper B, Broe T.

Australas. J. Ageing 2017; ePub(ePub): ePub.

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DOI 10.1111/ajag.12481 **PMID** 29143435

Abstract

OBJECTIVE: To examine associations between fall risk factors identified previously in other populations and falls among Aboriginal people aged 60 years and older, living in New South Wales, Australia.

METHODS: Interviews were conducted with older Aboriginal people in five urban and regional communities. Associations between past falls and 22 fall predictor variables were examined using linear and multiple regression analyses.

RESULTS: Of the 336 participants, 80 people (24%) reported at least one fall in the past year, and 34 (10%) reported two or more falls. Participants had an increased fall risk if they were female; used three or more medications; had arthritis, macular degeneration, depression, history of stroke; were unable to do their own housework; or were unable to do their own shopping.

CONCLUSION: Falls were experienced by one-quarter of study participants. Fall risk factors identified for older Aboriginal people appear to be similar to those identified in the general population. Understanding of fall risk factors may assist with the development of appropriate and effective community-led fall prevention programs.

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Risk factors for intracranial lesions and mortality in older patients with mild traumatic brain injuries

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Brain Inj. 2017; ePub(ePub): ePub.

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DOI 10.1080/02699052.2017.1382716 **PMID** 29156999

Abstract

PRIMARY OBJECTIVE: To identify risk factors for intracerebral lesion (ICL) in older adults with mild traumatic brain injury (MTBI) and evaluate the influence of comorbidities on outcomes.

RESEARCH DESIGN: Prospective cohort study.

METHODS AND PROCEDURES: Information was gathered on clinical history/examination, cranial computed tomography, admission Glasgow Coma Scale (GCS) score, analytical and coagulation findings, and mortality at 1 week post-discharge. Bivariate and multivariate logistic regression analyses were performed, calculating odds ratios for ICL with 95% confidence interval. $P < 0.05$ was considered significant. **MAIN OUTCOMES AND RESULTS:** Data were analyzed on 504 patients with mean \pm SD age of 79.37 ± 8.06 years. Multivariate analysis showed that traffic accident, GCS score of 14/15, transient consciousness loss, nausea, and receipt of antiplatelets were predictors of ICL, while SSRI and/or benzodiazepine intake was a protective factor. A score was assigned to patients by rounding OR values, and a score ≥ 1 indicated moderate/high risk of ICL.

CONCLUSIONS: MTBI management should be distinct in over-60 year-olds, who may not present typical symptoms, with frequent comorbidities. Knowledge of risk factors for post-MTBI ICL, associated with higher mortality, is important to support clinical decision-making. Further research is warranted to verify our novel finding that benzodiazepines and/or SSRI inhibitors may act as neuroprotectors.

PDF Y Endnote Y

Yoga's effect on falls in rural, older adults

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Complement. Ther. Med. 2017; 35: 57-63.

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Abstract

BACKGROUND: Unintentional falls affect 30% of people over age 65 years. Yoga has been shown to improve balance. We designed this study to examine if yoga reduces falls.

METHODS: We conducted 16 sessions of Hatha yoga over 8 weeks. Participants were randomly assigned to practice 10min of yoga daily at home in addition to 5-min relaxation exercises or relaxation exercises only (control group).

RESULTS: Of the 38 participants completing the intervention, 15 participants reported a total of 27 falls in the 6-months before the study, compared to 13 participants sustaining 14 falls in the 6 months from the start of the study ($p < 0.047$), without difference between yoga home-exercise and

home relaxation-only groups. Compared to baseline scores, all participants improved on the Berg Balance Scale (53-54 out of 56, $p=0.002$), the Functional Gait Assessment (22.9-25.8 out of 30 points, $p<0.001$), and the Dynamic Gait Index (20.6-22.4 out of 24 points, $p<0.001$). Right leg stand time improved from a mean of 13.3s to 17.1s ($p=0.020$) and standing forward reach distance from 26.0cm to 29.6cm ($p<0.001$). Without difference between groups. Confidence, with the Activities-specific Balance Confidence Scale, increased in the yoga home-exercise group (88%-93%, $p=0.037$) compared to 90% unchanged from pre-intervention in the home relaxation-only group.

CONCLUSION: Yoga classes reduce self-reported falls and improve balance measures. The addition of home yoga exercises did not enhance benefit over relaxation exercise only.

