

SafetyLit July 22 2018**Blunt cerebrovascular injury in elderly fall patients: are we screening enough?**

Anto VP, Brown JB, Peitzman AB, Zuckerbraun BS, Neal MD, Watson G, Forsythe R, Billiar TR, Sperry JL.

World J. Emerg. Surg. 2018; 13: 30.

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DOI 10.1186/s13017-018-0188-z **PMID** 29997683 **PMCID** PMC6031193

Abstract

BACKGROUND: Blunt cerebrovascular injuries (BCVI) are generally associated with high-energy injury mechanisms. Less is known regarding lower-energy injuries in elderly patients. We sought to determine the incidence of BCVI and characterize current BCVI screening practices and associated complications in elderly ground-level fall patients (EGLF, ≥ 65 years). We hypothesized that BCVI in EGLF patients would be clinically significant and screening would be less common.

METHODS: A retrospective study was performed utilizing the National Trauma Data Bank (NTDB, 2007-2014) and single institutional data. BCVI risk factors and diagnosis were determined by ICD-9 codes. Presenting patient characteristics and clinical course were obtained by chart review. The NTDB dataset was used to determine the incidence of BCVI, risk factors for BCVI, and outcomes in the EGLF cohort. Local chart review focused on screening rates and complications.

RESULTS: The incidence of BCVI in EGLF patients was 0.15% overall and 0.86% in those with at least one BCVI risk factor in the NTDB. Upper cervical spine fractures were the most common risk factor for BCVI in EGLF patients. In EGLF patients, the diagnosis of BCVI was an independent risk factor for mortality (OR1.8, 95% C.I. 1.5-2.1). The local institutional data (2007-2014) had a BCVI incidence of 0.37% ($n = 6487$) and 1.47% in those with at least one risk factor ($n = 1429$). EGLF patients with a risk factor for BCVI had a very low rate of screening (44%). Only 8% of EGLF patients not screened had documented contraindications. The incidence of renal injury was 9% irrespective of BCVI screening.

CONCLUSIONS: The incidence of BCVI is clinically significant in EGLF patients and an independent predictor of mortality. Screening is less common in EGLF patients despite few contraindications. This data suggests that using age and injury mechanism to omit BCVI screening in EGLF patients may exclude an at-risk population. **TRIAL REGISTRATION:** IRB approval number: PRO15020269.

Retrospective trial not registered.

PDF Y Endnote Y**Cross-sectional analysis of ethnic differences in fall prevalence in urban dwellers aged 55 years and over in the Malaysian Elders Longitudinal Research study**

Alex D, Khor HM, Chin AV, Hairi NN, Othman S, Khoo SPK, Bahyah Kamaruzzaman S, Tan MP. *BMJ Open* 2018; 8(7): e019579.

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Abstract

OBJECTIVES: Falls represent major health issues within the older population. In low/middle-income Asian countries, falls in older adults remain an area which has yet to be studied in detail. Using data from the Malaysian Elders Longitudinal Research (MELoR), we have estimated the prevalence of falls among older persons in an urban population, and performed ethnic comparisons in the prevalence of falls.

ESIGN: Cross-sectional analysis was carried out using the first wave data from MELoR which is a longitudinal study. **SETTING:** Urban community dwellers in a middle-income South East Asian country. **PARTICIPANTS:** 1565 participants aged ≥ 55 years were selected by simple random sampling from the electoral rolls of three parliamentary constituencies. **OUTCOME MEASURES:** Consenting participants from the MELoR study were asked the question 'Have you fallen down in the past 12 months?' during their computer-assisted home-based interviews. Logistic regression analyses were conducted to compare the prevalence of falls among various ethnic groups.

RESULTS: The overall estimated prevalence of falls for individuals aged 55 years and over adjusted to the population of Kuala Lumpur was 18.9%. The estimated prevalence of falls for the three ethnic populations of Malays, Chinese and Indian aged 55 years and over was 16.2%, 19.4% and 23.8%, respectively. Following adjustment for ethnic discrepancies in age, gender, marital status and education attainment, the Indian ethnicity remained an independent predictor of falls in our population (relative risk=1.45, 95% CI 1.08 to 1.85).

CONCLUSION: The prevalence of falls in this study is comparable to other previous Asian studies, but appears lower than Western studies. The predisposition of the Indian ethnic group to falls has not been previously reported. Further studies may be needed to elucidate the causes for the ethnic differences in fall prevalence.

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PDF Y Endnote Y

Decline in sensorimotor systems explains reduced falls self-efficacy

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J. Electromyogr. Kinesiol. 2018; 42: 104-110.

