

Dementia and Cognition

This document contains all abstracts for publications relating to dementia and cognition for 2020. These abstracts have been sourced from [SafetyLit.org](https://www.safetylit.org) and include only those relevant to falls prevention.

SafetyLit provides weekly abstracts of peer reviewed articles from researchers who work in the more than 30 distinct professional disciplines relevant to preventing and researching unintentional injuries, violence, and self-harm. Each week citations and summaries of about 400 articles and reports are included in a PDF document or through an RSS subscription.

Contents:

Dementia:	p2
Cognition:	p15

Dementia

The risk of head injuries associated with antipsychotic use among persons with Alzheimer's disease

Tapiainen V, Lavikainen P, Koponen M, Taipale H, Tanskanen A, Tiihonen J, Hartikainen S, Tolppanen AM. *J. Am. Geriatr. Soc.* 2020; ePub(ePub): ePub.

Affiliation

Kuopio Research Centre of Geriatric Care, University of Eastern Finland, Kuopio, Finland.

(Copyright © 2020, John Wiley and Sons)

DOI 10.1111/jgs.16275 **PMID** 31912482

Abstract

BACKGROUND/OBJECTIVES: Antipsychotic use is associated with risk of falls among older persons, but we are not aware of previous studies investigating risk of head injuries. We studied the association of antipsychotic use and risk of head injuries among community dwellers with Alzheimer's disease (AD).

DESIGN: Nationwide register-based cohort study. **SETTING:** Medication Use and Alzheimer's Disease (MEDALZ) cohort, Finland. **PARTICIPANTS:** The MEDALZ cohort includes Finnish community dwellers who received clinically verified AD diagnosis in 2005 to 2011. Incident antipsychotic users were identified from the Prescription Register and matched with nonusers by age, sex, and time since AD diagnosis (21 795 matched pairs). Persons with prior head injury or history of schizophrenia were excluded.

MEASUREMENTS: Outcomes were incident head injuries (International Classification of Diseases, Tenth Revision [ICD-10] codes S00-S09) and traumatic brain injuries (TBIs; ICD-10 codes S06.0-S06.9) resulting in a hospital admission (Hospital Discharge Register) or death (Causes of Death Register). Inverse probability of treatment (IPT) weighted Cox proportional hazard models were used to assess relative risks.

RESULTS: Antipsychotic use was associated with an increased risk of head injuries (event rate per 100 person-years = 1.65 [95% confidence interval {CI} = 1.50-1.81] for users and 1.26 [95% CI = 1.16-1.37] for nonusers; IPT-weighted hazard ratio [HR] = 1.29 [95% CI = 1.14-1.47]) and TBIs (event rate per 100 person-years = 0.90 [95% CI = 0.79-1.02] for users and 0.72 [95% CI = 0.65-0.81] for nonusers; IPT-weighted HR = 1.22 [95% CI = 1.03-1.45]). Quetiapine users had higher risk of TBIs (IPT-weighted HR = 1.60 [95% CI = 1.15-2.22]) in comparison to risperidone users.

CONCLUSIONS: These findings imply that in addition to previously reported adverse events and effects, antipsychotic use may increase the risk of head injuries and TBIs in persons with AD. Therefore, their use should be restricted to most severe neuropsychiatric symptoms, as recommended by the AGS Beers Criteria®. Additionally, higher relative risk of TBIs in quetiapine users compared to risperidone users should be confirmed in further studies.

Language: en

Keywords Alzheimer's disease; antipsychotics; dementia; risk factors; traumatic brain injury

Foot care to improve physical function and prevent falling of frail elderly adults with and without dementia

Yamashita T, Yamashita K, Takase Y. Conf. Proc. IEEE Eng. Med. Biol. Soc. 2019; 2019: 321-324.

(Copyright © 2019, IEEE (Institute of Electrical and Electronics Engineers))

DOI 10.1109/EMBC.2019.8857767 **PMID** 31945906

Abstract

Feet and toenail abnormalities are common among the elderly and can increase the risk of falls. We examined the changes in physical function after feet and toenails care for frail elderly adults and elderly adults with dementia. As a result, the abnormalities in the subject's feet and toenails improved, and the individuals' physical function and social participation increased.

Language: en

Quantitative and qualitative analyses of the clock drawing test in fall and non-fall patients with Alzheimer's disease

Suzuki Y, Mochizuki H, Oki M, Matsumoto M, Fukushima M, Yoshikawa Y, Nagasawa A, Takakura T, Shimoda N. *Dement. Geriatr. Cogn. Dis. Extra* 2019; 9(3): 381-388.

Affiliation

Department of Rehabilitation, Faculty of Health Sciences, Tokyo Kasei University, Saitama, Japan.

(Copyright © 2019, Karger Publishers)

DOI 10.1159/000502089 **PMID** 31966036

Abstract

AIM: The clock drawing test (CDT) is widely used as a visual spatial ability test and screening test for dementia patients. The appearance frequency of qualitative errors obtained through the qualitative analysis of CDT may be related to the participant's falls. The aim of this study was to clarify the difference in the number of people who presented with qualitative errors in the CDT between a fall and non-fall group of patients with Alzheimer's disease (AD).

METHODS: The CDT was implemented for 47 patients with AD. A quantitative analysis was conducted, and a qualitative analysis was performed for errors. The patients were divided into two groups based on their history of falls over the past year. The results of the CDT quantitative analysis were tested using the Mann-Whitney U test, and Fisher's exact test was employed to determine the difference in the number of people who presented with error types between the two groups (fall group, non-fall group) in the CDT qualitative analysis.

RESULTS: In the quantitative analysis, a significant difference was found for the total scores, with the total CDT score of the fall group ($n = 22$) significantly lower than that of the non-fall group ($n = 25$) ($p = 0.006$, effect size: $\phi = 0.40$). In the qualitative analysis, a significantly higher number of patients in the fall group than in the non-fall group presented with a conceptual deficit ($p = 0.001$, $\phi = 0.51$). No differences were found in the number of patients in the two groups who presented with the other five error types.

