

**SafetyLit 20<sup>th</sup> May 2018****A systematic review and meta-analysis of exercise-based falls prevention strategies in adults aged 50+ years with visual impairment**

Dillon L, Clemson L, Ramulu P, Sherrington C, Keay L.

*Ophthalmic. Physiol. Opt.* 2018; ePub(ePub): ePub.

**Affiliation:** Injury Division, The George Institute for Global Health, University of New South Wales Sydney, Sydney, Australia.

(Copyright © 2018, John Wiley and Sons)

**DOI** 10.1111/opo.12562 **PMID** 29732579

**Abstract**

**PURPOSE:** To determine the impact of exercise or physical training on falls or physical function in people aged 50+ years with visual impairment, compared with control (no intervention or usual care).

**METHODS:** An updated systematic review of randomised controlled trials, investigating the effect of exercise or physical activity on falls prevention or physical function in adults aged 50+ with visual impairment. Searches of CINAHL, the Cochrane Register of Controlled Trials (CENTRAL), Embase, and Medline were undertaken. Three trials were identified for the period February 2013 to July 2017 and added to the four in the original review.

**RESULTS:** New trials evaluated yoga, the Otago Exercise Programme in combination with a home safety programme and the Alexander Technique. Meta-analysis of data from two trials (n = 163) indicated a non-statistically significant positive impact of exercise on the Chair Stand Test (WMD - 1.85 s, 95% CI -4.65 to 0.96, p = 0.20, I<sup>2</sup> 22%). In this update, two new trials measured falls so meta-analysis was possible for three trials (n = 539) and revealed no impact on falls (RR 1.05, 95% CI 0.73 to 1.50, p = 0.81, I<sup>2</sup> 30%).

**DISCUSSION:** Although exercise or physical training can improve physical function in older adults with visual impairment, and diverse strategies are being evaluated, there are no proven falls prevention strategies. In the few studies available, falls are not consistently reported and more work is required to investigate falls prevention in older adults with visual impairment.

© 2018 The Authors *Ophthalmic & Physiological Optics* © 2018 The College of Optometrists.

**PDF Y Endnote Y****Author Correction: Reliability and feasibility of gait initiation centre-of-pressure excursions using a Wii® Balance Board in older adults at risk of falling**

Lee J, Webb G, Shortland AP, Edwards R, Wilce C, Jones GD.

*Ageing Clin. Exp. Res.* 2018; ePub(ePub): ePub.

**Affiliation:** Faculty of Life Sciences & Medicine, Centre for Human & Applied Physiological Sciences (CHAPS), Guy's Campus, King's College London, London, SE1 1UL, UK. gareth.jones@gstt.nhs.uk.

(Copyright © 2018, Editrice Kurtis)

**DOI** 10.1007/s40520-018-0967-0 **PMID** 29752608

**Abstract**

In the original publication, the article title was incorrectly published as 'Reliability and feasibility of gait initiation centre-of-pressure excursions using a Wii® Balance Board in older adults at risk of failing'. The correct title should read as 'Reliability and feasibility of gait initiation centre-of-pressure excursions using a Wii® Balance Board in older adults at risk of falling'.

**PDF Y Endnote Y****Balance ability and cognitive impairment influence sustained walking in an assisted living facility**

Bowen ME, Crenshaw J, Stanhope SJ.

*Arch. Gerontol. Geriatr.* 2018; 77: 133-141.

**Affiliation:** Department of Kinesiology and Applied Physiology, University of Delaware, 540 S. College Ave., Newark, DE 19713, United States.

(Copyright © 2018, Elsevier Publishing)

**DOI** 10.1016/j.archger.2018.05.004 **PMID** 29753298

**Abstract**

**PURPOSE OF STUDY:** The purpose of this study was to determine the influence of cognitive impairment (CI),<sup>1</sup> gait quality, and balance ability on walking distance and speed in an assisted living facility.

**MATERIALS AND METHODS:** This was a longitudinal cohort study of institutionalized older adults (N = 26; 555 observations) followed for up to 8 months. Hierarchical linear modeling statistical techniques were used to examine the effects of gait quality and balance ability (using the Tinetti Gait and Balance Test) and cognitive status (using the Montreal Cognitive Assessment) on walking activity (distance, sustained distance, sustained speed). The latter were measured objectively and continuously by a real-time locating system (RTLS).

**RESULTS:** A one-point increase in balance ability was associated with an 8% increase in sustained walking distance ( $p = 0.03$ ) and a 4% increase in sustained gait speed ( $p = 0.00$ ). Gait quality was associated with decreased sustained gait speed ( $p = 0.03$ ). Residents with moderate (ERR = 2.34;  $p = 0.01$ ) or severe CI (trend with an ERR = 1.62;  $p = 0.06$ ) had longer sustained walking distances at slower speeds when compared to residents with no CI.