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(Copyright © 2018, Elsevier Publishing)

DOI 10.1016/j.jelekin.2018.07.001 **PMID** 30015133

Abstract

Physical performance including balance tasks is one of the main factors explaining the variance in falls self-efficacy in older adults. Balance performance is often measured by use of gross assessment scales, which assess the result of integration of all systems involved in postural control. We aimed to investigate which measurements of postural control correlate to falls self-efficacy scores as measured by the FES-I instrument, and which sensory and motor systems best explain them. A cross sectional study was designed, in which 45 older adults performed quiet stance and limits of stability trials during which their center of pressure (CoP) excursion was recorded. Falls self-efficacy was



measured using the Falls Efficacy Scale - International. Eyesight, vestibular function, proprioception, reaction time and strength were also measured. Hierarchical orthogonal projection of latent structures was used to model FES-I with the CoP trials and then with the sensory and muscle function data. Fes-I could be explained to 39%, with the eyes open trials and the limits of stability trials loading the heaviest. The base model could be explained to 40% using the sensory and muscle function data, with lower limb strength, leg proprioception, neck proprioception, reaction time and eyesight loading the heaviest.

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PDF Y Endnote Y

Development of a user-adaptable human fall detection based on fall risk levels using depth sensor

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Sensors (Basel) 2018; 18(7): s18072260.

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(Copyright © 2018, Multidisciplinary Digital Publishing Institute)

DOI 10.3390/s18072260 **PMID** 30011823

Abstract

Unintentional falls are a major public health concern for many communities, especially with aging populations. There are various approaches used to classify human activities for fall detection. Related studies have employed wearable, non-invasive sensors, video cameras and depth sensor-based approaches to develop such monitoring systems. The proposed approach in this study uses a depth sensor and employs a unique procedure which identifies the fall risk levels to adapt the algorithm for different people with their physical strength to withstand falls. The inclusion of the fall risk level identification, further enhanced and improved the accuracy of the fall detection. The experimental results showed promising performance in adapting the algorithm for people with different fall risk levels for fall detection.

PDF Y Endnote Y

Evaluating the effects of kinesthetic biofeedback delivered using reaction wheels on standing balance

Afzal MR, Eizad A, Palo Peña CE, Yoon J.

J. Healthc. Eng. 2018; 2018: e7892020.

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DOI 10.1155/2018/7892020 **PMID** 29991995 **PMCID** PMC6016170

Abstract

Aging, injury, or ailments can contribute to impaired balance control and increase the risk of falling. Provision of light touch augments the sense of balance and can thus reduce the amount of body sway. In this study, a wearable reaction wheel-based system is used to deliver light touch-based



balance biofeedback on the subject's back. The system can sense torso tilt and, using reaction wheels, generates light touch. A group of 7 healthy young individuals performed balance tasks under 12 trial combinations based on two conditions each of standing stance and surface types and three of biofeedback device status. Torso tilt data, collected from a waist-mounted smartphone during all the trials, were analyzed to determine the efficacy of the system. Provision of biofeedback by the device significantly reduced RMS of mediolateral (ML) trunk tilt ($p < 0.05$) and ML trunk acceleration ($p < 0.05$). Repeated measures ANOVA revealed significant interaction between stance and surface on reduction in RMS of ML trunk tilt, AP trunk tilt, ML trunk acceleration, and AP trunk acceleration. The device shows promise for further applications such as virtual reality interaction and gait rehabilitation.

PDF Y Endnote Y

Fall awareness as a determining factor of this event among elderly community residents

Neto JAC, Brum IV, Braga NAC, Gomes GF, Tavares PL, Silva RTC, Assad IM, Ferreira RE.

Geriatr. Gerontol. Aging 2017; 11(1): 25-31.

(Copyright © 2017, Brazilian Society of Geriatrics and Gerontology)

DOI unavailable **PMID** unavailable

Abstract

OBJECTIVES: To identify the prevalence of accidental falls among elderly persons in their homes, and to evaluate determining factors to that, including intrinsic and extrinsic risk factors, as well as the awareness about falls, assessed by the Falls Risk Awareness Questionnaire (FRAQ-Brazil).

METHOD: It consisted of a quantitative, transversal, and descriptive study, performed with 472 elderly persons through interview. Data were analyzed by the chi-squared test with a confidence interval of 95%.

RESULTS: The average age of the sample was 70.6 years and most of them were female. Among the sample, 55.2% referred previous episodes of fall. The majority of them self-reported having diseases associated with gait disturbance and used medicines that could cause falls. It was observed less falls among elderly with higher level of awareness about risk factors.

CONCLUSION: A high prevalence of accidental falls and exposure of the elderly persons to several independent and concomitant risk factors were observed. Greater awareness level about falls seems to be a preventive factor, presenting a higher association with falls than level of education and income.

PDF Y Endnote Y

Falls prevention strategies for patients over 65 years in a neurology ward: a best practice implementation project

Comino-Sanz IM, Sánchez-Pablo C, Albornos-Muñoz L, Beistegui Alexandre I, Jiménez De Vicuña Marin M, Uribealago Pagalday L, Gamarra Santa Coloma E.

JBI Database Syst. Rev Implement. Rep. 2018; 16(7): 1582-1589.

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DOI 10.11124/JBISRIR-2017-003628 **PMID** 29995716



Abstract

OBJECTIVES: The aim of this project was to promote evidence-based practice with regard to fall prevention and management, by implementing the recommendations from the best available evidence to reduce fall rates.

INTRODUCTION: Falls are a main cause of disability in older people and the most common adverse event in all hospital patients. It is essential to implement the recommendations from evidence-based interventions to reduce these events.

