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A tailor-made exercise program for improving balance and mobility in older adults with type 2 diabetes

Ng TK, Kwan RLC, Lo SK, Cheing GL.

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Abstract

Effectiveness of an exercise program designed for improving postural control and mobility in older adults with type 2 diabetes was investigated. Ninety-three adults 65 or older diagnosed with type 2 diabetes and able to walk unaided were recruited. The intervention group received exercise training focused on ankle strengthening and mobility twice per week for 10 weeks. The control group did not participate in any exercise program. After 10 weeks, the intervention group showed significantly greater improvement in the mean Sensory Organization Test composite score (4.4 vs. 0.3; $p = 0.01$) as well as visual ratio (0.1 vs. 0.002; $p = 0.01$) and vestibular ratio (0.1 vs. 0.003; $p < 0.001$) than the control group after adjusting for covariates. A greater trend of improvement in the Timed Up and Go and Single-Leg Stance Test was also found in the intervention group. Exercise training focusing on the ankle is effective in enhancing the postural stability of older adults with type 2 diabetes and can potentially be effective in improving single-leg standing balance and mobility. Copyright 2017, SLACK Incorporated.

PDF Endnote Y

Are you "too old" to survive a traumatic brain injury?

Badenes R, Taccone FS.

Minerva Anesthesiol. 2017; ePub(ePub): ePub.

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Abstract [Abstract unavailable]

PDF N Endnote Y

Balance performance is task specific in older adults

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Biomed. Res. Int. 2017; 2017: e6987017.

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(Copyright © 2017, Hindawi Publishing)

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Abstract

Balance ability among the elderly is a key component in the activities of daily living and is divided into two types: static and dynamic. For clinicians who wish to assess the risk of falling among their elderly patients, it is unclear if more than one type of balance test can be used to measure their balance impairment. In this study, we examined the association between static balance measures and two dynamic balance field tests. One hundred and twelve community-dwelling older adults (mean age 74.6) participated in the study. They underwent the Tetrax static postural assessment and then performed the Timed Up and Go (TUG) and the Functional Reach (FR) Test as dynamic balance tests. In general, low-moderate correlations were found between the two types of balance tests. For women, age and static balance parameters explained 28.1-40.4% of the variance of TUG scores and 14.6-24% of the variance of FR scores. For men, age and static balance parameters explained 9.5-31.2% of the variance of TUG scores and 23.9-41.7% of the variance of FR scores. Based on our

findings, it is suggested that a combination of both static and dynamic tests be used for assessing postural balance ability.

PDF Y Endnote Y

Change in psychotropic drug use in Norwegian nursing homes between 2004 and 2011

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

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(Copyright © 2017, Cambridge University Press)

DOI 10.1017/S1041610217001788 **PMID** 28988552

Abstract

BACKGROUND: We aimed to assess whether there were any changes in the use of psychotropic drugs in Norwegian nursing homes between 2004 and 2011. Also, we investigated whether the predictors of use of specific psychotropic drug groups have changed.

METHODS: We conducted a secondary analysis of two cohort studies of two Norwegian nursing home samples (2004/05 and 2010/11). Multivariate models were applied.

RESULTS: We found a significant decrease in the prescription of antipsychotic drugs between 2004 and 2011 (0.63 OR, 95%CI = 0.49-0.82, $p < 0.001$) even after adjusting for relevant demographic and clinical variables. There are only minor changes for the other psychotropic drugs. We found that (1) the use of specific psychotropic drug groups as well as the number of psychotropic drugs used was associated with more affective symptoms and (2) the use of specific psychotropic drug groups as well as the number of psychotropic drugs used was associated with lower scores on the Physical Self-Maintenance scale.

CONCLUSION: This is the first study to show a robust decrease in antipsychotic drug use in nursing home patients with dementia unrelated to possible changes in case mix. The change might be explained by treatment recommendations against its use except in the most severe conditions of aggression or psychosis. Our findings indicate that it takes several years to implement scientific knowledge in clinical practice in nursing homes.

PDF Y Endnote Y

Cognitive impairment associated with locomotive syndrome in community-dwelling elderly women in Japan

Nakamura M, Tazaki F, Nomura K, Takano T, Hashimoto M, Hashizume H, Kamei I.

Clin. Interv. Aging 2017; 12: 1451-1457.

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(Copyright © 2017, Dove Medical Press)

DOI 10.2147/CIA.S142538 **PMID** 28979107 **PMCID** PMC5602419

Abstract

In our worldwide aging society, elderly people should maintain cognitive and physical function to help avoid health problems. Dementia is a major brain disease among elderly people, and is caused by cognitive impairment. The locomotive syndrome (LS) refers to a condition in which people require healthcare services because of problems associated with locomotion. The purpose of this study was to determine the association between cognitive impairment and LS. Study participants were 142 healthy elderly female volunteers living in a rural area in Japan. Cognitive function was assessed using the Mini-Mental State Examination (MMSE). A score of ≤ 26 points on the MMSE was used to indicate categorically defined poor cognitive performance (cognitive impairment). The LS was defined by a score ≥ 16 points, and non-LS as < 16 points, on the 25-question Geriatric Locomotive Function Scale (GLFS-25). Twenty-one participants (14.8%) had an MMSE score ≤ 26 , and 19.0% were found to have LS. Compared with the MMSE > 26 group, the ≤ 26 group was significantly older, had a