**CONCLUSIONS:** After accounting for cognitive status, it was balance ability, not gait quality, that was a determinant of sustained walking distances and speeds. Therefore, balance interventions for older adults in assisted living may enable sustained walking activity. Given that CI was associated with more sustained walking, limiting sustained walking in the form of wandering behavior, especially for those with balance impairments, may prevent adverse events, including fall-related injury.

Copyright © 2018. Published by Elsevier B.V.

**PDFY Endnote Y****Comparison of factors associated with fear of falling between older adults with and without a fall history**

Lee S, Oh E, Hong GS.

*Int. J. Environ. Res. Public Health* 2018; 15(5): e15050982.

**Affiliation:** School of Nursing, Hanyang University, #222 Wangsimliro, Sungdong-gu, Seoul 04763, Korea. grson@hanyang.ac.kr.

(Copyright © 2018, Multidisciplinary Digital Publishing Institute)

**DOI** 10.3390/ijerph15050982 **PMID** 29757960

**Abstract**

**BACKGROUND:** Although fear of falling (FOF) has been studied since FOF has negative consequences for the elderly, there is limited information about the risk factors of FOF, including the environment. The purpose of this study was to describe individual and environmental factors of FOF between

those with and without a fall history from an ecological aspect and to examine whether individual and environmental factors differently affect the FOF according to the state of fall history in community-dwelling older adults in Korea.

**METHODS:** Data from the 2014 Survey of Living Conditions and Welfare Needs of Korean Older Adults were used. Participants were 7730 older adults. Hierarchical logistic regression analysis was conducted to examine the predictors of FOF.

**RESULTS:** According to the ecological model, female and discomfort with the neighborhood environment were significantly associated with greater odds of reporting FOF in both older adults with fall history and those without. A significant interaction was not observed between any variable of FOF in participants with and without a fall history.

**CONCLUSIONS:** An ecological model including individual and environmental factors should be considered when conducting research and designing programs and decision policies related to FOF for older adults with and without a history of falling.

**PDF Y Endnote Y**

### **Comparison of gait patterns in elderly fallers and non-fallers**

Kwon MS, Kwon YR, Park YS, Kim JW.

*Technol. Health Care* 2018; ePub(ePub): ePub.

**Affiliation:** BK21 Plus Research Institute of Biomedical Engineering, Konkuk University, Chungju, Korea.

(Copyright © 2018, European Society for Engineering and Medicine, Publisher IOS Press)

**DOI** 10.3233/THC-174736 **PMID** 29758966

#### **Abstract**

Gait is associated with an important risk factor of falls in the elderly. It is important to find differences of quantitative gait variables between fallers and non-fallers. The aim of this study was to investigate gait patterns in elderly fallers and non-fallers. Thirty-eight fallers and 38 non-fallers of similar age and height participated in this study. Subjects walked across the GaitRite walkway at self-selected comfortable speeds. Spatio-temporal gait variables were measured to characterize gait patterns. Kinetic variables were derived from normalized vertical ground reaction force (GRF). Independent t-tests were performed to compare the fallers with the non-fallers. The fallers walked more slowly with shorter steps and more variable step times than the non-fallers ( $p < 0.05$ ). The fallers showed a longer stance phase with increased double-limb support than the non-fallers ( $p < 0.05$ ). The times to reach maximal weight acceptance and mid-stance of the fallers were significantly longer than those of the non-fallers ( $p < 0.05$ ). These results suggest that spatio-temporal variables and GRF variables would be useful for distinguishing prospective fallers from non-fallers among the elderly.

**PDF Y Endnote Y**

### **Effects of DanceSport on walking balance and standing balance among the elderly**

Sohn J, Park SH, Kim S.

*Technol. Health Care* 2018; ePub(ePub): ePub.

**Affiliation:** Department of Physical Education, College of Education, Research Institute of Physical Education, Chonbuk National University, Jeonju, Korea.

(Copyright © 2018, European Society for Engineering and Medicine, Publisher IOS Press)

DOI 10.3233/THC-174760 PMID 29758971

### Abstract

**BACKGROUND:** Dancesport is a popular activity among older adults who look for fun and fitness in Korea. Studies reported positive sociological and psychological effects of dancesport. But, little studies were performed to evaluate the effects of dancesport on balance performances.

**OBJECTIVE:** The objective of the present study was to evaluate the effects of dancesport for 15 weeks on walking balance and standing balance of older adults.

**METHODS:** Older adults regularly participated in the dancesport program 3 times a week for 15 weeks. The program included Rumba, Cha-cha-cha, and Jive. They exercised the prescribed dancesport at intermediate level for 50-60 mins for each time. A total 22 reflective markers were placed on the anatomical landmarks and 8 cameras were used to measure 3-D positions of participants. Also, center of pressure (COP) data were measured to analyze standing balance using a ground reaction board at 1200 Hz for 30 seconds. One-way analysis of variance (ANOVA) was performed to test the effects of 15 weeks of dancesport on walking balance and standing balance.