CONCLUSIONS: These results showed that a lower score in the CDT quantitative analysis might suggest an increased risk of falls. It was also clarified that a larger number of patients in the fall group than in the non-fall group presented with a conceptual deficit of the qualitative error types in the CDT. Therefore, these results suggest that the appearance of a conceptual deficit may be an index for the selection of patients with AD prone to falling when implementing fall prevention measures.

Language: en

Keywords

Alzheimer's disease; Clock drawing test; Fall; Qualitative analysis

Falls risk and Alzheimer disease: a patient guide

Kahya M, Sood P, Devos H, Krishnan S, Hirsch MA, Heyn P. Arch. Phys. Med. Rehabil. 2020; ePub(ePub): ePub.

(Copyright © 2020, Elsevier Publishing)

DOI 10.1016/j.apmr.2020.01.005 **PMID** 32115098

Abstract

Alzheimer disease is a common brain disorder in older adults that affects memory, thinking, and behavior. The symptoms usually develop slowly but become worse with time and can affect day-to-day activities ...

Language: en

Deep learning prediction of falls among nursing home residents with Alzheimer's disease

Suzuki M, Yamamoto R, Ishiguro Y, Sasaki H, Kotaki H. *Geriatr. Gerontol. Int.* 2020; ePub(ePub): ePub.

Affiliation

Department of Rehabilitation, Hatsutomi Hoken Hospital, Chiba, Japan.

(Copyright © 2020, Japan Geriatrics Society, Publisher John Wiley and Sons)

DOI 10.1111/ggi.13920 **PMID** 32267067

Abstract

AIM: This study aimed to use a convolutional neural network (CNN) to investigate the associations between the time of falling and multiple complicating factors, including age, dementia severity, lower extremity strength and physical function, among nursing home residents with Alzheimer's disease.

METHODS: A total of 42 people with Alzheimer's disease were enrolled. We evaluated falling events from nursing home admission (baseline) to 300 days later. We assessed the knee extension strength and Functional Independence Measure locomotion item and carried out the Mini-Mental State Examination at baseline. To predict falling, participants were categorized into three classes: those who fell within the first 150 (or 300) days from baseline or those who did not experience a fall within the study period. For each class, 1000 bootstrap datasets were generated using 42 actual sample datasets, and were used to propose a CNN algorithm and cross-validate the algorithm.

RESULTS: Eight (19.0%), 11 (26.2%) and 31 participants (73.8%) fell within 150 or 300 days after the baseline assessment or did not fall until 300 days or later, respectively. The highest accuracy rate of the CNN classification was 0.647 in the factor combination extracted from the Mini-Mental State Examination score, knee extension strength and Functional Independence Measure locomotion item score.

CONCLUSIONS: A CNN based on multiple complicating factors could predict the time of falling in nursing home residents with Alzheimer's disease. *Geriatr Gerontol Int* 2020
Language: en

Keywords

Alzheimer's disease; falling; nursing home resident; prediction

Measuring gait variables using computer vision to assess mobility and fall risk in older adults with dementia

Ng KD, Mehdizadeh S, Iaboni A, Mansfield A, Flint A, Taati B. IEEE J. Transl. Eng. Health Med. 2020; 8: e2100609.

(Copyright © 2020, Institute of Electrical and Electronics Engineers)

DOI 10.1109/JTEHM.2020.2998326 **PMID** 32537265

Abstract

Fall risk is high for older adults with dementia. Gait impairment contributes to increased fall risk, and gait changes are common in people with dementia, although the reliable assessment of gait is challenging in this population. This study aimed to develop an automated approach to performing gait assessments based on gait data that is collected frequently and unobtrusively, and analysed using computer vision methods. Recent developments in computer vision have led to the availability of open source human pose estimation algorithms, which automatically estimate the joint locations of a person in an image. In this study, a pre-existing pose estimation model was applied to 1066 walking videos collected of 31 older adults with dementia as they walked naturally in a corridor on a specialized dementia unit over a two week period. Using the tracked pose information, gait features were extracted from video recordings of gait bouts and their association with clinical mobility assessment scores and future falls data was examined. A significant association was found between extracted gait features and a clinical mobility assessment and the number of future falls, providing concurrent and predictive validation of this approach.

Language: en

Keywords

dementia; falls; Computer vision; gait; pose tracking; stability

Relationship between balance, gait, and activities of daily living in older adults with dementia

Lee NG, Kang TW, Park HJ. *Geriatr Orthop Surg Rehabil* 2020; 11: e2151459320929578.

(Copyright © 2020, SAGE Publishing)

DOI 10.1177/2151459320929578 **PMID** 32528740

Abstract

INTRODUCTION: Gait characteristics are closely associated with executive functions including basic and high-level cognitive processes such as attention, working memory, decision-making, and problem-solving. Impaired cognitive function resulting from dementia is associated with loss of balance and poor activities of daily living (ADLs). If associations between gait parameters, balance, and ADLs are observed, then quantitative gait analysis may be optimal for reinforcing balance and ADL assessments in people with dementia. This study aimed to determine the association between balance, gait, and ADLs in older adults with dementia.

Materials and Methods: A cross-sectional study was conducted in 46 older adults who have been diagnosed with dementia. Measurements including the Mini-Mental State Examination-Korean version (MMSE-K), Berg Balance Scale (BBS), 10-meter walk test (10MWT), Modified Barthel index (MBI), and GAITRite were used to assess cognitive function, balance, walking speed, ADLs, and gait parameters, respectively. The Pearson product correlation coefficient (r) was used for correlation analysis.

Results and Discussion: Among the gait parameters, velocity was positively associated with the BBS, 10MWT, and MBI ($r = 0.341-0.516$, $P > .05$). Step length ($r = 0.301-0.586$, $P > .05$), stride length ($r = 0.329-0.580$, $P > .05$), and walk ratio ($r = 0.324-0.556$, $P > .05$) were positively associated with the MMSE-K, BBS, 10MWT, and MBI. A moderate positive association between single support time and MBI was observed ($r = 0.308$, $P = .039$). Additionally, a moderate negative association between double support time and the MBI was observed ($r = -0.349$, $P = .019$). This study presents the first empirical evidence on the association between balance, gait, and ADLs in older adults with dementia.