METHODS: A pre and post implementation audit method was used in a neurology ward, which employed the Joanna Briggs Institute Practical Application of Clinical Evidence System (JBI PACES) and Getting Research Into Practice (GRiP) module. The 15-month project evaluated between 20-30 patients from a sample at each audit (baseline in April 2016 and during three follow-up cycles in December 2016, March 2017 and June 2017). The data were inputted into an informatics system from nursing records and audited according to evidence-based processes and outcomes criteria.

RESULTS: The baseline outcomes identified five barriers: incomplete fall registration, lack of an established fall prevention protocol for at-risk patients, limited knowledge about the fall prevention protocol, lack of a fall risk assessment scale and lack of multifactorial individual plans for fall prevention. Strategies were carried out and implemented following GRiP and all the criteria improved from baseline.

CONCLUSIONS: The project successfully increased evidence-based practice on falls and provided mechanisms for sustaining evidence-based practice changes. Further audits are needed to improve some outcomes.

PDF Y Endnote Y

Frequent 911 fall calls in older adults: opportunity for injury prevention strategies

Quatman CE, Anderson JP, Mondor M, Halweg J, Quatman-Yates C, Switzer JA.

J. Am. Geriatr. Soc. 2018; ePub(ePub): ePub.

Affiliation: HealthPartners Institute.

(Copyright © 2018, John Wiley and Sons)

DOI 10.1111/jgs.15457 **PMID** 30019749

Abstract

OBJECTIVES: To evaluate the utility of monitoring emergency medical services (EMS) call patterns to identify older adults who may benefit from targeted fall prevention and medical monitoring strategies.

DESIGN: Retrospective chart review of EMS fall-related care. The HealthEMS database for the community surveyed was queried from January 1, 2007, through December 31, 2016. Fall-related calls for individuals aged 60 and older were identified and used to determine which individuals had subsequent fall calls and needed transport to the hospital over the study time period. **SETTING:** Medium-sized suburban community. **PARTICIPANTS:** Community-dwelling adults aged 60 and older with fall-related calls. **MEASUREMENTS:** Descriptive EMS cell data.

RESULTS: Over the 10-year period, 37,324 EMS call data were recorded, with 11% (N=4,084) identified as fall-related calls that occurred for individuals aged 60 and older. Twenty-nine percent (n=685) of individuals who called for a fall called at least one more time within the study period.



Time between calls substantially decreased the more frequently an individual called ($p < .001$). Fifteen percent ($n=107$) of repeat callers called 5 or more times for falls, and these individuals were transported to the hospital only 21% of the time (vs 75% of first-time callers, $p < .001$).

CONCLUSION: Certain older individuals are at risk of having multiple fall-related calls to EMS over short periods of time, sometimes within hours of previous calls. In our current healthcare system, no significant intervention or follow-up is offered or available by emergency first response teams to prevent subsequent falls. This study demonstrates the need for a paradigm change in our healthcare system that helps reduce resource utilization for the first responder community for fall-related calls in older adults and re-directs those resources to implement nationwide fall-prevention strategies to decrease fall related disability and death.

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Identifying frailty syndrome with TUG test in home-dwelling elderly

Filippin LI, Miraglia F, Leite JCC, Chakr R, Oliveira NC, Berwanger DD.

Geriatr. Gerontol. Aging 2017; 11(2): 80-87.

(Copyright © 2017, Brazilian Society of Geriatrics and Gerontology)

DOI unavailable PMID unavailable

Abstract

INTRODUCTION: Frailty is an important geriatric syndrome linked to increased mortality, morbidity and the risk of falls. Detection of pre-frail and early frail individuals is essential to minimize adverse health outcomes, enabling effective interdisciplinary interventions.

OBJECTIVE: To identify frailty syndrome with Timed Up and Go (TUG) test in home-dwelling elderly.

METHODS: A home-based cross-sectional study was carried out with 322 elderly people living in a Southern city of Brazil. The Fried frailty criteria was used in order to assess the levels of frailty; the TUG score was investigated as a possible predictor of frailty. The diagnostic ability of different cut-off points for the TUG test was evaluated using the ROC curve.

RESULTS: ROC curve analysis for the TUG test, a value of eight seconds was identified as the good cut-off point for the screening of the frailty syndrome. The AUROC was 0.775, with a sensitivity of 85.0%, specificity of 59.5% and negative predictive value of 78.6%.

CONCLUSIONS: Considering the limitations of a single test to accomplish the overall complexity of frailty syndrome, in the present study, TUG test was a good screening tool in home-dwelling elderly.

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Increasing physical activity in older adults: walking by prescription in primary care

Morais VP, Encantado J, Santos MI, Almeida P, Leal IP, Carvalho C.

Psychol. Community Health 2017; 6(1): 128-140.

(Copyright © 2017, PsychOpen)

DOI 10.5964/pch.v6i1.217 PMID unavailable

Abstract

AIM: The present study (PTDC/SAU-SAP/110799/2009) funded by the Portuguese Government (Fundação para a Ciência e Tecnologia - FCT) aimed to test the effectiveness of a behaviour based



intervention combined with a cognitive based one, designed to increase physical activity levels in older adults at Primary Health Care Centres.