**RESULTS:** The results suggested that, after 15 weeks of dancesport participation, older adults' walking balance ( $48.3 \pm 20.3 \text{ cm}^2$  vs  $38.2 \pm 18.2 \text{ cm}^2$ ) and standing balance (COP area:  $189.4 \pm 85.4 \text{ mm}^2$  vs  $103.5 \pm 55.4 \text{ mm}^2$ , COP distance:  $84.2 \pm 34.4 \text{ cm}$  vs  $76.5 \pm 21.4 \text{ cm}$ ) were significantly improved.

**CONCLUSION:** Performing dancesport would require moving center of mass rapidly and frequently while maintaining posture. This may result in improving walking balance and standing balance in the present study. The study concluded that dancesport would be an effective exercise method in enhancing postural stability of older adults.

### PDF Y Endnote Y

#### Estimating the economic burden related to older adult falls by state

Haddad YK, Bergen G, Florence CS.

*J. Public Health Manag. Pract.* 2018; ePub(ePub): ePub.

**Affiliation:** Emory University, Rollins School of Public Health, Atlanta, Georgia (Dr Haddad); and Division of Unintentional Injury Prevention (Drs Haddad and Bergen) and Division of Analysis, Research and Practice Integration (Dr Florence), National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, Atlanta, Georgia.

(Copyright © 2018, Lippincott Williams and Wilkins)

DOI 10.1097/PHH.0000000000000816 PMID 29757813

### Abstract

**OBJECTIVE:** Unintentional falls in older adults (persons 65 years of age and older) impose a significant economic burden on the health care system.

**METHODS** for calculating state-specific health care costs are limited. This study describes 2 methods to estimate state-level direct medical spending due to older adult falls and explains their differences, advantages, and limitations.

**DESIGN:** The first method, partial attributable fraction, applied a national attributable fraction to the total state health expenditure accounts in 2014 by payer type (Medicare, Medicaid, and private insurance). The second method, count applied to cost, obtained 2014 state counts of older adults treated and released from an emergency department and hospitalized because of a fall injury. The counts in each state were multiplied by the national average lifetime medical costs for a fall-related

injury from the Web-based Injury Statistics Query and Reporting System. Costs are reported in 2014 US dollars.

SETTING: United States.

PARTICIPANTS: Older adults.

MAIN OUTCOME MEASURE: Health expenditure on older adult falls by state.

RESULTS: The estimate from the partial attributable fraction method was higher than the estimate from the count applied to cost method for all states compared, except Utah. Based on the partial attributable fraction method, in 2014, total personal health care spending for older adult falls ranged from \$48 million in Alaska to \$4.4 billion in California. Medicare spending attributable to older adult falls ranged from \$22 million in Alaska to \$3.0 billion in Florida. For the count applied to cost method, available for 17 states, the lifetime medical costs of 2014 fall-related injuries ranged from \$68 million in Vermont to \$2.8 billion in Florida.

CONCLUSIONS: The 2 methods offer states options for estimating the economic burden attributable to older adult fall injuries. These estimates can help states make informed decisions about how to allocate funding to reduce falls and promote healthy aging.

**PDF Y Endnote Y**

### **Exercise alone and various combinations of interventions reduce the risk of injurious falls in older adults**

Slawson D.

*Am. Fam. Physician* 2018; 97(9): 606-607.

**Affiliation:** University of Virginia Health System, Charlottesville, VA, USA.

(Copyright © 2018, American Academy of Family Physicians)

**DOI** unavailable **PMID** 29763256

**Abstract** [Abstract unavailable]

**PDF N Endnote Y**

### **Integrated exposure therapy and exercise reduces fear of falling and avoidance in older adults: a randomized pilot study**

Wetherell JL, Bower ES, Johnson K, Chang DG, Ward SR, Petkus AJ.

*Am. J. Geriatr. Psychiatry* 2018; ePub(ePub): ePub.

**Affiliation:** Department of Neurology, University of Southern California, Los Angeles, CA.

(Copyright © 2018, American Association for Geriatric Psychiatry, Publisher Elsevier)

**DOI** 10.1016/j.jagp.2018.04.001 **PMID** 29754811

**Abstract**

OBJECTIVES: To evaluate the safety and acceptability of a novel 8-week intervention integrating exercise, exposure therapy, cognitive restructuring, and a home safety evaluation, conducted by a physical therapist, in reducing fear of falling and activity avoidance. To collect preliminary evidence of efficacy.

DESIGN: Randomized pilot study comparing the intervention to time- and attention-equivalent fall prevention education.

SETTING: Participants' homes.

PARTICIPANTS: 42 older adults with disproportionate fear of falling (high fear, low to moderate objective fall risk).

**MEASUREMENTS:** Falls Efficacy Scale-International, modified Activity Card Sort, satisfaction, falls.

**RESULTS:** Relative to education, the intervention reduced fear of falling ( $d = 1.23$ ) and activity avoidance ( $d = 1.02$ ) at 8 weeks, but effects eroded over a 6-month follow-up period. The intervention did not increase falls, and participants rated the exercise, exposure therapy, and non-specific elements as most helpful.