Conclusions: This study identified important associations between balance, gait, and ADL assessments in people with dementia. Further studies involving targeted interventions addressing gait parameters and improving balance and functional performance in people with dementia are required in the future.

Language: en

Keywords

dementia; older adults; activities of daily living; balance; gait parameters

Combining cognitive stimulation therapy and fall prevention exercise (CogEx) in older adults with mild to moderate dementia: a feasibility randomised controlled trial

Binns E, Kerse N, Peri K, Cheung G, Taylor D. Pilot Feasibility Stud. 2020; 6: e108.

(Copyright © 2020, Holtzbrinck Springer Nature Publishing Group - BMC)

DOI 10.1186/s40814-020-00646-6 PMID 32724661

Abstract

BACKGROUND: People living with dementia (PLwD) have a high fall risk as cognitive impairment compromises control of gait and balance. Fall prevention exercises that are effective in healthy older adults may not work for PLwD. Cognitive stimulation therapy (CST) has been shown to improve global cognition in PLwD. A programme which combines cognitive (CST) with physical exercises may reduce falls in PLwD. The aim of this study was to assess the feasibility of undertaking a full scale randomised controlled trial to test the effectiveness of CogEx in decreasing falls in PLwD. Specific objectives included recruitment strategy, data collection, outcome measures, intervention fidelity and facilitator/participant experience.

Methods: A mixed methods feasibility randomised controlled trial recruited people from residential aged care. Inclusion criteria were ≥ 65 years old, Montreal Cognitive Assessment (MoCA) score of 10 to 26 and able to participate in a group. Participants were randomised to CST or CST combined with strength and balance exercises (CogEx). Both CST and CogEx groups were for an hour twice a week for 7 weeks. Descriptive statistics were used to report pre- and post-intervention outcome measures (MoCA, Geriatric Depression Scale-15, Quality of Life-Alzheimer's Disease, Alzheimer's Disease Assessment Scale-Cognitive 11, Brief Balance Evaluation Systems Test and Short Form Physical Performance Battery) and attendance. Qualitative analysis of participant focus groups and facilitator interviews used a conventional approach. Sessions were video recorded and exercise completion documented.

Results: Thirty-six residents were screened with 23 participants randomised to intervention (CogEx, $n = 10$) or control (CST, $n = 13$). The assessments took 45 min to 1.5 h, and there was repetition between two cognitive measures. Ten facilitators completed training with the manualised programme. Exercises were combined into the hour-long CST session; however, limited balance training occurred with participants exercising predominantly in sitting. The facilitators felt the participants engaged more and were safer in sitting.

Conclusions: The results demonstrated that while fall prevention exercises could be scheduled into the CST structure, the fidelity of the combined programme was poor. Other components of the study design need further consideration before evaluation using a randomised controlled trial is feasible.

Trial registration: anzctr.org.au (ACTRN12616000751471) 8 Jun 2016, Australian New Zealand Clinical Trials Registry.

Language: en

Keywords

Exercise; Dementia; Cognitive stimulation therapy

Reduced gray matter volume and risk of falls in Parkinson's disease with dementia patients: a Voxel-based morphometry study

Cheng KL, Lin LH, Chen PC, Chiang PL, Chen YS, Chen HL, Chen MH, Chou KH, Li SH, Lu CH, Lin WC. *Int. J. Environ. Res. Public Health* 2020; 17(15): e5374.

(Copyright © 2020, MDPI: Multidisciplinary Digital Publishing Institute)

DOI 10.3390/ijerph17155374 **PMID** 32722623

Abstract

PURPOSE: Risk of falls is a common sequela affecting patients with Parkinson's disease (PD). Although motor impairment and dementia are correlated with falls, associations of brain structure and cognition deficits with falls remain unclear. **Material and Methods:** Thirty-five PD patients with dementia (PDD), and 37 age- and sex-matched healthy subjects were recruited for this study. All participants received structural magnetic resonance imaging (MRI) scans, and disease severity and cognitive evaluations. Additionally, patient fall history was recorded. Regional structural differences between PDD with and without fall groups were performed using voxel-based morphometry processing. Stepwise logistic regression analysis was used to predict the fall risk in PDD patients.

RESULTS: The results revealed that 48% of PDD patients experienced falls. Significantly lower gray matter volume (GMV) in the left calcarine and right inferior frontal gyrus in PDD patients with fall compared to PDD patients without fall were noted. The PDD patients with fall exhibited worse UPDRS-II scores compared to PDD patients without fall and were negatively correlated with lower GMV in the left calcarine ($p/r = 0.004/-0.492$). Furthermore, lower GMV in the left calcarine and right inferior frontal gyrus correlated with poor attention and executive functional test scores. Multiple logistic regression analysis showed that the left calcarine was the only variable ($p = 0.004$, 95% CI = 0.00-0.00) negatively associated with the fall event.

CONCLUSIONS: PDD patients exhibiting impaired motor function, lower GMV in the left calcarine and right inferior frontal gyrus, and notable cognitive deficits may have increased risk of falls.

Language: en

Keywords

dementia; fall; brain structure; executive function; Parkinson's disease

Falls associate with neurodegenerative changes in ATN framework of Alzheimer's disease

Keleman A, Wisch JK, Bollinger RM, Grant EA, Benzinger TL, Morris JC, Ances BM, Stark SL. *J. Alzheimers Dis.* 2020; ePub(ePub): ePub.

(Copyright © 2020, IOS Press)

DOI 10.3233/JAD-200192 **PMID** 32741815

Abstract

BACKGROUND: Behavioral markers for Alzheimer's disease (AD) are not included within the widely used amyloid-tau-neurodegeneration framework.

OBJECTIVE: To determine when falls occur among cognitively normal (CN) individuals with and without preclinical AD.