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Association between the severity of diabetic retinopathy and falls in an Asian population with diabetes: the Singapore Epidemiology of Eye Diseases Study

Gupta P, Aravindhan A, Gan ATL, Man REK, Fenwick EK, Mitchell P, Tan N, Sabanayagam C, Wong TY, Cheng CY, Lamoureux EL.

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DOI 10.1001/jamaophthalmol.2017.4983 **PMID** 29145583

Abstract

IMPORTANCE: The presence and severity of diabetic retinopathy (DR) may contribute to the risk of falling in persons with diabetes, but evidence is currently equivocal.

OBJECTIVE: To investigate the associations of diabetes and DR severity with the likelihood of falls in a multiethnic Asian population.

DESIGN, SETTING, AND PARTICIPANTS: Cross-sectional post hoc analysis of the Singapore Epidemiology of Eye Diseases study, a population-based study of participants from 3 ethnic groups (3280 Malay, 3400 Indian, and 3353 Chinese individuals) conducted from 2004 to 2011. Of these participants, 552 had data missing on diabetes, falls history, or other covariates or had ungradable fundus photographs and were excluded, leaving 9481 participants. These 9481 underwent a standardized clinical examination and responded to an interviewer-administered questionnaire that collected clinical and sociodemographic information. Multivariable logistic regression models adjusted for confounding fall risk factors assessed the associations of falls with diabetes, DR, and DR severity. A trend analysis was conducted in participants with diabetes to assess if risk of falling was associated with DR severity. Data were analyzed from January 1 through April 30, 2017.

EXPOSURES: Diabetes was defined as a random glucose level of at least 200 mg/dL, hemoglobin A1c concentration of at least 6.5% of total hemoglobin, self-reported use of diabetic medication, or history of physician-diagnosed diabetes. Severity of DR was graded as none, minimal, mild, moderate, and vision threatening (VT).

MAIN OUTCOMES AND MEASURES: A self-reported fall occurring in the previous 12 months, when the participant fell and landed on the ground.

RESULTS: Of the 9481 participants with a mean (SD) age of 58.7 (10.3) years (4781 women [50.4%]), 6612 (69.7%) had no diabetes and 2869 (30.3%) had diabetes, of whom 857 (29.9%) had DR in at least 1 eye. A history of falls was reported in 872 (13.2%) without diabetes, 328 (16.3%) with no DR, 44 (14.2%) with minimal DR, 54 (26.2%) with mild DR, 34 (27.2%) with moderate DR, and 43 (19.9%)

with VTDR (P for trend < .001). In multivariable models, those with DR were more likely to have fallen (odds ratio [OR], 1.31; 95% CI, 1.07-1.60; P = .008) compared with those with no diabetes; no associations were found for participants without DR compared with those with no diabetes. In addition, compared with participants with diabetes but without DR, those with mild (OR, 1.81; 95% CI, 1.23-2.67; P = .003) and moderate (OR, 1.89; 95% CI, 1.16-3.07; P = .01) nonproliferative DR were more likely to have fallen. Having VTDR was not independently associated with a higher likelihood of falling.

CONCLUSIONS AND RELEVANCE: The presence of mild to moderate nonproliferative DR was independently associated with an increased likelihood of falling in persons with diabetes compared with persons with diabetes but without DR. Management strategies for diabetes should incorporate fall education and prevention information, particularly in patients with early-stage DR. Longitudinal studies exploring the association between mild to moderate nonproliferative DR and falling will be required to confirm these findings.

PDF Y Endnote Y

Cognitive enhancers associated with decreased risk of injury in patients with dementia: a nationwide cohort study in Taiwan

Chao PC, Chien WC, Chung CH, Chu CW, Yeh CB, Huang SY, Lu RB, Chang HA, Kao YC, Yeh HW, Chiang WS, Chou YC, Tzeng NS.