METHOD: A total of 108 participants aged over 65 years participated in the study. Participants were referred by their General Practitioner (GP) and randomized by gender and marital status at the moment they started the program (single vs. couple), and allocated into one of three conditions: goal intention, action planning, action planning and coping planning. All participants received a pedometer and a logbook and were asked to register their daily number of steps for a period of 24 weeks. Study follows a longitudinal design with five assessments over a 6-month after baseline.

RESULTS: The test between subjects' effects revealed an interaction between condition and participating in the study as single vs. couple. Older adults participating as singles walked more steps on average in the condition goal intention plus action planning and coping planning, whereas participants that entered in the study with their spouse, goal intention without any other planning intervention was the most effective intervention.

CONCLUSION: The 24-week physical activity program based on the recent developments of behavioural-cognitive framework, has proven useful increasing older adults daily walking behaviour.

PDF Y Endnote Y

Knowledge and perception of falls among community dwelling elderly: a study from southern Sri Lanka

Gamage N, Rathnayake N, Alwis G.

Curr. Gerontol. Geriatr. Res. 2018; 2018: e7653469.

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(Copyright © 2018, Hindawi Publishing)

DOI 10.1155/2018/7653469 **PMID** 30002676 **PMCID** PMC5996422

Abstract

The knowledge and perception of falls facilitate a better pathway to improve the health status among the elderly. Knowledge and perception of falls among community dwelling elderly were assessed in 300 participants (175 females) aged 65 years and above using an interviewer-administered questionnaire. Mean (SD) age of the participants was 73.0 (6.7) years. Majority (72%) knew some biological factors, and 60% knew environmental and behavioral factors which increase the risk of falls. Among 300 participants, 18% had poor, 61% had average, and 21% had good knowledge on falls. The mean (SD) knowledge was 48.14 (19.13). The most frequent (49%) information source was television. Significant associations were found between age ($p = 0.002$) and educational status ($p < 0.001$) with level of knowledge regarding falls. Individuals, 25.4% with good knowledge, 32.2% with average knowledge, and 51.9% with poor knowledge, had experienced falls during the previous 12 months ($p = 0.007$). Regarding perception of falls, 20.3% ($n = 61$) had negative perception and 79.7% ($n = 239$) had positive perception. Significant associations were found between gender ($p = 0.01$), age ($p = 0.04$), and level of education ($p < 0.001$) with perception of falls. This study revealed that the community dwelling elders had average knowledge and positive perception regarding falls and preventive measures, emphasizing the importance of falls prevention awareness programs.

PDF Y Endnote Y



Neuromuscular determinants of slip-induced falls and recoveries in older adults

Sawers A, Bhatt T.

J. Neurophysiol. 2018; ePub(ePub): ePub.

Affiliation: Physical Therapy, University of Illinois at Chicago, United States.

(Copyright © 2018, American Physiological Society)

DOI 10.1152/jn.00286.2018 **PMID** 29995607

Abstract

Is there a neuromuscular basis for falls? If so it may provide new insight into falls, their assessment and treatment. We hypothesized that falls and recoveries from a laboratory-induced slip would be characterized by differences in multi-muscle coordination patterns. Using muscle synergy analysis we identified different multi-muscle coordination patterns between older adults who fell and those who recovered from a laboratory-induced "feet-forward" slip. Participants who fell recruited fewer muscle synergies than participants who recovered. This suggests that a fall may result from recruiting an inadequate number of muscle synergies to produce the necessary mechanical functions required to maintain balance. Participants who fell also recruited different muscle synergies, including one with high levels of co-activity consistent with a startle-like response. These differences in multi-muscle coordination between slip outcomes were not accompanied by differences in slip difficulty or gait kinematics prior to or during the slip response. The differences in neuromuscular control may therefore reflect differences in sensorimotor control rather than kinematic constraints imposed by the slip, or the musculoskeletal system. Further research is required to test the robustness of these results and their interpretation with respect to additional mechanical variables (e.g., joint torques, ground reaction forces), responses to other fall types (e.g., trips), and within rather than between individuals.

PDF Y Endnote Y

Orthostatic hypotension: an often overlooked risk factor for falls

Momeyer MA, Mion LC.

Geriatr. Nurs. 2018; ePub(ePub): ePub.

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DOI 10.1016/j.gerinurse.2018.06.009 **PMID** 30017455

Abstract [Abstract unavailable] Case Study

PDF Y Endnote Y

Recruitment for a pragmatic clinical trial to reduce fall injuries

Cauley JA.

J. Gerontol. A Biol. Sci. Med. Sci. 2018; ePub(ePub): ePub.

Affiliation: Department of Epidemiology, University of Pittsburgh, Pennsylvania.

(Copyright © 2018, Gerontological Society of America)

DOI 10.1093/gerona/gly142 **PMID** 30020408

Abstract [Abstract unavailable]



PDF Y Endnote Y**Review: Postdischarge home interventions can increase or decrease falls in older adults**

Hirsch C.