METHODS: This cross-sectional study recorded falls among CN participants (n=83) over a 1-year period. Tailored calendar journals recorded falls. Biomarkers including amyloid positron emission tomography (PET) and structural and functional magnetic resonance imaging were acquired within 2 years of fall evaluations. CN participants were dichotomized by amyloid PET (using standard cutoffs). Differences in amyloid accumulation, global resting state functional connectivity (rs-fc) intra-network signature, and hippocampal volume were compared between individuals who did and did not fall using Wilcoxon rank sum tests. Among preclinical AD participants (amyloid-positive), the partial correlation between amyloid accumulation and global rs-fc intra-network signature was compared for those who did and did not fall.

RESULTS: Participants who fell had smaller hippocampal volumes (p=0.04). Among preclinical AD participants, those who fell had a negative correlation between amyloid uptake and global rs-fc intra-network signature (R=-0.75, p=0.012). A trend level positive correlation was observed between amyloid uptake and global rs-fc intra-network signature (R=0.70, p=0.081) for preclinical AD participants who did not fall.

CONCLUSION: Falls in CN older adults correlate with neurodegeneration biomarkers. Participants without falls had lower amyloid deposition and preserved global rs-fc intra-network signature. Falls most strongly correlated with presence of amyloid and loss of brain connectivity and occurred in later stages of preclinical AD.

Language: en

Keywords

falls; volumetrics; Alzheimer's disease; biomarkers; resting state functional connectivity

The intersection of falls and dementia in primary care: evaluation and management considerations

Casey CM, Caulley J, Phelan EA. *Med. Clin. North Am.* 2020; 104(5): 791-806.

(Copyright © 2020, Elsevier Publishing)

DOI 10.1016/j.mcna.2020.06.003 **PMID** 32773046

Abstract

A large body of research has addressed the assessment and management of fall risk among community-dwelling older adults. Persons with dementia are at higher risk for falls and fall-related injuries, yet less is known about effective strategies for reducing falls and injuries among those with dementia. Falls and dementia are regularly considered to be discrete conditions and are often managed separately. Increasing evidence shows that these conditions frequently co-occur, and one may precede the other. This article explores the relationship between falls and dementia, including the importance of rehabilitation strategies for reducing fall risk in these individuals.

Language: en

Keywords

Falls; Fall prevention; Older adults; Occupational therapy; Persons with dementia; Physical therapy; Rehabilitation services; Risk assessment and management

A mixed methods systematic review of informal caregivers' experiences of fall risk among community-dwelling elders with dementia

Zhou Y, Strayer AT, Phelan EA, Sadak T, Hooyman NR. Health Soc. Care Community 2020; ePub(ePub): ePub.

(Copyright © 2020, John Wiley and Sons)

DOI 10.1111/hsc.13148 **PMID** 32893451

Abstract

Evidence on effective fall prevention strategies for community-dwelling elders with dementia is limited, although these elders are at high risk of falling. Informal caregivers may play an essential role in managing fall risk for elders with dementia. Thus, understanding caregiver's experiences is critically important. This systematic review aims to (a) identify caregivers' perceptual, emotional and behavioural responses to fall risk in elders with dementia and (b) examine the outcomes and effects of caregiver behavioural responses. A mixed methods systematic review of 10 databases (PubMed, PsycINFO, CINAHL, Social Service Abstracts, Social Work Abstracts, EMBASE, Web of Science, Scopus, Cochrane Library and TRIP Medical Database) was conducted. We searched English language, peer-review articles (January 1, 1985-March 20, 2020) that met the predefined inclusion/exclusion criteria. Study quality was assessed using the Mixed Methods Appraisal Tool. Data were analysed using thematic synthesis techniques. Twenty-nine studies were included. Six analytic themes were generated concerning caregivers' perceptual, emotional and behavioural responses: (a) fear of the negative health consequences of falls; (b) limited insights into factors contributing to falls; (c) varying expectations of managing fall risk; (d) multi-level efforts; (e) struggling with responsibilities; and (f) inaction and withdrawal. The findings about the outcomes and effects of caregivers' behaviours were synthesised into three analytic themes: (a) multi-faceted outcomes; (b) uncertain and inconsistent evidence; and (c) unclear associations. The study generated new insights in understanding caregivers' responses of fall risk among community-dwelling elders with dementia and identified significant gaps in examining the impact of caregivers' responses and what shapes these responses. Investment in understanding caregivers' perspectives will inform future interventions and policies to reduce negative outcomes for elders, caregivers and care systems.

Language: en

Keywords

prevention; dementia; systematic review; fall risk; caregiver; elders

Predicting short-term risk of falls in a high-risk group with dementia

Mehdizadeh S, Sabo A, Ng KD, Mansfield A, Flint AJ, Taati B, Iaboni A. *J. Am. Med. Dir. Assoc.* 2020; ePub(ePub): ePub.

(Copyright © 2020, Lippincott Williams and Wilkins)

DOI 10.1016/j.jamda.2020.07.030 **PMID** 32900610

Abstract

OBJECTIVES: To develop a prognostic model to predict the probability of a short-term fall (within the next 7 to 30 days) in older adults with dementia.

DESIGN: Prospective observational study.

SETTING AND PARTICIPANTS: Fifty-one individuals with dementia at high risk of falls from a specialized dementia inpatient unit.

METHODS: Clinical and demographic measures were collected and a vision-based markerless motion capture was used to record the natural gait of participants over a 2-week baseline. Falls were tracked throughout the length of stay. Cox proportional hazard regression analysis was used to build a prognostic model to determine fall-free survival probabilities at 7 days and at 30 days. The model's discriminative ability was also internally validated.

RESULTS: Fall history and gait stability (estimated margin of stability) were statistically significant predictors of time to fall and included in the final prognostic model. The model's predicted survival probabilities were close to observed values at both 7 and 30 days. The area under the receiver operating curve was 0.80 at 7 days, and 0.67 at 30 days and the model had a discrimination performance (the Harrel concordance index) of 0.71.