higher percentage of body fat, and a higher GLFS-25 score. Those with LS were significantly older, had a higher body mass index, a higher percentage of body fat, and a lower MMSE score. Participants in the LS group had higher odds of cognitive impairment than those without LS [odds ratio (OR) =3.08] by logistic regression analysis adjusted for age. Furthermore, participants with GLFS-25 scores ≥ 6 had higher odds of cognitive impairment than those with a GLFS-25 score < 6 by logistic regression analysis adjusted for both age (OR =4.44), and age and percent body fat (OR =4.12). These findings suggest that a strong relationship exists between the early stage of decreased motor function and cognitive impairment.

PDF Endnote

Confusion recurs 2 weeks after fall

Koneri N, Muck A, Adams BD.

J. Fam. Pract. 2017; 66(10): 635-637.

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(Copyright © 2017, Dowden Health Media)

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Abstract

A 77-year-old woman presented to the emergency department complaining of a headache following a syncopal episode (while standing) earlier that day. She said that she'd lost consciousness for several minutes, and then experienced several minutes of mild confusion that resolved spontaneously. On physical exam, she was oriented to person and place, but not time. She had a contusion in her left occipitoparietal region without extensive bruising or deformity. The patient had normal cardiopulmonary, abdominal, and neurologic exams. Her past medical history included hypertension and normal pressure hydrocephalus, and her vital signs were within normal limits. She was taking aspirin once daily. The patient's initial head and neck computerized tomography (CT) scans were normal, but she was hospitalized because of her confusion. During her hospitalization, the patient had mild episodic headaches that resolved with acetaminophen. The next day, her confusion resolved, and repeat CT scans were unchanged. She was discharged within 24 hours. Two weeks later, the patient returned to the hospital after her daughter found her on the toilet, unable to stand up from the sitting position. She was confused and experienced a worsening of headache during transport to the hospital. No recurrent falls or additional episodes of trauma were reported. A CT scan was performed.

<http://www.mdedge.com/jfponline/article/148147/neurology/confusion-recurs-2-weeks-after-fall>

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Consistency of traumatic brain injury reporting in older adults with and without cognitive impairment

Wilmoth K, LoBue C, Clem MA, Reddy R, Hynan LS, Didehbani N, Bell K, Womack KB, Hart J, Batjer H, Cullum CM.

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

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(Copyright © 2017, Informa - Taylor and Francis Group)

DOI 10.1080/13854046.2017.1378371 **PMID** 28988512

Abstract

OBJECTIVE: Medical history information regarding prior traumatic brain injury (TBI) usually relies on self-report, although little is known about the reliability of this information with regard to injuries sustained years or decades earlier. Even less is known about the reliability of self-reported medical history information in older individuals with cognitive impairment. To this end, we assessed the test-retest reliability of self-reported TBI history in a large, national sample.

METHODS: Participants (n = 4309) were older adults with intact cognition, mild cognitive impairment (MCI) and Alzheimer's disease (AD) from the National Alzheimer's Coordinating Center. Subjects provided TBI history information at baseline and one annual follow-up visit. Consistency of self-reported history of TBI with <5 minutes loss of consciousness (mLOC) and TBI with ≥ 5 mLOC reported at time 1 and 2 was analyzed across diagnostic groups.

RESULTS: Overall, subjects provided reports of TBI history at follow-up that were highly consistent with baseline reports (97.8-99.6% agreement), and Cohen's kappa coefficients were all larger than .80 and statistically significant, maximum $p < .001$. Furthermore, level of cognitive impairment was not a significant predictor of consistency in reporting.

CONCLUSIONS: These data are some of the first to suggest that self-report may be a consistent method of obtaining remote TBI history in the absence of medical records for older individuals, regardless of cognitive impairment.

PDF Y Endnote Y

Development and evaluation of low-cost walker with trunk support for senior citizen

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Rev. Esc. Enferm. USP 2017; 51: e03252.

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DOI 10.1590/S1980-220X2016020103252 **PMID** 29019531

Abstract

OBJECTIVE: Develop and evaluate a low-cost walker with trunk support for senior citizens.

METHOD: Two-stage descriptive study: development of a walker with trunk support and evaluation with fourth age senior citizens.

RESULTS: Twenty-three fourth age senior citizens were selected. The evaluated criteria were the immediate influence of the walker on the static stabilometry with baropodometer and the evaluation of gait with accelerometers monitoring time and amplitude of the hip movement. There was a significant decrease in the body oscillation of senior citizens with the use of the developed walker, and there were changes in the joint amplitudes of the hip, but they were not significant.

CONCLUSION: Using low-cost materials, it was possible to develop an equipment that met resistance and effectiveness requirements. The walker interfered in the balance of the senior citizens, reducing significantly the static body oscillation.