**CONCLUSIONS:** An integration of exercise and exposure therapy may help older adults with disproportionate fear of falling, but modifications to the intervention or its duration may be needed to maintain participants' gains. Published by Elsevier Inc.

**PDF Y Endnote Y**

### **Locations, circumstances, and outcomes of falls in patients with glaucoma**

Sotimehin AE, Yonge AV, Mihailovic A, West SK, Friedman DS, Gitlin LN, Ramulu PY.

*Am. J. Ophthalmol.* 2018; ePub(ePub): ePub.

**Affiliation:**The Wilmer Eye Institute, Johns Hopkins University School of Medicine; Baltimore, Maryland; The Dana Center for Preventive Ophthalmology, Johns Hopkins University; Baltimore, MD. Electronic address: pramulu@jhmi.edu.

(Copyright © 2018, Elsevier Publishing)

**DOI** 10.1016/j.ajo.2018.04.024 **PMID** 29750950

#### **Abstract**

**PURPOSE:** To characterize the locations, circumstances, and outcomes of falls in patients with varying degrees of glaucoma.

**DESIGN:** Prospective cohort study

**METHODS:** Patients with suspected or diagnosed glaucoma completed monthly calendars reporting falls. After each fall, a 30-item questionnaire was administered to determine fall location, circumstances, and injury. Mean deviation on visual field (VF) testing was used to categorize glaucoma severity.

**MAIN OUTCOME MEASURES:** Fall locations, circumstances, and outcomes.

**RESULTS:** One-hundred forty-two patients experienced 330 falls. Falls were most likely to occur in/around the home (71%), and this likelihood did not vary significantly with severity of VF damage ( $p > 0.2$ ). The most commonly cited fall circumstances were tripping, (43.6%), slipping (31.3%), uneven flooring (23.5%), and poor vision (15.9%). The circumstances related to falls did not vary by severity of VF damage ( $p > 0.2$ ) except for poor vision, which was more frequently cited in individuals with more advanced VF damage ( $p = 0.001$ ). Forty-three percent of falls resulted in some injury; and the likelihood of injury did not vary by severity of VF loss ( $p = 0.60$ ) or any other factor except floor type and number of comorbidities ( $p < 0.05$  for all). Falls in persons with more severe glaucoma were more likely to result in a fracture (9.4%) or an ER visit (18.8%), though these associations did not persist in multivariable models ( $p > 0.5$  for all).

**CONCLUSIONS:** Glaucoma patients fall mostly in/around the home and demonstrate similar fall circumstances across the spectrum of disease severity, suggesting that current fall-prevention-interventions, particularly those emphasizing home modification, may be an adequate starting point to prevent falls in this high-risk-group.

Copyright © 2018. Published by Elsevier Inc.

**PDF Y Endnote Y**

### **Longer-term quality of life following major trauma: age only significantly affects outcome after the age of 80 years**

Gross T, Morell S, Amsler F.

*Clin. Interv. Aging* 2018; 13: 773-785.

**Affiliation:** Amsler Consulting, Basel, Switzerland.

(Copyright © 2018, Dove Medical Press)

**DOI** 10.2147/CIA.S158344 **PMID** 29750022 **PMCID** PMC5933340

#### **Abstract**

**AIM:** Against the background of conflicting data on the topic, this study aimed to determine the differences in longer-term patient outcomes following major trauma with regard to age.

**MATERIALS AND METHODS:** A prospective trauma center survey of survivors of trauma ( $\geq 16$  years) was carried out employing a New Injury Severity Score (NISS)  $\geq 8$  to investigate the influence of age on working capacity and several outcome scores, such as the trauma medical outcomes study Short Form-36 (physical component [PCS] and mental component [MCS]), the Euro Quality of Life (EuroQoL), or the Trauma Outcome Profile (TOP) at least 1 year following injury. Chi square tests, *t*-tests, and Pearson correlations were used as univariate; stepwise regression as multivariate analysis. Significance was set at  $p < 0.05$ .

**RESULTS:** In all, 718 major trauma patients ( $53.4 \pm 19.4$  years; NISS  $18.4 \pm 9.2$ ) participated in the study. Multivariate analysis showed only low associations of patient or trauma characteristics with longer-term outcome scores, highest for the Injury Severity Score of the extremities with the PCS ( $R^2 = 0.08$ ) or the working capacity of employed patients ( $n = 383$ ;  $R^2 = 0.04$ ). For age, overall associations were even lower (best with the PCS,  $R^2 = 0.04$ ) or could not be revealed at all (TOP or MCS). Subgroup analysis with regard to decennia revealed the age effect to be mainly attributable to patients aged  $\geq 80$ , who presented with a significantly worse outcome compared to younger people in all overall and physical component scores ( $p < 0.001$ ). In patients under 80 years an association of age was only found for EuroQoL ( $R^2 = 0.01$ ) and the PCS ( $R^2 = 0.03$ ).

**CONCLUSION:** Given the small impact of age on the longer-term outcomes of major trauma patients, at least up to the age of 80 years, resuscitation as well as rehabilitation strategies should be adapted accordingly.