CONCLUSIONS AND IMPLICATIONS: Our short-term falls risk model had fair to good predictive and discrimination ability. Gait stability and recent fall history predicted an imminent fall in our population. This provides some preliminary evidence that the degree of gait instability may be measureable in natural everyday gait to allow dynamic falls risk monitoring. External validation of the model using a separate data set is needed to evaluate model's predictive performance.

Language: en

Keywords

accidental falls; Walking; computer vision; survival analysis; gait stability

Cognition

Impaired cognition predicts falls among women with and without HIV infection

Sharma A, Vance DE, Hoover DR, Shi Q, Yin MT, Holman S, Plankey MW, Tien PC, Weber KM, Floris-Moore M, Bolivar HH, Golub ET, McDonnell Holstad M, Rubin LH. J. Acquir. Immune Defic. Syndr. (LWW) 2020; ePub(ePub): ePub.

Affiliation

Johns Hopkins University School of Medicine, Baltimore, MD.

(Copyright © 2020, Lippincott Williams and Wilkins)

DOI 10.1097/QAI.0000000000002262 **PMID** 31913989

Abstract

OBJECTIVE: To determine if domain-specific neurocognitive (NC) impairments predict falls in HIV+ compared to HIV- women.

DESIGN: Cross-sectional data analysis from 825 HIV+ and 392 HIV- women in the Women's Interagency HIV Study (WIHS) with NC testing within two years prior to falls surveys.

METHODS: NC impairment (T score <40) was assessed in seven domains: executive function, psychomotor speed, attention, learning, memory, fluency, and fine motor function. For domains associated with any fall within 6 months in simple logistic regression ($p < .05$), hierarchical regression models evaluated associations between NC impairment and odds of falling, adjusting for: (1) study site and HIV, (2) demographics, (3) comorbid conditions, (4) substance use/CNS active medications, and HIV-specific factors.

RESULTS: Median age was higher in HIV+ than HIV- women (51yrs vs. 48yrs); prevalence of falls was similar (19% HIV+, 16% HIV-). Overall, executive function (OR [odds ratio]=1.82, 95%CI [confidence interval] 1.21-2.74; $P=0.004$), psychomotor speed (OR=1.59, 95%CI 1.05-2.42, $P=0.03$), and fine motor (OR 1.70, 95%CI 1.11-2.61, $P=0.02$) impairments were associated with greater odds of falls in fully adjusted models. In fully adjusted models, associations of executive function, psychomotor speed, and fine motor were non-significant among HIV+ women; conversely, among HIV- women, associations with impaired executive and fine motor functions were strengthened, and remained significant.

CONCLUSIONS: Cognitive impairment was associated with falls among middle-aged HIV- but not HIV+ women. Additional studies should elucidate mechanisms by which domain-specific NC impairment impacts fall risk among older HIV+ and HIV- women, and how different factors modify relationships between cognition and falls.

Language: en

Sarcopenia is associated with cognitive decline and falls but not hospitalization in community-dwelling oldest old in China: a cross-sectional study

Xu W, Chen T, Shan Q, Hu B, Zhao M, Deng X, Zuo J, Hu Y, Fan L. *Med. Sci. Monit.* 2020; 26: e919894.

Affiliation

Department of Geriatric Cardiology, The Second Medical Center and National Clinical Research Center for Geriatric Diseases, Chinese People's Liberation Army (PLA) General Hospital, Beijing, China (mainland).

(Copyright © 2020, Medical Science International)

DOI 10.12659/MSM.919894 **PMID** 31980594

Abstract

BACKGROUND The aim of this study was to investigate the association between sarcopenia and cognitive decline, falls, and hospitalization in a Chinese elderly population. **MATERIAL AND METHODS** This cross-sectional survey was conducted between November 2018 and May 2019, and enrolled only older adults aged 80 years or over (oldest old). We diagnosed sarcopenia using the Asian Working Group for Sarcopenia criteria. Demographic characteristics, disease history, smoking status, drinking status, cognitive function, falls, and hospitalization events in the previous 12 months were acquired by face-to-face interview. Cognitive status was evaluated by the Montreal Cognitive Assessment. Falls was ascertained by the question "Have you fallen down in the last 12 months?" Hospitalization was ascertained by the question "Have you received inpatient care in the past year?" **RESULTS** A total of 582 participants (aged 80-99 years and 42.3% male) were included. The prevalence of sarcopenia was 21.7% (95% confidence interval [CI]: 17.3-26.2%) and 33.3% (95% CI: 27.4-39.3%) for females and males, respectively. Among the study population, the prevalence of cognitive decline was 60.8%; the proportions of the oldest old who had falls or hospitalization in the past 12 months were 18.1% and 34.3%, respectively. Multivariate analyses showed that sarcopenia was significantly and independently associated with cognitive decline [odds ratio (OR)=1.96, 95% CI: 1.17-3.27] and falls (OR=2.00, 95% CI: 1.17-3.43) but not associated with hospitalization (OR=1.32, 95% CI: 0.83-2.08).

CONCLUSIONS Our results showed that sarcopenia was significantly and independently associated with cognitive decline and falls, but not associated with hospitalization, in the community-dwelling oldest old.

Language: en

Gait, cognition and falls over 5 years, and motoric cognitive risk in New Zealand octogenarians: Te Puāwaitanga o Nga Tapuwae Kia Ora Tonu, LiLACS NZ

Lord S, Moyes S, Teh R, Port W, Muru-Lanning M, Bacon CJ, Wilkinson T, Kerse N. *BMC Geriatr.* 2020; 20(1): e43.

Affiliation

Department of General Practice and Primary Health Care, Faculty of Medical and Health Sciences, University of Auckland, Tamaki Campus, Auckland, New Zealand.

(Copyright © 2020, Holtzbrinck Springer Nature Publishing Group - BMC)

DOI 10.1186/s12877-020-1420-8 **PMID** 32024482

Abstract

BACKGROUND: Understanding falls risk in advanced age is critical with people over 80 a rapidly growing demographic. Slow gait and cognitive complaint are established risk factors and together comprise the Motoric Cognitive Risk Syndrome (MCR). This study examined trajectories of gait and cognition and their association with falls over 5 years, and documented MCR in Māori and non-Māori of advanced age living in New Zealand.