Ann. Intern Med. 2018; 169(2): JC10.

(Copyright © 2018, American College of Physicians)

DOI 10.7326/ACPJC-2018-169-2-010 **PMID** 30014099**Abstract**

In older adults discharged from hospital, do postdischarge fall prevention interventions reduce falls? Included studies compared fall prevention interventions with no intervention or placebo in adults \geq 60 years of age who were discharged from hospital to the community and assessed falls within 6 months of discharge. Included interventions were delivered or initiated in hospital or in the first month after discharge. Outcomes included the proportion of patients who fell, fall rate (falls/1000 person-d), and injurious fall rate (injurious falls/1000 person-d)...

PDF Y Endnote Y**Role of musculoskeletal disorders in falls of postmenopausal women**

Afrin N, Honkanen R, Koivumaa-Honkanen H, Sund R, Rikkinen T, Williams L, Kroger H.

Osteoporos. Int. 2018; ePub(ePub): ePub.**Affiliation:** Department of Orthopedics, Traumatology and Hand Surgery, Kuopio University Hospital, Kuopio, Finland.

(Copyright © 2018, Holtzbrinck Springer Nature Publishing Group)

DOI 10.1007/s00198-018-4631-5 **PMID** 30014157**Abstract**

We aimed to investigate the role of musculoskeletal disorders (MSDs) as risk factors for falls among postmenopausal women. Our results indicate that MSDs are common and are associated with increased falling risk, especially nonslip falls. Excess number of falls due to MSDs is greater than that due to any other disease class.

PURPOSE: Falls are a major public health problem worldwide. The aim of the study was to investigate the role of MSDs as risk factors for falls among postmenopausal women.

METHODS: This cohort study utilized data from a population-based, prospective cohort study (OSTPRE). The study population consisted of 8656 women aged 57-66 years (in 1999) living in Kuopio Province, Eastern Finland, who responded to postal enquiries in 1999 and 2004. Information on MSDs and other morbidities was obtained from the 1999 enquiry and information on falls from the 2004 enquiry. Women were classified as fallers or non-fallers according to their falling events in the preceding 12 months. The fallers were further divided into women with slip and nonslip falls.

RESULTS: Of the study sample, 53.3% reported a MSD and 39.2% reported a fall during the preceding 12 months. MSDs predicted falls (OR = 1.38; 95% CI 1.26-1.50) and the association was stronger for nonslip (OR = 1.56; 95% CI 1.39-1.75) than slip falls (OR 1.22; 95% CI 1.08-1.38) compared to the women without MSDs. The risk of falls increased with increasing number (1, 2, \geq 3) of MSDs: 1.25 (95%CI 1.13-1.38), 1.48 (95%CI 1.30-1.68), and 1.92 (95%CI 1.60-2.31), respectively. After adjustments, the risk of falling related to MSDs reduced by about 5% (adjusted $p < 0.001$). The

population attributable fraction of falls due to MSDs was 10.3% of all falls, greater than that due to any other disease class.

CONCLUSION: MSDs are common and an important risk factor for falls and especially nonslip falls among postmenopausal women. The number of excess falls due to MSDs in this population group is greater than that due to any other disease class.

PDF Y Endnote Y

Screening, recruitment, and baseline characteristics for the Strategies to Reduce Injuries and Develop Confidence in Elders (STRIDE) study

Gill TM, McGloin JM, Latham NK, Charpentier PA, Araujo KL, Skokos EA, Lu C, Shelton A, Bhasin S, Bianco LM, Carnie MB, Covinsky KE, Dykes P, Esserman DA, Ganz DA, Gurwitz JH, Hanson C, Nyquist LV, Reuben DB, Wallace RB, Greene EJ.

J. Gerontol. A Biol. Sci. Med. Sci. 2018; ePub(ePub): ePub.

Affiliation: Yale Center for Analytical Sciences, Yale School of Public Health, New Haven, Connecticut.

(Copyright © 2018, Gerontological Society of America)

DOI 10.1093/gerona/gly076 **PMID** 30020415

Abstract

BACKGROUND: We describe the recruitment of participants for Strategies to Reduce Injuries and Develop Confidence in Elders (STRIDE), a large pragmatic cluster randomized trial that is testing the effectiveness of a multifactorial intervention to prevent serious fall injuries. Eligible persons were 70 years or older, community-living, and at increased risk for serious fall injuries. The modified goal was to recruit 5,322 participants over 20 months from 86 primary care practices within 10 diverse health care systems across the United States.

METHODS: The at-risk population was identified using two distinct but complementary screening strategies that included three questions administered centrally via the mail (nine sites) or in the clinic (one site), while recruitment was completed centrally by staff at Yale.

RESULTS: For central screening, 226,603 letters mailed to 135,118 patients yielded 28,719 positive screens (12.7% of those mailed and 46.5% of the 61,729 returned). In the clinic, 22,537 screens were completed, leading to 5,732 positive screens (25.4%). Of the 34,451 patients who screened positive for high risk of serious fall injuries, 31,872 were sent a recruitment packet and, of these, 5,451 (17.1%) were enrolled over 20 months (mean age: 80 years; 62% female). The participation rate was 34.0% among eligible patients. The enrollment yields were 3.6% (vs 5% projected) for each patient screened centrally, despite multiple screens, and 10.5% (vs 33.9% projected) for each positive clinic screen.