#### **PDF Y Endnote Y**

### **Overdosing of benzodiazepines/Z-drugs and falls in older adults: costs for the health system**

Diaz-Gutierrez MJ, Cengotitabengoa MM, Bermúdez-Ampudia C, García S, López P, Martínez-Cengotitabengoa M, Gonzalez-Pinto A.

*Exp. Gerontol.* 2018; ePub(ePub): ePub.

**Affiliation:** Biomedical Research Centre in Mental Health Network (CIBERSAM) G10, Spain, University of the Basque Country, Spain; Psychiatry Department, BioAraba, Health Research Institute, Araba University Hospital, 29 Olaguibel Street, 01004 Vitoria, Spain.

(Copyright © 2018, Elsevier Publishing)

**DOI** 10.1016/j.exger.2018.05.002 **PMID** 29751092

#### **Abstract**

**INTRODUCTION:** Benzodiazepines and Z drugs (BZD/Z drugs) are commonly used for the treatment of insomnia and anxiety in older adults for long periods of time. Given the physiological and metabolic characteristics of this group of patients, they are more prone to the adverse effects of

these drugs which include falls. The recommendations for use of BZD/Z drugs include the need to adjust the dose and select those with a short half-life, to avoid adverse events, which as well as potentially affecting patient outcome, increase healthcare costs. In this study, we have evaluated the hospital-related costs associated with falls in older adults who use BZD/Z drugs at doses higher than recommended for this age group.

**METHODS:** We conducted a cross-sectional observational study assessing the BZD/Z drug prescriptions of older adults attending the emergency department after a fall. Cost analysis was performed for cases in which the prescriptions exceeded the maximum recommended dose for this age group.

**RESULTS:** A total of 40.6% of the prescriptions recorded were higher than the defined daily dose in older adults. Of the 57 patients who used BZD/Z drugs at higher-than-recommended doses, 53 experienced trauma and 33 required hospitalisation. The costs associated with emergency department services, tests performed and hospitalisation amounted to €1850/patient.

**CONCLUSIONS:** Appropriate dosage of BZD/Z drugs in older adults could reduce both patient suffering and costs for the health system.

Copyright © 2017. Published by Elsevier Inc.

#### PDF Y Endnote Y

#### **Predictors of falls and fractures leading to hospitalization in people with dementia: a representative cohort study**

Sharma S, Mueller C, Stewart R, Veronese N, Vancampfort D, Koyanagi A, Lamb SE, Perera G, Stubbs B. *J. Am. Med. Dir. Assoc.* 2018; ePub(ePub): ePub.

**Affiliation:** South London and Maudsley NHS Foundation Trust, London, United Kingdom; Institute of Psychiatry, Psychology and Neuroscience, King's College London, London, United Kingdom.

Electronic address: brendon.stubbs@kcl.ac.uk.

(Copyright © 2018, Lippincott Williams and Wilkins)

**DOI** 10.1016/j.jamda.2018.03.009 **PMID**29752159

#### **Abstract**

**OBJECTIVES:** Investigate predictors of falls and fractures leading to hospitalization in a large cohort of people with dementia.

**DESIGN:** A retrospective cohort study.

**SETTING AND PARTICIPANTS:** People with diagnosed dementia between January 2007 and March 2013, aged >65 years, were assembled using data from the Maudsley Biomedical Research Centre Case Register, from 4 boroughs in London serving a population of 1.3 million people.

**MEASURES:** Falls and/or fractures leading to hospitalization were ascertained from linked national records.

Demographic data, cognitive test scores, medications, and symptom and functioning scores from Health of the Nation Outcome Scales (HoNOS65+) were modeled in multivariate survival analyses to identify predictors of falls and fractures.

**RESULTS:** Of 8036 people with dementia (63.9% female), 2500 (31.1%, incidence rate 125.5 per 1000 person-years) had a fall during a mean follow-up of 2.5 years and 1437 (17.7%, incidence rate 65.5 per 1000 person-years) had a fracture. In multivariable models, significant predictors of falls were increased age, female gender, physical health problems, previous fall or fracture, vascular dementia vs Alzheimer's disease, higher neighborhood deprivation, noncohabiting status, and problems with living conditions. Ethnic minority status was protective of falls (eg, Caribbean/Asian ethnicity).



Medications (including psychotropic and antipsychotics), neuropsychiatric symptoms, cognitive (Mini-Mental State Examination scores), or functional problems did not predict hospitalized falls. Predictors of fractures were similar to those predicting falls. **IMPLICATIONS:** Over an average of 2.5 years, a third of people with dementia had a fall leading to hospitalization, necessitating action in clinical practice. Clinicians should consider that besides established demographic and physical health-related factors, the risk of hospitalization due to a fall or fractures in dementia is largely determined by environmental and socioeconomic factors. Interestingly, our data suggest that neuropsychiatric symptoms, cognitive status, functioning, or pharmacotherapy were not associated with falls/fractures.

Copyright © 2018 AMDA – The Society for Post-Acute and Long-Term Care Medicine. Published by Elsevier Inc. All rights reserved.