METHOD: Falls frequency was ascertained retrospectively at annual assessments. 3 m gait speed was measured and cognition was assessed using the Modified Mini-Mental Status Examination (3MS). Frequency of MCR was reported. Gait and cognition trajectories were modelled and clusters identified from Latent Class Analysis. Generalised linear models examined association between changes in gait, cognition, MCR and falls.

RESULTS: At baseline, 138 of 408 Māori (34%) and 205 of 512 non-Māori (40%) had fallen. Mean (SD) gait speed (m/s) for Māori was 0.66 (0.29) and 0.82 (0.26) for non-Māori. Respective 3MS scores were 86.2 (15.6) and 91.6 (10.4). Ten (4.3%) Maori participants met MCR criteria, compared with 7 (1.9%) non-Māori participants. Māori men were more likely to fall (OR 1.56; 95% CI 1.0-2.43 (P = 0.04) whilst for non-Māori slow gait increased falls risk (OR 0.40; 95% CI 0.24-0.68(P < 0.001). Non-Māori with MCR were more than twice as likely to fall than those without MCR (OR 2.45; 95% CI 1.06-5.68 (P = 0.03).

CONCLUSIONS: Māori and non-Māori of advanced age show a mostly stable pattern of gait and cognition over time. Risk factors for falls differ for Māori, and do not include gait and cognition.

Language: en

Exploring enablers and barriers to accessing health services after a fall among people with intellectual disability

Ho P, Bulsara C, Patman S, Downs J, Hill AM. *J. Appl. Res. Intellect. Disabil.* 2020; ePub(ePub): ePub.

Affiliation

School of Physiotherapy and Exercise Science, Curtin University, Perth, WA, Australia.

(Copyright © 2020, John Wiley and Sons)

DOI 10.1111/jar.12704 **PMID** 32039539

Abstract

BACKGROUND: Adults with intellectual disability experience high rates of falls making falls prevention an important health need. The purpose of the study was to seek perspectives of older adults with intellectual disability and their caregivers to (a) explore the experiences of older adults with intellectual disability when seeking healthcare services after a fall and (b) identify enablers and barriers when taking up evidence-based falls recommendations.

METHOD: A qualitative exploratory study was undertaken as part of a prospective observational cohort study. Semi-structured interviews were conducted with a purposeful sample. Data were analysed thematically using Colaizzi's method.

RESULTS: Seventeen interviews were conducted (n = 21). Emergent themes demonstrated that participants had limited knowledge about falls prevention. Enablers included individualizing falls prevention strategies. Barriers included not being offered access to established falls prevention pathways.

CONCLUSION: There is an urgent need to develop high-quality falls prevention services for older adults with intellectual disability.

Language: en

Keywords

accidental falls; barriers and enablers; intellectual disability; referral and consultation

Does the presence of cognitive impairment exacerbate the risk of falls in people with peripheral neuropathy? An application of body-worn inertial sensors to measure gait variability

Kang GE, Yang J, Najafi B. *Sensors (Basel)* 2020; 20(5): e1328.

Affiliation

Interdisciplinary Consortium on Advanced Motion Performance (iCAMP), Michael E. DeBakey Department of Surgery, Baylor College of Medicine, Houston, TX 77030, USA.

(Copyright © 2020, MDPI: Multidisciplinary Digital Publishing Institute)

DOI 10.3390/s20051328 **PMID** 32121396

Abstract

People with peripheral neuropathy (PN) are at risk of falling. Many people with PN have comorbid cognitive impairment, an independent risk factor of falls, which may further increase the risk of falling in people with PN. However, the negative synergic effect of those factors is yet to be reported. We investigated whether the presence of cognitive impairment exacerbates the risk of falls in people with PN by measuring gait variability during single-task walking and dual-task walking. Forty-four adults with PN were recruited. Based on the Montreal Cognitive Assessment (MoCA) scores, 19 and 25 subjects were cognitively impaired and intact, respectively. We measured coefficients of variation of gait speed, stride length, and stride time using validated body-worn sensors. During single-task walking, no between-group differences were observed (all $p > 0.05$). During dual-task walking, between-group differences were significant for gait variability for gait speed and stride length (51.4% and 71.1%, respectively; $p = 0.014$ and 0.011 , respectively). MoCA scores were significantly correlated with gait variability for gait speed ($r = 0.319$, $p = 0.035$) and stride length ($r = 0.367$, $p = 0.014$) during dual-task walking. Our findings suggest that the presence of cognitive impairment exacerbates the risk of falls in people with PN.

Language: en

Keywords

Cognitive impairment; body-worn sensors; chemotherapy-induced peripheral neuropathy; diabetic peripheral neuropathy; dual-task walking; gait variability; single-task walking

Intellectual disability, falls and gait disturbances: a misdiagnosis

Lorenzo Villalba N, Díaz Nicolas S, Alonso Ortiz MB, Cordoba Sosa Z, Suárez Ortega S, Zulfiqar AA. Eur. J. Case Rep. Intern. Med. 2020; 7(3): e001488.

Affiliation

Service de Médecine Interne, Diabète et Maladies Métaboliques, Hôpitaux Universitaires de Strasbourg, Strasbourg, France.

(Copyright © 2020, SMC Media)

DOI 10.12890/2020_001488 **PMID** 32206646

Abstract

We report the case of a 27-year-old man presenting with slowly progressive extrapyramidal dysfunction and learning disability considered to have a syndromic intellectual disability. The re-evaluation of the clinical features and the investigations performed led to the diagnosis of atypical pantothenate kinase-associated neurodegeneration (PKAN). **LEARNING POINTS:** Patients with an intellectual disability should be carefully evaluated. In the evaluation of a patient with extrapyramidal dysfunction for several years, with gradual progression, spasticity and psychiatric disturbances, PKAN should be considered.

Language: en

Keywords

Neurodegeneration with brain iron accumulation; magnetic resonance imaging; pantothenate kinase-associated neurodegeneration

Executive function predicts decline in mobility after a fall: the MYHAT study

Hughes TF, Beer JC, Jacobsen E, Ganguli M, Chang CH, Rosano C. *Exp. Gerontol.* 2020; ePub(ePub): ePub.