PDF Y Endnote Y

Fear of falling restricts activities of daily living after total hip arthroplasty: a one-year longitudinal study

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

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(Copyright © 2017, Informa - Taylor and Francis Group)

DOI 10.1080/07317115.2017.1364682 **PMID** 28990881

Abstract

OBJECTIVES: To determine the prevalence and time course in changes regarding the fear of falling and whether there are consequent restrictions in activities of daily living (ADL) after total hip arthroplasty (THA).

METHODS: This is 1-year longitudinal observational study. We recruited ninety-eight patients before and after THA. Fear of falling was assessed for 12 ADLs preoperatively and postoperatively at 3, 6, and 12 months following THA. In addition, we asked patients to answer whether they had refrained from performing each ADL because of fear of falling.

RESULTS: Fifty-two patients were enrolled for the analysis. The total fear of falling score during ADLs decreased with time after THA. The ADLs in which many patients (over 20%) felt fear even at 12 months were using the stairs (25%), sitting and standing from the floor (23%), and walking around the neighborhood (21%). Approximately 10% of patients were restricted in performing ADLs, such as sitting and standing from the floor, because of fear.

CONCLUSIONS: Patients undergoing THA frequently experience fear of falling during some ADLs even at 1 year after the operation, which could cause ADL restrictions. **CLINICAL IMPLICATIONS:** Clinicians should evaluate fear of falling and institute rehabilitation programs individually to decrease excessive fear that might lead to ADL restrictions.

PDF Y Endnote Y

Frailty and cerebral small vessel disease: a cross-sectional analysis of the Tasmanian Study of Cognition and Gait (TASCOG)

Siejka TP, Srikanth VK, Hubbard RE, Moran C, Beare R, Wood A, Phan T, Callisaya ML.

J. Gerontol. A Biol. Sci. Med. Sci. 2017; ePub(ePub): ePub.

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(Copyright © 2017, Gerontological Society of America)

DOI 10.1093/gerona/glx145 **PMID** 28977392

Abstract

BACKGROUND: Frailty is a prevalent geriatric condition associated with poor health outcomes. The pathogenesis of frailty is incompletely understood. We aimed to evaluate the relationship between cerebral small vessel disease (SVD) and frailty.

METHODS: People aged between 60 and 85 years were randomly selected from the electoral roll into the Tasmanian Study of Cognition and Gait. Participants completed standardized questionnaires regarding medical history and underwent objective sensorimotor, gait, and cognitive testing. These data were used to calculate a frailty index score. Magnetic resonance imaging was performed on all participants to measure SVD. Automated quantification was used to measure white matter hyperintensities (WMH), with manual consensus for subcortical infarction (SI) and cerebral microbleeds (CMB). Multivariable linear regression was used to determine the association between SVD and frailty.

RESULTS: The mean age of the sample ($n = 388$) was 72.0 years (SD 7.0), 44% (172/388) were female and the median Frailty Index was 0.20 (interquartile range 0.12, 0.27). WMH, SI, and CMB in unadjusted models were positively associated with higher frailty scores ($p < .05$). In final models including all brain variables, higher burden of WMH ($\beta = 2.16$; 95% confidence interval [CI] 0.75, 3.57; $p = .003$), but not SI ($\beta = 2.96$; 95% CI -0.44, 6.35; $p = .09$) or CMB ($\beta = -0.46$; 95% CI -4.88, 3.96; $p = .84$), was independently associated with a higher frailty score.

CONCLUSIONS: We provide cross-sectional evidence for a positive association between larger burden of WMH and frailty. Longitudinal design is required to determine the temporality of this relationship.

PDF Y Endnote Y

Impact of geriatric consultations on clinical outcomes of elderly trauma patients: a retrospective analysis

Dugan JP, Burns KM, Baldawi M, Heidt DG.

Am. J. Surg. 2017; ePub(ePub): ePub.

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(Copyright © 2017, Elsevier Publishing)

DOI 10.1016/j.amjsurg.2017.09.001 **PMID** 29017731

Abstract

INTRODUCTION: The elderly account for a large proportion of morbidity and mortality secondary to trauma, despite lower-energy mechanisms of injury and fewer trauma admissions. The benefit of geriatric trauma consultation services (GTCS) to this population remains unclear.

METHODS: We performed a retrospective cohort analysis of a GTCS, which was established in January 2015. Patients over 60 admitted to the trauma service from January of 2014 to February 2016 were eligible.

RESULTS: There were no significant differences in 30-day and in-hospital mortalities, mean ICU and total lengths of stay, or complication rates. However, if a single complication was experienced, post-GTCS patients were nearly three times more likely to experience multiple complications. More patients in the GTCS group were discharged home, but were readmitted four times more often.

CONCLUSIONS: A mandatory GTCS was not associated with improved patient outcomes, suggesting that management exclusively by the trauma team is at least equally effective in treatment of geriatric trauma.

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PDF Endnote**Impaired perceived timing of falls in the elderly**

Lupo J, Barnett-Cowan M. *Gait Posture* 2017; 59: 40-45.

Affiliation: Department of Kinesiology, University of Waterloo, Waterloo, Ontario, N2L 3G1, Canada.