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Abstract

This study aimed to investigate the associations among dementia, psychotropic medications and the risk of overall injuries. In this nationwide matched cohort study, a total of 144 008 enrolled patients \geq age of 50, with 36 002 study subjects who suffered from dementia and 108 006 controls matched for sex and age, from the Inpatient Dataset, for the period 2000-2010 in Taiwan were selected from the National Health Insurance Research Database, according to International Classification of Diseases, 9th Revision, Clinical Modification. When adjusting for the confounding factors, a Cox proportional hazards analysis was used to compare the risk of developing psychiatric disorders during the 10 years of follow-up. Of the study subjects, 6701 (18.61%) suffered injury when compared with 20 919 (19.37%) in the control group. The Cox regression analysis revealed that the study subjects were more likely to develop an injury (HR: 2.294, 95% CI=2.229 to 2.361, P<0.001) after adjusting for sex, age, monthly income, urbanization level, geographic region, and comorbidities. Psychotropic medications in the subjects with dementia were associated with the risk of injury (adjusted HR=0.217, 95% CI: 0.206 to 0.228, P<0.001). Cognitive enhancers, including acetylcholinesterase inhibitors and memantine, were associated with the risk of injury in the study subjects after being adjusted for all comorbidities and medications (adjusted HR=0.712(95% CI=0.512 to 0.925, P<0.01)). In conclusion, patients who suffered dementia had a higher risk of developing injury, and the cognitive enhancers were associated with the decreased risk of injury.

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Contrasting relationship between depression, quantitative gait characteristics and self-report walking difficulties in people with multiple sclerosis

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Abstract

The purpose of this study was to examine the relationship between depression and walking in the multiple sclerosis (MS) community. This study included 132 people with MS (PwMS) (80 women), mean EDSS 2.9 (S.D. = 1.7). Depression was assessed by the Hospital Anxiety and Depression Scale questionnaire. Spatio-temporal parameters of gait were studied using an electronic walkway. Participants filled out a valid self-rated measure of walking ability, the Multiple Sclerosis Walking Scale (MSWS-12) questionnaire. Computerized cognitive scores were included in the analysis in a multivariable analysis. Forty PwMS (30.3%) were classified as suffering from depression. Individuals in the depressed group walked slower than those in the non-depressed group; 92.2 (S.D. = 30.5) vs. 107.9 (S.D. = 29.4)cm/s, respectively. However, after controlling for age, gender and EDSS, the difference between the groups was considered non-significant; $p = 0.986$. As for the MSWS-12 self-report questionnaire, regardless of the controlling factors (age, gender, EDSS), scores for participants in the depressed group were significantly elevated, indicating poor walking abilities, compared to scores in the non-depressed group; 40.8 (S.D. = 15.9) vs. 26.6 (S.D. = 13.7); $p = 0.002$, respectively. Furthermore, according to the linear regression model, by utilizing the self-rated measure of walking ability, we were able to explain ~20% of the variance related to depression, while spatio-temporal parameters of gait were excluded from the model. In PwMS, depressive symptoms are related to self-perception of walking, but not to quantitative gait parameters. Copyright © 2017 Elsevier B.V. All rights reserved.

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Corrigendum to "Falls and fractures in the elderly with sinus node disease: the impact of pacemaker implantation"

Krasniqi N, Segalada D, Lüscher TF, Lippuner K, Haegeli L, Steffel J, Wolber T, Brunckhorst C, Holzmeister J, Hürlimann D, Duru F.

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Do gait patterns differ in men and women with multiple sclerosis?

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Abstract

BACKGROUND: Multiple Sclerosis (MS) affects men and women differently from several points of view: prevalence, severity of cognitive impairments and disability accumulation. However, it is unknown whether ambulatory dysfunctions are sex-related. This study investigated the existence of differences in spatio-temporal and kinematic parameters of gait in men and women with MS using 3D gait analysis.

METHODS: Gait patterns of 60 people with MS (pwMS, 32F, 28M) with low to moderate disability (average Expanded Disability Status Scale score 3, range 1-5.5) who underwent a gait analysis in the period 2014-2017 were retrospectively analyzed to calculate spatio-temporal parameters of gait and kinematics in the sagittal plane at hip, knee and ankle joints.

RESULTS: Significant differences between the groups were found in kinematics of gait. In particular, men exhibited reduced ankle plantar-flexion, increased knee flexion and hip flexion. In contrast, no differences were found in spatio-temporal parameters normalized by considering individuals' anthropometry.

CONCLUSIONS: The findings of the present study highlight the need to investigate gait dysfunctions in pwMS taking sex into consideration. Such an approach might be useful not only in better understanding the pathophysiology of gait disturbances originated by MS, but also in supporting a better orientation of rehabilitative treatments.

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