Affiliation

Department of Epidemiology, University of Pittsburgh, United States of America. Electronic address: rosanoc@edc.pitt.edu.

(Copyright © 2020, Elsevier Publishing)

DOI 10.1016/j.exger.2020.110948 **PMID** 32302664

Abstract

BACKGROUND: Evidence suggests that better cognitive functioning is associated with better mobility in older age. It is unknown whether older adults with better cognitive function are more resilient to mobility decline after a fall.

METHODS: Participants from the Monongahela Youghiogheny Healthy Aging Team (MYHAT) study were followed annually for up to 9 years for incident falls. We examined one-year (mean 1.0 year, SD 0.1) change in mobility pre- to post-fall using the Timed Up and Go (TUG) in relation to pre-fall cognition (executive function, attention, memory, and visuospatial function) among incident fallers (n = 598, mean age 79.1, SD = 7.0). Linear regression models tested the association of cognition with change in TUG. Interaction terms were tested to explore if age, sex, body mass index, physical activity, depressive symptoms, or visual acuity modified the associations of cognition and mobility among fallers. The association between cognition and one-year change in TUG was also tested in a comparison sample of non-fallers (n = 442, mean age 76.3, SD = 7.2).

RESULTS: Overall, mobility decline was greater in fallers compared to non-fallers. In fully-adjusted models, higher executive function, but not attention, memory, or visuospatial function, was associated with less decline in mobility among incident fallers. The effect was significantly stronger for those who were older, sedentary, and had lower body mass index. Higher scores in memory tests, but not in other domains, was associated with less mobility decline among non-fallers.

CONCLUSIONS: Higher executive function may offer resilience to mobility decline after a fall, especially among older adults with other risk factors for mobility decline. Future studies should assess whether executive function may be a helpful risk index of fall-related physical functional decline in geriatric settings.

Language: en

Keywords

Cognition; Executive function; Falls; Mobility

Beyond balance and mobility, contributions of cognitive function to falls in older adults with cardiovascular disease

Blackwood J, Gore S. J. Frailty Sarcopenia Falls 2019; 4(3): 65-70.

Affiliation

MGH Institute of Health Professions, Boston, MA, USA.

(Copyright © 2019, Hylonome Publications)

DOI 10.22540/JFSF-04-065 **PMID** 32300720

Abstract

OBJECTIVES: Older adults with cardiovascular disease (CVD) are at risk for cognitive impairment. Cognitive function is associated with falls in older adults however it is unknown if a relationship exists between cognitive function and falls in CVD. The aim of this study was to examine the contributions of cognitive function on falls in older adults with CVD.

METHODS: A secondary analysis was performed on data from the Health and Retirement Study cohort 2010 (N=3413) of older adults with CVD. Group assignment was based on falls history (yes/no) within the two years prior to the survey. Demographic (age, education, gender, marital status), physical (strength, balance, physical activity, and mobility) and cognitive (immediate and delayed recall, orientation, semantic verbal fluency, numeracy) information was extracted to characterize the sample. Comparisons between groups were completed for all of these variables. Logistic regression was performed to examine associations between each of the cognitive variables and falls while controlling for age, gender, marital status, education, and BMI.

RESULTS: Demographic (age, gender, marital status, and education), physical (grip strength, tandem stance time, and gait speed), and cognitive (orientation, immediate and delayed recall) variables differed by falls history ($p < 0.05$). After controlling for confounding, immediate recall was the only significant predictor of falls (OR=1.09, 95% CI=1.01-1.17) (Nagelkerke $R^2=0.037$, $\chi^2=35.14$, $p < 0.05$) with correctly classifying 65.9% of cases.

CONCLUSIONS: In older adults with CVD, cognitive and physical functions are more impaired in those with a falls history. Screening for cognitive function, specifically immediate recall, should be a part of the management of falls in this population.

Language: en

Keywords

Cardiovascular disease; Cognition; Falls; Mobility; Recall

Fear of falling and cognitive impairment in elderly with different social support levels: findings from a community survey in Central Vietnam

Vo THM, Nakamura K, Seino K, Nguyen HTL, Van Vo T. BMC Geriatr. 2020; 20(1): e141.

Affiliation

The Institute for Community Health Research, College of Medicine and Pharmacy, Hue University, Hue, Vietnam.

(Copyright © 2020, Holtzbrinck Springer Nature Publishing Group - BMC)

DOI 10.1186/s12877-020-01533-8 **PMID** 32299392

Abstract

BACKGROUND: Fear of falling (FoF) in the elderly is one of the major public health concerns in this era of aging of the population. As there is limited evidence on how cognitive function may differ by social support level in relation to FoF among the elderly, this cross-sectional study aims to investigate the prevalence of FoF and the associations between cognitive impairment and FoF by the social support level, after adjustments for potential confounders.

METHODS: Data from the "Health needs assessment of elderly in Thua Thien Hue Province, Vietnam in 2018" survey of 725 elderly aged 60 years or older were used for analysis. FoF was assessed using the Fall Efficacy Scale-International. High FoF was defined as a score above 28. The Multidimensional Scale of Perceived Social Support was used to measure the perception of support. Logistic regression analysis was performed to investigate the association between cognitive function and FoF by social support levels ($p < 0.05$).

RESULTS: The prevalence of high FoF among the elderly was 40.8%. Female gender, advanced age, a marital status of single or formerly married, living alone, history of injury, history of falls, chronic diseases (arthritis and/or hypertension), limitations of the IADL and BADL, visual difficulty and walking difficulty, low social support, and cognitive impairment were all significantly associated with a high FoF. After adjustments for the age, gender, marital status, history of falls and health-related factors, cognitive impairment remained significantly associated with a high FoF among the elderly with a low to moderate social support level (OR = 2.97, 95% CI 1.49-5.89), but not in those with a high social support level.