CONCLUSIONS: Despite lower-than-expected yields, the STRIDE Study exceeded its modified recruitment goal. If the STRIDE intervention is found to be effective, the two distinct strategies for identifying a high-risk population of older persons could be implemented by most health care systems.

PDF Y Endnote Y



Tai chi chuan improves functionality and quality of life in elderly men with low bone mineral density

Pereira MM, Souza VC, Paula AP, Moraes CF, Nóbrega OT, Gomes L.

Geriatr. Gerontol. Aging 2017; 11(4): 174-181.

(Copyright © 2017, Brazilian Society of Geriatrics and Gerontology)

DOI unavailable PMID unavailable

Abstract

OBJECTIVE: The purpose was to assess the effect of Tai Chi Chuan (TCC) on functional capacity (FC) and quality of life (QoL) in elderly men with low bone mineral density (BMD).

METHODS: This quasi-experimental, controlled blinded trial evaluated 41 senior men (≥ 60 years), divided into two groups: control group 1 - G1 (TCC; $n = 20$; 69.2 ± 6.2 years) and control group 2 - G2 (control; $n = 21$; 69.0 ± 5.7 years). The BMD (of lumbar spine and femur neck) was assessed by dual energy x-ray absorptiometry (DEXA). FC was assessed for aerobic endurance, for upper and lower limbs strength and flexibility, for static, dynamic and functional balance testes, and for risk of falls. QoL was assessed by the SF-36 questionnaire (MOS 36-item Short-Form Health Survey). G1 practiced the 24-form Yang style of TCC, for 12 weeks twice a week on low intensity; G2 did not practice oriented physical activity.

RESULTS: TCC practitioners had significantly higher scores for aerobic endurance, upper and lower limbs strength, and dynamic balance. In terms of QoL, values were significantly better in total score and aspects such as FC, general health, vitality, and mental health.

DISCUSSION: TCC was proven beneficial to FC and QoL scores, which adds evidence for its practice by elderly men with low BMD.

CONCLUSION: TCC training is effective in improving FC and QoL in elderly men with low BMD.

PDF Y Endnote Y

Ten years of EMS fall calls in a community: an opportunity for injury prevention strategies

Quatman CE, Mondor M, Halweg J, Switzer JA.

Geriatr Orthop Surg Rehabil 2018; 9: e2151459318783453.

Affiliation: University of Minnesota Medical Center, Minneapolis, MN, USA.

(Copyright © 2018, Sage Publications)

DOI 10.1177/2151459318783453 PMID30013811 PMCID PMC6041994

Abstract

OBJECTIVE: To determine whether fall calls, lift assists, and need for transport to the hospital over the past 10 years in one emergency medical services (EMS) system have altered coincident with demographic changes and to estimate health-care cost for lift assists.

METHODS: We conducted a retrospective chart review of EMS fall-related care. The HealthEMS database for a suburban community surveyed was queried from March 1, 2007, to March 1, 2017. Fall-related calls in patients 60 years or older were identified and determined to be either lift assists (calls that do not result in transport) or fall calls that resulted in transport to the hospital.

RESULTS: Of the 38 237 EMS care responses in patients 60 years or older, 11.5% were related to falls. Fall calls increased by 268% over the past 10 years ($P = .0006$), yet the number of transports to the hospital significantly decreased over time ($P = .02$). Lift assists increased significantly ($P = .0003$),

nearly doubling over the decade. At the same time, fall calls that did not result in transport to the hospital cost the community an estimated US\$1.5 million over a 10-year period.

DISCUSSION: There has been a dramatic shift in fall-related calls to EMS in older individuals with more frequent calls for lesser acuity needs. Utilization of EMS for lift assists has substantial financial consequences and diverts care from calls that need immediate triage and transport to care.

CONCLUSION: Future work to reduce the frequency and increase the impact of EMS lift assists could have a significant cost benefit and provide opportunity for enrollment in appropriate community services and fall prevention programs.

PDF Y Endnote Y

The association between alcohol consumption and risk of hip fracture differs by age and gender in Cohort of Norway: a NOREPOS study

Sjøgaard AJ, Ranhoff AH, Meyer HE, Omstand TK, Nystad W, Tell GS, Holvik K.

Osteoporos. Int. 2018; ePub(ePub): ePub.

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DOI 10.1007/s00198-018-4627-1 **PMID** 30006884

Abstract

The association between alcohol consumption and hip fracture differed by gender: Men aged 30-59 years drinking frequently or 14+ g/week had higher risk than moderate drinkers. No significant association was seen in older men. Women not drinking alcohol had higher risk than those drinking moderately both regarding frequency and amount.

INTRODUCTION: We aimed to examine alcohol consumption and risk of hip fracture according to age and gender in the population-based Cohort of Norway (1994-2003).