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(Copyright © 2017, Elsevier Publishing)

DOI 10.1016/j.gaitpost.2017.09.037 **PMID** 28987765

Abstract

Falls are the leading cause of injury-related deaths and hospitalizations, with older adults at an increased risk. As humans age, physical changes and health conditions make falls more likely. While we know how the body reflexively responds to prevent injury during a fall, we know little about how people perceive the fall itself. We previously found that young adults required a fall to precede a comparison sound stimulus by approximately 44ms to perceive the two events as simultaneous. This may relate to common anecdotal reports suggesting that humans often describe distortions in their perception of time - time seems to slow down during a fall - with very little recollection of how and when the fall began. Here we examine whether fall perception changes with age. Young (19-25y) and older (61-72y) healthy adults made temporal order judgments identifying whether the onset of their fall or the onset of a comparison sound came first to measure the point of subjective simultaneity.

RESULTS show that fall perception is nearly twice as slow for older adults, where perturbation onset has to precede sound onset by ~88ms to appear coincident, compared to younger adults (~44ms). We suggest that such age-related differences in fall perception may relate to increased fall rates in older adults. We conclude that a better understanding of how younger versus older adults perceive falls may identify important factors for innovative fall prevention strategies and rehabilitative training exercises to improve fall awareness.

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PDF Y Endnote Y**Improvement of balance and general physical fitness in older adults by karate: a randomized controlled trial**

Witte K, Emmermacher P, Pliske G.

Complement. Med. Res. 2017; ePub(ePub): ePub.

(Copyright © 2017, S. Karger)

DOI 10.1159/000479151 **PMID** 29020668

Abstract [Abstract unavailable]

PDF Y Endnote Y

Integrated health care management of moderate to severe TBI in older patients-a narrative review

Schumacher R, Müri RM, Walder B. *Curr. Neurol. Neurosci. Rep.* 2017; 17(12): e92.

Affiliation: Division of Anaesthesiology, University Hospitals of Geneva, Geneva, Switzerland.

(Copyright © 2017, Holtzbrinck Springer Nature Publishing Group)

DOI 10.1007/s11910-017-0801-7 **PMID** 28986740

Abstract

PURPOSE OF REVIEW: Traumatic brain injuries are common, especially within the elderly population, which is typically defined as age 65 and older. This narrative review aims at summarizing and critically evaluating important aspects of their health care management in covering the entire pathway from prehospital care to rehabilitation and beyond. **RECENT FINDINGS:** The number of older patients with traumatic brain injury (TBI) is increasing, and there seem to be differences in all aspects of care along their pathway when compared to younger patients. Despite a higher mortality and a generally less favorable outcome, the current literature shows that older TBI patients have the potential to make significant improvements over time. More research is needed to evaluate the most efficient and integrated clinical pathway from prehospital interventions to rehabilitation as well as the optimal treatment of older TBI patients. Most importantly, they should not be denied access to specific treatments and therapies only based on age.

PDF Y Endnote Y

Making sense of frailty: an ethnographic study of the experience of older people living with complex health problems

Skilbeck JK, Arthur A, Seymour J.

Int. J. Older People Nurs. 2017; ePub(ePub): ePub.

Affiliation: University of Sheffield, Sheffield, UK.

(Copyright © 2017, John Wiley and Sons)

DOI 10.1111/opn.12172 **PMID** 28990309

Abstract

AIM: To explore how older people with complex health problems experience frailty in their daily lives.

BACKGROUND: A better understanding of the personal experience of frailty in the context of fluctuating ill-health has the potential to contribute to the development of personalised approaches to care planning and delivery.

DESIGN: An ethnographic study of older people, living at home, receiving support from a community matron service in a large city in the North of England.

METHODS: Up to six care encounters with each of ten older people, and their community matron, were observed at monthly intervals, over a period of time ranging from 4 to 11 months. Semi-structured interviews were conducted with the older participants in their own homes. Fieldwork took place over a 4-year period. Data analysis was undertaken using the constant comparative method.

FINDINGS: The experience of frailty was understood through the construction of four themes: Fluctuating ill-health and the disruption of daily living; Changes to the management of daily living; Frailty as fear, anxiety and uncertainty; Making sense of changes to health and daily living.

CONCLUSIONS: Older people work hard to shape and maintain daily routines in the context of complicated and enduring transitions in health and illness. However, they experience episodic moments of frailty, often articulated as uncertainty, where daily living becomes precarious and their resilience is threatened. Developing an understanding of the personal experiences of frail older people in the context of transition has the potential to inform nursing practice in person-centred care. **IMPLICATIONS FOR PRACTICE:** Nurses need to support frail older people to maintain

independence and continuity of personhood in the context of daily routines.

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PDF Y Endnote Y

Mitigating fall risk: a community fall reduction program

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Geriatr. Nurs. 2017; ePub(ePub): ePub.