#### PDF Endnote

#### **Predictors of falls in older survivors of breast and prostate cancer: A retrospective cohort study of surveillance, epidemiology and end results-Medicare health outcomes survey linkage**

Huang MH, Blackwood J, Godoshian M, Pfalzer L.

*J. Geriatr. Oncol.* 2018; ePub(ePub): ePub.

**Affiliation:** Physical Therapy Department, School of Health Professions and Studies, University of Michigan-Flint, United States.

(Copyright © 2018, Elsevier Publishing)

**DOI** 10.1016/j.jgo.2018.04.009 **PMID** 29752141

#### Abstract

**OBJECTIVES:** To identify predictors of falls in older breast and prostate cancer survivors.

**METHODS:** This retrospective cohort study analyzed population-based Surveillance, Epidemiology and End Results-Medicare Health Outcomes Survey (SEER-MHOS) linkage. Inclusion criteria were age >65 years at cancer diagnosis, first primary female breast or prostate cancer, cancer staging information available, completion of baseline MHOS during years 2-3 and follow-up MHOS during years 4-5 post-diagnosis, and falls information available. Data from 437 breast and 660 prostate cancer survivors were analyzed. Multivariable logistic regression was constructed to evaluate variables from baseline MHOS with relation to falls from follow-up MHOS. Model accuracy was assessed using area under receiver-operating-characteristic curve (AUC).

**RESULTS:** At follow-up MHOS, 26% of breast and 22% of prostate cancer survivors reported falls in the past 12 months. In breast cancer, a history of falls (odds ratio (OR) = 4.95, 95% confidence interval (CI) = 2.44-10.04) and sensory impairment in feet (OR = 3.33, 95%CI = 1.51-7.32) were significant predictors of falls. In prostate cancer, a history of falls (OR = 3.04, 95%CI = 1.79-5.15), unmarried (OR = 1.82, 95%CI = 1.12-2.95), lower physical summary score of quality-of-life (OR = 0.96, 95%CI = 0.94-0.98), urinary incontinence (OR = 1.69, 95%CI = 1.08-2.65), older age at diagnosis (OR = 1.05, 95%CI = 1.01-1.09), and shorter time post-diagnosis (OR = 0.96, 95%CI = 0.93-0.99) were significant predictors of falls. AUC was 0.67 and 0.77 for breast and prostate cancer, respectively, indicating moderate accuracy of models in detecting fallers.

**CONCLUSIONS:** Asking older breast and prostate cancer survivors about falls in the past 12 months is imperative in fall prevention. Further examination of deficits specific to each cancer is necessary to assess fall risks. Copyright © 2018 Elsevier Inc. All rights reserved.

#### PDF Y Endnote Y

### **The association of pain, race and slow gait speed in older adults**

Taylor JL, Parker LJ, Szanton SL, Thorpe RJ.

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

**Affiliation:** Department of Health, Behavior, and Society, Johns Hopkins Bloomberg School of Public Health, 615 North Wolfe St., Baltimore, MD 21205, USA; Hopkins Center for Health Disparities Solutions, Johns Hopkins Bloomberg School of Public Health, 615 North Wolfe St., Baltimore, MD 21205, USA.

(Copyright © 2018, Elsevier Publishing)

**DOI** 10.1016/j.gerinurse.2018.04.004 **PMID** 29752144

#### **Abstract**

Gait speed is an important indicator of mobility and quality of life in older adults. Pain is related to gait speed; however, it is unknown if this relationship varies by race in a population based national sample. The aim of this study was to examine if the association between slow gait speed and pain differed between 7,025 older African Americans and non Hispanic Whites in the National Health and Aging Trends Study. Those with pain in the last month had higher odds of slow gait speed (odds ratio = 1.38, 95% confidence interval = 1.10 - 1.73) than those without pain. The relationship between pain and slow gait speed did not vary by race (interaction  $p = 0.6$ ). This is important because it points to the underlying racial disparities in pain and gait speed being factors such as disparate opportunities and living conditions, and healthcare rather than attributes intrinsic to race. Copyright © 2018 Elsevier Inc. All rights reserved.

#### **PDF Y Endnote Y**

### **The influence of occupation on wellbeing, as experienced by the elderly: a systematic review**

Jessen-Winge C, Petersen MN, Morville AL.

*JBI Database Syst. Rev Implement. Rep.* 2018; 16(5): 1174-1189.

**Affiliation:** Department of Rehabilitation, School of Health and Welfare, Jönköping University, Sweden.

(Copyright © 2018, Joanna Briggs Institute)

**DOI** 10.11124/JBISRIR-2016-003123 **PMID** 29762312

#### **Abstract**

**OBJECTIVE:** The objective of this review was to synthesize knowledge regarding which types of occupations the elderly perceive as important to and supporting their overall wellbeing.

**INTRODUCTION:** Being active is an important part of managing the daily challenges of advanced old age. Occupational therapy and occupational science are based on the premise that a person's occupations are intertwined with their health and are thus needed for them to experience a meaningful life and improve their wellbeing.