METHODS: Socio-demographics, lifestyle, and health were self-reported and weight and height were measured in 70,568 men and 71,357 women ≥ 30 years. Information on subsequent hip fractures was retrieved from hospitals' electronic patient registries during 1994-2013. Frequency of alcohol consumption was categorized: never/seldom, moderate (≤ 2 -3 times/week), or frequent (≥ 4 times/week), and amount as number of glasses per week: 0, 1-6, 7-13, 14-27, and 28+. Type of alcohol (wine vs. beer/hard liquor) was also examined. Cox's proportional hazards regression was used to estimate hazard ratios (HRs) stratified on gender and baseline age < 60 and ≥ 60 years.

RESULTS: During median 15-year follow-up, 1558 men and 2511 women suffered a hip fracture.

Using moderate drinkers as reference, men < 60 years drinking frequently had multivariable adjusted HR = 1.73 (CI 1.02-2.96) for hip fracture and more than 2.5 times higher risk if they consumed 14+ glasses compared to 1-6 glasses per week. In other groups of age and gender, no statistically significant increased risk was found in those consuming the highest levels of alcohol. Compared to women with moderate or frequent alcohol use, never/seldom-drinking women had the highest fracture risk. In women, use of wine was associated with lower fracture risk than other types of alcohol.

CONCLUSIONS: Risk of hip fracture was highest in men < 60 years with the highest frequency and amount of alcohol consumption and in non-drinking women.

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Understanding the profile of Personal Alert Victoria clients who fall

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Health Soc. Care Community 2018; ePub(ePub): ePub.

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(Copyright © 2018, John Wiley and Sons)

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Abstract

Personal response systems are used to support frail, older people, and people with disabilities to live independently in their own homes. This paper describes the patterns, characteristics, and outcomes of Personal Alert Victoria (PAV) clients who experience a fall. It also examines the current falls prevention referral practices of assessors who determine whether an older person would benefit from a personal response system. Deidentified data on clients from the PAV service provider from 2012 to 2014 were linked to routine data maintained by the Department of Health and Human Services in Victoria. Falls prevention referral practices of assessors were examined using an online survey. Personal response systems were most frequently activated because of a fall in this group of older people (n = 16,822; 44%). No demographic or clinical factors differentiated PAV clients who activated the system because of a fall compared to those who did not, despite a significant increase in the rate of falls-related system activations (p = 0.001) and hospitalisation (p < 0.001) between 2012 and 2014. Assessors believed that PAV clients were at increased risk of falls and frequently recommended falls prevention interventions such as strength and balance interventions (n = 112; 93%) in order to address this risk. This study has provided an insight into the issue of falls among PAV clients, which can help guide the tailoring of falls prevention interventions that can be integrated within existing service models.

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Variations in death notification of nursing home residents to Australian coroners

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(Copyright © 2018, BMJ Publishing Group)

DOI 10.1136/injuryprev-2017-042689 **PMID** 29991606

Abstract

OBJECTIVES: To examine the impact of changes to the reporting requirements in coronial legislation on the nature and frequency of nursing home resident deaths reported to Coroners.



DESIGN: National retrospective study of a population cohort of nursing home resident deaths.

SETTING: Accredited Australian nursing homes between July 2000 and June 2013.

PARTICIPANTS: Residents who died in nursing homes accredited by the Aged Care Standards and Accreditation Agency reported to Coroners.

MAIN OUTCOME MEASURES: We explored three death-reporting models in the nursing home setting: comprehensive model, selective 'mechanism of death' model and selective 'age of death' model. These models were examined by manner of death subgroups: natural, falls-related and other external causes using the outcome measure of deaths notified to the Coroner per 1000 residents. We used an interrupted time series analysis using generalised linear regression with a negative binomial probability distribution and a log link function.

RESULTS: The comprehensive model showed the proportion of reportable deaths due to natural causes far exceeded those from falls and other external cause. In contrast, the selective notification models reduced the total number of reportable deaths. Similarly, the selective 'age of death' model showed a decline in the reportable external cause deaths.

CONCLUSIONS: Variation in the causes, locations and ages of persons whose deaths are legally required to be notified to Coroners impacts the frequency and nature of deaths of nursing home residents investigated by Coroners. This demonstrates that legislation needs to be carefully framed and applied to ensure that the prevention mandate of Coroners in Australia is to be achieved.

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Visual-vestibular interaction for postural control during sit-to-stand: effects of aging

Lui KY, Hewston P, Deshpande N.

Motor Control 2018; ePub(ePub): ePub.

Affiliation: Queen's University.

(Copyright © 2018, Human Kinetics Publishers)

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Abstract

During sit-to-stand (STS), the vestibular system is highly stimulated in response to linear acceleration of the head and may play an important role, in addition to vision, for postural control. We examined the effects of aging on visual-vestibular interaction for postural control during STS in 15 young (22.5 ± 1.1 years) and 15 older (73.9 ± 5.3 years) participants. Vestibular information was manipulated using galvanic vestibular stimulation. Vision conditions involved normal (eyes open), suboptimal (blurring goggles), and no (eyes closed) vision. Older participants had significantly greater mediolateral peak-to-peak trunk roll ($p = .025$) and center of mass displacements ($p < .001$) than young participants. However, despite having greater mediolateral instability, older participants utilized similar strategies as young participants to overcome sensory perturbations during STS. Overall visual inputs were more dominantly used for mediolateral trunk control during STS than vestibular inputs.