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(Copyright © 2017, Elsevier Publishing)

DOI 10.1016/j.gerinurse.2017.08.014 **PMID** 28987715

Abstract

One fourth of all American's over 65 years of age fall each year. Falls are a common and often devastating event that can pose a serious health risk for older adults. Healthcare providers are often unable to spend the time required to assist older adults with fall risk issues. Without a team approach to fall prevention the system remains focused on fragmented levels of health promotion and risk prevention. The specific aim of this project was to engage older adults from the community in a fall risk assessment program, using the Stopping Elderly Accidents, Deaths & Injuries (STeADI) program, and provide feedback on individual participants' risks that participants could share with their primary care physician. Older adults who attended the risk screening were taking medications that are known to increase falls. They mentioned that their health care providers do not screen for falls and appreciated a community based screening.

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PDF Y Endnote Y

Mortality after high energy pelvic fractures in patients of age 65 or older

Keil DS, Gross S, Seymour RB, Sims S, Karunakar MA.

J. Orthop. Trauma 2017; ePub(ePub): ePub.

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(Copyright © 2017, Lippincott Williams and Wilkins)

DOI 10.1097/BOT.0000000000001041 **PMID** 28990979

Abstract

OBJECTIVES: To document in-hospital and 1-year mortality rates following high-energy pelvic fracture in patients age 65 or older as compared to a younger cohort.

DESIGN: Retrospective review. **SETTING:** Urban level 1 academic trauma center. **PATIENTS:** Seventy consecutive patients age ≥ 65 years treated for pelvic fracture resulting from high-energy mechanism from 2008 to 2011. One hundred forty patients age 18-64 were matched to the study population based on mechanism of injury and OTA Code 61 subtype for comparison.

INTERVENTION: Review of demographics, injury characteristics, hospital management, and mortality. **MAIN OUTCOME MEASUREMENTS:** Mortality.

RESULTS: The overall inpatient mortality rate was 10%. The older cohort exhibited an inpatient mortality rate three times higher than the younger cohort (18.6% vs. 5.7%, $p=0.003$). There was no difference in mortality 1-year post discharge (5.3% vs. 3.8%, $p=0.699$.) No significant differences in initial Glasgow Coma Scale or Injury Severity Score were identified (GCS 12.9 vs. 12.4, $p=0.363$; ISS 24.7 vs. 23.4, $p=0.479$). Multivariate analysis identified the Charlson Co-morbidity Index (CCI) ($p=0.012$) and AIS-chest ($p=0.005$) as independent predictors of in-hospital mortality, and CCI (0.005) and AIS-abdomen (0.012) for 1-year mortality.

CONCLUSIONS: After controlling for mechanism of injury and pelvic fracture classification, we found that adults ≥ 65 and those with multiple co-morbidities were more likely to die in the hospital than younger adults. However, mortality within 1-year post-discharge was low and did not differ between groups. This is in sharp contrast to the high rates of post-discharge mortality observed in elderly patients with hip fracture. **LEVEL OF EVIDENCE:** Retrospective Cohort Study, Level III.

PDF N Endnote Y

Outcomes of Mobilisation of Vulnerable Elders in Ontario (MOVE ON): a multisite interrupted time series evaluation of an implementation intervention to increase patient mobilisation

Liu B, Moore JE, Almaawiy U, Chan WH, Khan S, Ewusie J, Hamid JS, Straus SE.

Age Ageing 2017; ePub(ePub): ePub.

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(Copyright © 2017, Oxford University Press)

DOI 10.1093/ageing/afx128 **PMID** 28985310

Abstract

BACKGROUND: older patients admitted to hospitals are at risk for hospital-acquired morbidity related to immobility. The aim of this study was to implement and evaluate an evidence-based intervention targeting staff to promote early mobilisation in older patients admitted to general medical inpatient units.

METHODS: the early mobilisation implementation intervention for staff was multi-component and tailored to local context at 14 academic hospitals in Ontario, Canada. The primary outcome was patient mobilisation. Secondary outcomes included length of stay (LOS), discharge destination, falls and functional status. The targeted patients were aged ≥ 65 years and admitted between January 2012 and December 2013. The intervention was evaluated over three time periods-pre-intervention, during and post-intervention using an interrupted time series design.

RESULTS: in total, 12,490 patients (mean age 80.0 years [standard deviation 8.36]) were included in the overall analysis. An increase in mobilisation was observed post-intervention, where significantly more patients were out of bed daily (intercept difference = 10.56%, 95% CI: [4.94, 16.18]; $P < 0.001$) post-intervention compared to pre-intervention. Hospital median LOS was significantly shorter during the intervention period (intercept difference = -3.45 days, 95% CI: [-6.67,-0.23], $P = 0.0356$) compared to pre-intervention. It continued to decrease post-intervention with significantly fewer days in hospital (intercept difference = -6.1, 95% CI: [-11,-1.2]; $P = 0.015$) in the post-intervention period compared to pre-intervention.

CONCLUSIONS: this is a large-scale study evaluating an implementation strategy for early mobilisation in older, general medical inpatients. The positive outcome of this simple intervention on an important functional goal of getting more patients out of bed is a striking success for improving care for hospitalised older patients.

PDF N Endnote Y

Pelvic fractures in the Netherlands: epidemiology, characteristics and risk factors for in-hospital mortality in the older and younger population

Verbeek DO, Ponsen KJ, Fiocco M, Amodio S, Leenen LPH, Goslings JC.

Eur. J. Orthop. Surg. Traumatol. 2017; ePub(ePub): ePub.