**INCLUSION CRITERIA:** This review, which included independently living elderly people aged 65 and over living in Europe, the USA, Canada and Australia, sought to uncover if the elderly see any specific types of occupations as enhancing their wellbeing. This review included qualitative studies with designs including, but not limited to, phenomenology, grounded theory, ethnography and action research.

**METHODS:** A three-step search strategy using Joanna Briggs Institute methodology was utilized. Both published and unpublished studies were searched. The following databases were searched for studies up to 2017: CINAHL, Nursing and Allied Health Source, Web of Science, PubMed and

OpenGrey. Using the JBI Critical Appraisal Checklist for Qualitative Research, two independent reviewers assessed whether each study had the methodological quality required to be included in the review. Any disagreements were resolved through discussion with a third reviewer. The standardized JBI data extraction tool for interpretive and critical research was used to extract data from the included studies. JBI tools were used to pool the qualitative research findings. The findings were then aggregated through a process of rating according to quality, and categorized according to similarity in meaning, which generated a set of statements for each category. These categories were then subjected to a meta-synthesis to produce a single comprehensive set of synthesized findings useful as a basis for evidence-based practice.

**RESULTS:** All three of the included studies utilized qualitative interviews and followed a phenomenological approach. The studies included only participants aged 85 and over. Thirty-five findings were extracted and grouped into four categories, which were synthesized into two meta-syntheses: 1) The importance of "doing" alone - to feel good, I have to be the master of my own life; and 2) Old habits never die - a structured day is a good day. Based on the dependability and credibility of the three studies, the ranking was high (see Summary of Findings).

**CONCLUSIONS:** The present review shows that two factors enhance elderly people's wellbeing: first, variation and independence in undertaking activities; second, having a choice between the occupations and a structure of activities that make up daily life. The two factors are influenced by a balance between having activities alone and with others. This review is not intended to identify specific occupations that enhance elderly people's wellbeing, but rather to indicate which types of occupations enhance the wellbeing of the elderly, and provide value and meaning to their daily lives. Both the dependability and the credibility of the studies have been rated as moderate.

#### PDF Endnote

#### **Analysis of foot kinematics wearing high heels using the Oxford foot model**

Wang M, Gu Y, Baker JS.

*Technol. Health Care* 2018; ePub(ePub): ePub.

**Affiliation:** Institute of Clinical Exercise and Health Science, University of the West of Scotland, Hamilton, UK.

(Copyright © 2018, European Society for Engineering and Medicine, Publisher IOS Press)

**DOI** 10.3233/THC-181264 **PMID** 29758978

#### **Abstract**

Wearing high heels is thought to lead to various foot disorders and injuries such as metatarsal pain, Achilles tendon tension, plantar fasciitis and Haglund malformation. However, there is little available information explaining the specific mechanisms and reasons why wearing high heels causes foot deformity. Therefore, the purpose of this study was to investigate the foot kinematics of high heel wearers and compare any differences with barefoot individuals using the Oxford Foot Model (OFM). Fifteen healthy women aged 20-25 years were measured while walking barefoot and when wearing high heels. The peak value of angular motion for the hallux with respect to the forefoot, the forefoot with respect to the hind foot, and the hind foot with respect to the tibia were all analyzed. Compared to the barefoot, participants wearing high heels demonstrated larger hallux dorsiflexion ( $22.55^\circ \pm 1.62^\circ$  VS  $26.6^\circ \pm 2.33^\circ$  for the barefoot;  $P = 0.001$ ), and less hallux plantarflexion during the initial stance phase ( $-4.86^\circ \pm 2.32^\circ$  VS  $-8.68^\circ \pm 1.13^\circ$ ;  $P < 0.001$ ). There were also greater forefoot adduction ( $16.15^\circ \pm 1.37^\circ$  VS  $13.18^\circ \pm 0.79^\circ$ ;  $P < 0.001$ ), but no significant differences were found in forefoot abduction between the

two conditions. The hind foot demonstrated a larger dorsiflexion in the horizontal plane ( $16.59 \pm 1.69^\circ$  VS  $12.08 \pm 0.9^\circ$ ;  $P < 0.001$ ), greater internal rotation ( $16.72 \pm 0.48^\circ$  VS  $7.97 \pm 0.55^\circ$ ;  $P < 0.001$ ), and decreased peak hind foot extension rotation ( $-5.49 \pm 0.69^\circ$  VS  $-10.73 \pm 0.42^\circ$ ;  $P = 0.001$ ). These findings complement existing kinematic evidence that wearing high heels can lead to foot deformities and injuries.

#### PDF N Endnote Y

#### Effects of exercise on gait and motor imagery in people with Parkinson disease and freezing of gait

Myers PS, McNeely ME, Pickett KA, Duncan RP, Earhart GM.

*Parkinsonism Relat. Disord.* 2018; ePub(ePub): ePub.