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An external focus of attention is effective for balance control when sleep-deprived

Diekfuss JA, Janssen JA, Slutsky AB, Berry NT, Etnier JL, Wideman L, Raisbeck LD.

Int. J. Exerc. Sci. 2018; 11(5): 84-94.

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(Copyright © 2018, Western Kentucky University)

DOI unavailable **PMID** 29997736

Abstract

The purpose of our study was to examine if the beneficial effects of an external focus are effective for balance control when sleep-deprived. Sleep-deprived participants (27 hours awake) completed three blocks of five separate 30 second trials on a dynamic balance board. All participants were given internal, external, and control instruction. For the internal focus trials, participants focused on their feet; whereas, for the external focus trials, participants focused on the balance board. Participants' time in balance was significantly greater during the external focus compared to the internal focus and control. These findings suggest that external focus instructions are effective when participants are sleep-deprived.

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Balance control is impaired in adults with sickle cell anaemia

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Somatosens. Mot. Res. 2018; ePub(ePub): ePub.

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(Copyright © 2018, Informa - Taylor and Francis Group)

DOI 10.1080/08990220.2018.1481829 **PMID** 30010483

Abstract

BACKGROUND: Musculoskeletal involvement and cerebrovascular disease are common in sickle cell anaemia (SCA). These changes are potentially important factors that modify the control of balance in this population.

OBJECTIVE: To assess balance control in adults with SCA and investigate the associations among balance, posture and muscle function.

METHODS: Twenty neurologically intact (i.e. without previous episodes of overt stroke or transient ischaemic attack) adults with SCA and 18 controls were evaluated. All participants underwent static balance measurement through stabilometry, postural evaluation through photogrammetry and assessment of muscle function through handgrip and respiratory muscle strength.

RESULTS: Compared to the controls, the adults with SCA exhibited greater displacement of the centre of mass, particularly in the mediolateral direction. Moreover, the adults with SCA exhibited greater postural deviations for the following variables: angles of the right and left hip, horizontal asymmetry of the scapula in relation to T3, angles of the right and left leg-heel and horizontal alignment of the pelvis. Handgrip strength, respiratory muscle strength and haemoglobin (Hb) levels were significantly correlated with postural balance measurements. Significant correlations between balance and posture were only observed between the variables of balance and the postural

parameters that involved the angulations calculated from the vertical alignment of the pelvis, hip and ankle.

CONCLUSIONS: Neurologically intact adults with SCA exhibit damage in static balance, particularly in the mediolateral direction. These patients present postural deviations due to changes in the hip and ankle joints. In addition, balance control is related to posture, Hb level and muscle function.

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Patients with compensated cirrhosis are also at risk of falling

Román E, Gely C, Flavià M, Poca M, Alvarado E, Vargas V, Guarner C, Soriano G.

Hepatology 2018; ePub(ePub): ePub.

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(Copyright © 2018, John Wiley and Sons)

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Abstract

Some years ago, we observed that falling in the previous year was more frequent in patients with cirrhosis than in healthy controls, and showed for the first time that cirrhotic patients, mainly those with cognitive dysfunction, are predisposed to falling during follow-up. Since then, the relevance of falls in cirrhosis has been addressed in the context of their incidence, risk factors, related mortality, associated complications, health care needs, familial and social burden, and health-related quality of life deterioration. This article is protected by copyright. All rights reserved.

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The influence of body armor on balance and movement quality

Kollock RO, Hale D, Vogelpohl R, Kremer L, Horner J, Cox C, Allen M.

Int. J. Exerc. Sci. 2018; 11(1): 648-656.

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(Copyright © 2018, Western Kentucky University)

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Abstract

Body armor is essential to the protection of military personnel; however, body armor may impede the users balance and movement quality. A better understanding of the influence of body armor on balance and movement quality may help in the development of new guidelines for training standards and procedures to mitigate the risk of injury associated with wearing of body armor in warfighters. The purpose of this study was to identify the effects of body armor (combat boots, tactical vest and combat helmet) on balance and movement quality in male military cadets and personnel. Twelve male participants completed the Functional Movement Screen (FMS) and Star Excursion Balance Test (SEBT) under two separate conditions, body armor and non-body armor. **RESULTS** indicated a significant difference in FMS composite score between the non-body armor and body armor conditions ($p = .012$), with the non-body armor condition resulting in significantly higher FMS scores than the body armor condition. Additionally, the FMS item score for shoulder mobility

was significantly higher (2.25 ± 0.62) in the non-body armor condition than the body armor condition ($p = 0.03$). The SEBT composite and the three individual reach distances were not significantly different between conditions. Based on the current findings, body armor within a 4.8 kg - 5.3 kg range does appear to impact movement quality as evaluated using the FMS in male military personnel and cadets. More research is needed to determine a threshold of compensatory movement patterns relative to an increase in body armor weight.

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