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DOI 10.1007/s00590-017-2044-3 **PMID** 28993913

Abstract

PURPOSE: To examine nationwide epidemiology of pelvic fractures in the Netherlands and to compare characteristics and outcome of older versus younger patients as well as predictors for in-hospital mortality.

METHODS: Retrospective review of pelvic fracture patients admitted to all Dutch hospitals (2008-2012) utilizing National Trauma Registry. Average annual incidence of (minor and major) pelvic fractures was calculated for the population. Older (≥ 65 years) and younger (< 65 years) patients were compared. Multivariate regression analysis was performed to identify independent predictors for in-hospital mortality.

RESULTS: Of 11,879 pelvic fracture patients (61.8%, ≥ 65 years), annual incidence of pelvic fractures in older versus younger population was 57.9 versus 6.4 per 100,000 persons. Older patients had lower ISS (7.1 (SD 6.9) vs 15.4 (SD 13.4)) and less frequently had severe associated injuries (15.6 vs 43.5%), an admission systolic blood pressure (SBP) ≤ 90 mmHg (1.6 vs 4.1%) or Glasgow Coma Score (GCS) ≤ 12 (2.0 vs 13.3%) (all, $p < 0.01$). In-hospital mortality was equal in older and younger patients (5.3 vs 4.8%; $p = 0.28$). In both subgroups, greatest independent predictors for in-hospital mortality were GCS ≤ 12 , ISS ≥ 16 , and SBP ≤ 90 mmHg and in all patients age ≥ 65 (OR 6.59 (5.12-8.48); $p < 0.01$).

CONCLUSION: The annual incidence of (both minor and major) pelvic fractures in the older population was substantially higher than in the younger population. Elderly patients had a disproportionately high in-hospital mortality rate considering they were less severely injured. Among other factors, age was the greatest independent predictor for in-hospital mortality in all pelvic fracture patients.

PDF Y Endnote Y

Study of the variations of fall induced hip fracture risk between right and left femurs using CT-based FEA

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Biomed. Eng. Online 2017; 16(1): e116.

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DOI 10.1186/s12938-017-0407-y **PMID** 28974207

Abstract

BACKGROUND: Hip fracture of elderly people-suffering from osteoporosis-is a severe public health concern, which can be reduced by providing a prior assessment of hip fracture risk. Image-based finite element analysis (FEA) has been considered an effective computational tool to assess the hip fracture risk. Considering the femoral neck region is the weakest, fracture risk indicators (FRI) are evaluated for both single-legged stance and sideways fall configurations and are compared between left and right femurs of each subject. Quantitative Computed Tomography (QCT) scan datasets of thirty anonymous patients' left and right femora have been considered for the FE models, which have been simulated with an equal magnitude of load applied to the aforementioned configurations. The requirement of bilateral hip assessment in predicting the fracture risk has been explored in this study.

RESULTS: Comparing the sideways fall and single-legged stance, the FRI varies by 64 to 74% at the superior aspects and by 14 to 19% at the inferior surfaces of both the femora. The results of this in vivo analysis clearly substantiate that the fracture is expected to initiate at the superior surface of femoral neck region if a patient falls from his/her standing height. The distributions of FRI between the femurs vary considerably, and the variability is significant at the superior aspects. The p value (= 0.02) obtained from paired sample t-Test yields p value ≤ 0.05 , which shows the evidence of variability of the FRI distribution between left and right femurs. Moreover, the comparison of FRIs between the left and right femur of men and women shows that women are more susceptible to hip fracture than men.

CONCLUSIONS: The results and statistical variation clearly signify a need for bilateral hip scanning in predicting hip fracture risk, which is clinically conducted, at present, based on one hip chosen randomly and may lead to inaccurate fracture prediction. This study, although preliminary, may play

a crucial role in assessing the hip fractures of the geriatric population and thereby, reducing the cost of treatment by taking predictive measure.

PDF Y Endnote Y

The effect of perindopril on postural instability in older people with a history of falls-a randomised controlled trial

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Age Ageing 2017; ePub(ePub): ePub.

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(Copyright © 2017, Oxford University Press)

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Abstract

DESIGN: double-blind, parallel group, placebo-controlled randomised trial.

METHODS: we recruited people aged >65 years with at least one fall in the previous year.

Participants received 4 mg perindopril or placebo daily for 15 weeks. The primary outcome was the between-group difference in force-plate measured anteroposterior (AP) sway at 15 weeks.

Secondary outcomes included other measures of postural sway, limits of stability during maximal forward, right and left leaning, blood pressure, muscle strength, 6-min walk distance and falls. The primary outcome was assessed using two-way ANOVA, adjusted for baseline factors.

RESULTS: we randomised 80 participants. Mean age was 78.0 (SD 7.4) years; 60 (75%) were female.

About 77/80 (96%) completed the trial. At 15 weeks there were no significant between-group differences in AP sway with eyes open (mean difference 0 mm, 95% CI -8 to 7 mm, $P = 0.91$) or eyes closed (mean difference 2 mm, 95% CI -7 to 12 mm, $P = 0.59$); no differences in other measures of postural stability, muscle strength or function. About 16/40 (42%) of patients in each group had orthostatic hypotension at follow-up. The median number (IQR) of falls was 1 (0,4) in the perindopril versus 1 (0,2) in the placebo group ($P = 0.24$).