**Affiliation:** Program in Physical Therapy, Washington University in St. Louis School of Medicine, Campus Box 8502, 4444 Forest Park Blvd, Suite 11101, St. Louis, MO 63108, USA; Department of Neurology, Washington University in St. Louis School of Medicine, Campus Box 8111, 660 S. Euclid, St. Louis, MO 63110, USA; Department of Neuroscience, Washington University in St. Louis School of Medicine, Campus Box 8108, 660 S. Euclid, St. Louis, MO 63110, USA. Electronic address: earhartg@wustl.edu.

(Copyright © 2018, Elsevier Publishing)

**DOI** 10.1016/j.parkreldis.2018.05.006 **PMID** 29754837

#### Abstract

**INTRODUCTION:** Exercise improves gait in Parkinson disease (PD), but whether exercise differentially affects people with PD with (freezers) and without freezing of gait (non-freezers) remains unclear. This study examines exercise's effects on gait performance, neural correlates related to these effects, and potential neural activation differences between freezers and non-freezers during motor imagery (MI) of gait.

**METHODS:** Thirty-seven participants from a larger exercise intervention completed behavioral assessments and functional magnetic resonance imaging (fMRI) scans before and after a 12-week exercise intervention. Gait performance was characterized using gait velocity and stride length, and a region of interest (ROI) fMRI analysis examined task-based blood oxygen-level dependent (BOLD) signal changes of the somatomotor network (SMN) during MI of forward (IMG-FWD) and backward (IMG-BWD) gait.

**RESULTS:** Velocity ( $F(1,34) = 55.04$ ,  $p < 0.001$ ) and stride length ( $F(1,34) = 77.58$ ,  $p < 0.001$ ) were significantly lower for backward versus forward walking in all participants. The ROI analysis showed freezers had lower BOLD signal compared to non-freezers in the cerebellum ( $F(1,32) = 7.01$ ,  $p = 0.01$ ), primary motor (left:  $F(1,32) = 7.09$ ,  $p = 0.01$ ; right:  $F(1,32) = 7.45$ ,  $p = 0.01$ ), and primary sensory (left:  $F(1,32) = 9.59$ ,  $p = 0.004$ ; right:  $F(1,32) = 8.18$ ,  $p = 0.007$ ) cortices during IMG-BWD only. The evidence suggests the exercise intervention did not affect gait or BOLD signal during MI. **CONCLUSION:** While all participants had significantly slower and shorter backward velocity and stride length, respectively, the exercise intervention had no effect. Similarly, BOLD signal during MI did not change with exercise; however, freezers had significantly lower BOLD signal during IMG-BWD compared to non-freezers. This suggests potential decreased recruitment of the SMN during MI of gait in freezers.

Copyright © 2018 Elsevier Ltd. All rights reserved.

#### PDF Y Endnote Y

## **Gaze stability, dynamic balance and participation deficits in people with multiple sclerosis at fall-risk**

Garg H, Dibble LE, Schubert MC, Sibthorp J, Foreman KB, Gappmaier E.

*Anat. Rec.* (2007) 2018; ePub(ePub): ePub.

**Affiliation:** Department of Physical Therapy, The University of Utah, 520 Wakara Way, Salt Lake City, Utah, 84108, United States.

(Copyright © 2018, John Wiley and Sons)

**DOI** 10.1002/ar.23852 **PMID** 29729209

### **Abstract**

Despite the common complaints of dizziness and demyelination of afferent or efferent pathways to and from the vestibular nuclei which may adversely affect the angular Vestibulo-Ocular Reflex (aVOR) and vestibulo-spinal function in persons with Multiple Sclerosis (PwMS), few studies have examined gaze and dynamic balance function in PwMS.

**OBJECTIVES:** 1) Determine the differences in gaze stability, dynamic balance and participation measures between PwMS and controls, 2) Examine the relationships between gaze stability, dynamic balance and participation.

**METHODS:** Nineteen ambulatory PwMS at fall-risk and 14 age-matched controls were recruited. Outcomes included (a) gaze stability [angular Vestibulo-Ocular Reflex (aVOR) gain (ratio of eye to head velocity); number of Compensatory Saccades (CS) per head rotation; CS latency; gaze position error; Coefficient of Variation (CV) of aVOR gain], (b) dynamic balance [Functional Gait Assessment, FGA; four square step test], and (c) participation [dizziness handicap inventory; activities-specific balance confidence scale]. Separate independent t-tests and Pearson's correlations were calculated. **RESULTS:** PwMS were age =  $53 \pm 11.7$  yrs and had  $4.2 \pm 3.3$  falls/yr. PwMS demonstrated significant ( $p < 0.05$ ) impairments in gaze stability, dynamic balance and participation measures compared to controls. CV of aVOR gain and CS latency were significantly correlated with FGA.

**CONCLUSIONS:** Deficits and correlations across a spectrum of disability measures highlight the relevance of gaze and dynamic balance assessment in PwMS. This article is protected by copyright. All rights reserved.

© 2018 Wiley Periodicals, Inc.

**PDF N Endnote Y**