CONCLUSIONS: perindopril did not improve postural sway in older people at risk of falls. **CLINICAL TRIALS REGISTRATION:** ISRCTN58995463.

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Walking and balance ability gain from two types of gait intervention in adult patients with chronic hemiplegic stroke: a pilot study

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Assist. Technol. 2017; ePub(ePub): ePub.

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(Copyright © 2017, Rehabilitation Engineering and Assistive Technology Society of North America, Publisher Informa - Taylor and Francis Group)

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Abstract

This study examined whether the walking and balance ability of adult patients with chronic hemiplegic stroke are associated differentially with the degree of gain after 2 types of gait intervention. Twenty-four subjects with hemiplegic stroke were enrolled in this randomized study. Each subject participated in one of two gait intervention strategies: gait training with auditory feedback caused by active weight bearing on the paralyzed side (experimental group; EG) or general gait intervention over the ground (control group; CG). The walking and balance abilities were assessed before and after gait intervention. Significant improvements in the 10 m walking test, functional gait assessment (FGA) score, and center of pressure (COP) path length were observed after gait training in both groups ($p < 0.05$). The EG showed a larger increase in the 10 m walking

test, FGA score, and COP path length in the state of eyes opened and closed than the CG (18.2%, 27.0%, 24.8%, and 18.2%, respectively). The auditory feedback caused by active weight bearing on the paralyzed side appeared to be a more effective approach for improving the walking and balance ability in adult patients with hemiplegic stroke during walking training than general gait intervention.

PDF Y Endnote Y

Characteristics of older adults hospitalised following trauma in the Midland region of New Zealand

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(Copyright © 2017, New Zealand Medical Association)

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Abstract

AIM: To describe the epidemiology of injuries sustained by older adult trauma patients admitted to hospitals in the Midland region (population 886,000) of New Zealand.

METHODS: A review of older adult (≥ 65 years) trauma cases from the Midland Trauma Registry for the three-year period January 2012 to December 2014 was conducted. Demographics, mechanism of injury, severity of injuries, processes of care and outcomes were analysed.

RESULTS: Older adults accounted for 14% (2,278/15,700) of all injury cases captured by the registry during the study period (average annualised incidence 585/100,000 population). The majority of injuries (90%) were minor in nature (ISS 0-12) and 65% resulted from unintentional falls. Falls was the most common mechanism in the major trauma group (38%), followed closely by road traffic crash (30%). Home was the leading place of injury (56%), followed by road/street/highway (15%). Injury rates were significantly higher among non-Māori than Māori.

CONCLUSION: These findings illustrate the growing volumes and changing epidemiology of both major and minor trauma affecting older persons hospitalised following trauma in one of the four health regions of New Zealand. There is a need to prepare for an increase in demand for trauma services to meet the needs of an ageing population in New Zealand.

PDF Y Endnote Y

Dizziness handicap inventory score is highly correlated with markers of gait disturbance

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Abstract

OBJECTIVE: To evaluate the association between Dizziness Handicap Inventory-Screening version (DHI-S) score and spatiotemporal gait parameters using SoleSound, a newly developed, inexpensive, portable footwear-based gait analysis system.

STUDY DESIGN: Cross-sectional. **PATIENTS:** One hundred eighteen patients recruited from otology clinic.

INTERVENTION(S): Subjects completed the DHI-S survey and four uninterrupted walking laps wearing SoleSound instrumented footwear on a hard, flat surface for 100 m. **MAIN OUTCOME MEASURE(S):** For each subject, mean and coefficient of variation (CV) of stride length, cadence, walking speed,

foot-ground clearance, double-support time, swing period, and stance-to-swing were computed by considering 40 strides of steady-state walking within each lap. Linear regression models were employed to study correlations between these variables and DHI-S scores after adjusting for age, sex, and race/ethnicity.

RESULTS: Patients with higher DHI-S score took shorter steps and less steps per minute (-0.017 m and -1.1 steps/min per every four-point increase in DHI-S score, $p < 0.05$) than patients with a lower DHI-S score, with slower walking speed (-0.025 m/s per every four-point increase in DHI-S score, $p < 0.01$). Additionally, patients with higher DHI-S scores showed larger variability in all analyzed temporal parameters (+0.1% for CV of cadence, +0.5% for CV of double support period, +0.2% for CV of swing period, and +0.4% for CV of stance-to-swing, per every four-point increase in DHI-S score, $p < 0.01$).

CONCLUSION: SoleSound was effective in measuring a wide range of gait parameters. Patients' self-perception of vestibular handicap, as assessed with DHI-S, is associated with deterioration in measurable gait parameters independent of age.

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Epidemiology of special incidents: results from national mortality and morbidity registry and the associated factors in Iran in 2014

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Electron. Physician 2017; 9(8): 5113-5121.

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Abstract

BACKGROUND: Special incidents are harmful events that can result in people's death or injury. Despite registering special incidents' data in Iran, no study has yet been conducted to identify the types, rates, mortality and morbidity of such incidents and their associated factors. The present study was conducted to assess the epidemiology of incidents and their associated factors during 2014 in Iran.

METHODS: In this cross-sectional study, all special incidents of 2014 were examined. Data were initially collected by universities of medical sciences nationwide and then sent to the Disaster and Emergency Management Center in the Ministry of Health and Medical Education. The collected data were analyzed in this study using statistical tests of Chi-square and Pearson's correlation coefficient using SPSS ver. 14.5.

RESULTS: Out of 6,892 special incidents that occurred during 2014 in Iran, 6,781 cases were included, of which, the most prevalent were traffic crashes (71%), carbon monoxide poisoning (14%), drowning (3.5%), and other cases (11.5%) (which included suspicious deaths, explosions, group poisoning, quarrels, fires, falls from height, and building collapses). The incidents led to 37,313 injuries and 3,259 deaths, of which 78% of injuries and 75% of deaths were due to road traffic incidents.

CONCLUSION: Given to relationship between occurrence of the incidents and special holidays; such incidents can be reduced through preventive planning and education. We recommend annual monitoring of special incidents and further studies on the associated factors.

PDF Y Endnote Y

Falls are more common than traffic crashes

Maegele M.

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Abstract [Abstract unavailable]

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Fear of falling restricts activities of daily living after total hip arthroplasty: a one-year longitudinal study

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

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(Copyright © 2017, Informa - Taylor and Francis Group)

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Abstract

OBJECTIVES: To determine the prevalence and time course in changes regarding the fear of falling and whether there are consequent restrictions in activities of daily living (ADL) after total hip arthroplasty (THA).

METHODS: This is 1-year longitudinal observational study. We recruited ninety-eight patients before and after THA. Fear of falling was assessed for 12 ADLs preoperatively and postoperatively at 3, 6, and 12 months following THA. In addition, we asked patients to answer whether they had refrained from performing each ADL because of fear of falling.

RESULTS: Fifty-two patients were enrolled for the analysis. The total fear of falling score during ADLs decreased with time after THA. The ADLs in which many patients (over 20%) felt fear even at 12 months were using the stairs (25%), sitting and standing from the floor (23%), and walking around the neighborhood (21%). Approximately 10% of patients were restricted in performing ADLs, such as sitting and standing from the floor, because of fear.

CONCLUSIONS: Patients undergoing THA frequently experience fear of falling during some ADLs even at 1 year after the operation, which could cause ADL restrictions. **CLINICAL IMPLICATIONS:** Clinicians should evaluate fear of falling and institute rehabilitation programs individually to decrease excessive fear that might lead to ADL restrictions.

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Gait variability predicts a subset of falls in cerebellar gait disorders

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Abstract [Abstract unavailable]

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Recovery patterns over 4 years after distal radius fracture: descriptive changes in fracture-specific pain/disability, fall risk factors, bone mineral density, and general health status

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Abstract

STUDY DESIGN: Descriptive/Longitudinal cohort.

INTRODUCTION: Distal radius fracture (DRF) is a common fall related fragility fracture that is known to be an early and independent predictor of secondary osteoporotic (OP) fractures. Changes in falls

risk status, bone status and general health has not been evaluated prospectively in a population that has sustained a DRF.

PURPOSE OF THE STUDY: The purpose of our study was to describe the status of fracture-specific pain/disability, fall risk factors such as physical activity (PA) and fear of falling (FOF), bone mineral density (BMD) and general health status (HS) in people with a DRF and how these variables change over four years with respect to sex, age, incidence of secondary falls and secondary OP fractures.

METHODS: Patients (n = 94) self-reported their fracture-specific pain and disability (Patient-Rated Wrist Evaluation), PA (Rapid Assessment of Physical Activity), FOF (Modified Fall Efficacy Scale), HS (12-item Short Form Health Survey) and completed dual-energy X-ray absorptiometry scan based BMD assessment (lumbar spine and total hip) at baseline (1-2 weeks post-fracture), six months and four years after DRF. Descriptive statistics and general linear models were used to describe changes in recovery patterns over four years.

RESULTS: There was significant ($p < 0.001$) improvement in fracture-specific pain/disability (60 points), FOF (1 point) and physical HS (11 points) between baseline and 4 year follow-up. There were no significant changes in PA and BMD. When stratified with respect to age, sex, presence of subsequent falls and OP fractures, there were no significant differences in fracture-specific pain/disability, PA, FOF, and BMD at baseline, six months or four years after DRF. The physical HS was significantly ($p < 0.05$) less/poorer among those with secondary falls (lower by 2-6 points) and fractures (lower by 5-6 points) compared to those without. Similarly, mental HS was significantly ($p < 0.05$) poorer among people with secondary falls (lower by 2-6 points) and in 50-64 year age group (lower by 3-5 points) than those without secondary falls and in 65-80 year age group, respectively.

CONCLUSION: Post DRF, the majority of the improvement in fracture-specific pain/disability, FOF and HS was completed at six months and very small changes were observed between the six month and four year follow-up. **LEVEL OF EVIDENCE:** NA.

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