CONCLUSIONS: A high FoF was associated with impairment of cognitive function among the elderly who perceived themselves as having low or moderate support levels, even after adjustments for socio demographic and physical functional factors. However, this association was not observed among the elderly who perceived themselves as having high social support levels. Fall prevention programs for the elderly with various levels of social support should be carefully devised, keeping in mind the cognitive function levels of the target recipients.

Language: en

Keywords

Cognitive impairment; Elderly; Fear of falling; Social support

Neuropsychiatric symptoms as predictors of falls in long-term care residents with cognitive impairment

Roitto HM, Öhman H, Salminen K, Kautiainen H, Laurila J, Pitkälä KH. *J. Am. Med. Dir. Assoc.* 2020; ePub(ePub): ePub.

(Copyright © 2020, Lippincott Williams and Wilkins)

DOI 10.1016/j.jamda.2020.04.003 **PMID** unavailable

Abstract

OBJECTIVES: Falls and neuropsychiatric symptoms (NPS) are common among long-term care residents with cognitive impairment. Despite the high prevalence of falls and NPS, little is known about their association. The aim of our study was to explore how NPS, particularly the severity of NPS and specific NPS subgroups, are associated with falls and how psychotropics modify this association.

DESIGN: Longitudinal cohort study.

SETTING AND PARTICIPANTS: In total, 532 long-term care residents aged 65 years or older in Helsinki, Finland.

METHODS: NPS were measured with Neuropsychiatric Inventory (NPI) at baseline. Participants were grouped into 3 groups: no significant NPS (NPI points 0–3), low NPS burden (NPI 4–12), and high NPS burden (NPI >12). The number of falls, injuries, fractures, and hospitalizations were collected from medical records over 12 months following baseline assessment.

RESULTS: Altogether, 606 falls occurred during the follow-up year. The falls led to 121 injuries, 42 hospitalizations, and 20 fractures. Falls and injuries increased significantly with NPS burden ($P < .001$): 330 falls in the high NPS group ($n = 184$), 188 falls in the low NPS group ($n = 181$), and 88 falls in the no significant NPS group ($n = 167$). The risk of falling showed a curvilinear association with NPI total score. Of NPS subgroups, psychosis and hyperactivity were associated with a higher incidence rate ratio of falls, whereas apathy had a protective association even after adjustment for age, sex, and mobility. Affective symptoms were not associated with falls. Psychotropics did not modify the association between NPS burden and falls.

CONCLUSIONS AND IMPLICATIONS: The results of this study show that NPS, especially NPS severity, may predict falls and fall-related negative consequences. Severity of NPS should be taken into account when assessing fall risk in long-term care residents with cognitive impairment.

Language: en

Keywords

Falls; cognitive impairment; long-term care; neuropsychiatric inventory; neuropsychiatric symptoms

Falls in community-dwelling older adults with lower back or knee pain are associated with cognitive and emotional factors

Hirase T, Makizako H, Okubo Y, Lord SR, Okita M, Nakai Y, Takenaka T, Kubozono T, Ohishi M. *Int. J. Environ. Res. Public Health* 2020; 17(14): e4960.

(Copyright © 2020, MDPI: Multidisciplinary Digital Publishing Institute)

DOI 10.3390/ijerph17144960 **PMID** 32660067

Abstract

(1) Background: The present study aimed to examine physical, cognitive and emotional factors affecting falls in community-dwelling older adults with and without pain; (2) Methods: Data from 789 older adults who participated in a community-based health survey were analyzed. Participants completed questionnaires on the presence of pain and previous falls. Muscle weakness (handgrip strength < 26.0 kg for men and < 18.0 kg for women) and low skeletal muscle mass (appendicular skeletal muscle mass index < 7.0 kg/m² for men and < 5.7 kg/m² for women) were determined. Mild cognitive impairment (MCI) and depressive symptoms were assessed using the National Center for Geriatrics and Gerontology-Functional Assessment Tool and 15-item geriatric depression scale (GDS-15), respectively; (3) Results: In participants with pain, MCI and GDS-15 were associated with previous falls after adjusting for age, sex, education and medication use. In participants without pain, muscle weakness and low skeletal muscle mass were associated with previous falls when adjusting for the above covariates; (4) Conclusions: Falls in participants with pain were associated with cognitive and emotional factors, whereas falls in those without pain were associated with physical factors. Fall prevention interventions for older adults with pain may require tailored strategies to address cognitive and emotional factors.

Language: en

Keywords

accidental falls; aged; pain; mild cognitive impairment; depressive symptoms

Prevalence of falls, physical performance, and dual-task cost while walking in older adults at high risk of falling with and without cognitive impairment

Li F, Harmer P. *Clin. Interv. Aging* 2020; 15: 945-952.

(Copyright © 2020, Dove Press)

DOI 10.2147/CIA.S254764 PMID 32606636

Abstract

PURPOSE: To compare the prevalence of falls, physical performance, and dual-task cost during walking between cognitively healthy and impaired older adults at high risk of falling.

Methods: A cross-sectional analysis of 670 community-dwelling older adults who were considered at high risk of falling, operationalized as 1) having fallen at least once in the preceding 12 months and having a health-care practitioner's referral indicating that the participant was at risk of falls or 2) having impaired mobility as evidenced by a Timed Up and Go (TUG) result ≥ 13.5 s. Participants (mean age = 77.7 years, SD = 5.6) were divided into cognitively healthy (n = 461) or cognitively impaired (n = 209) groups using a cutoff score of < 23 on the Montreal Cognitive Assessment test. Assessment included self-reported number of falls over the previous 12 months, functional reach, TUG, Short Physical Performance Battery (SPPB), and single- and dual-task walk performance. Data were analyzed using Poisson regression to estimate the prevalence ratios of falls and analysis of variance to examine between-group differences on physical performance and dual-task cost during walking performance.

Results: In the analysis, 82.3% of older adults with cognitive impairment and 69.4% of unimpaired older adults reported 1 or more falls in the previous 12 months. Compared with cognitively healthy participants, those with cognitive impairment were 2.57 (95% confidence interval [CI] = 2.17 to 3.05) times more likely to have any fall and 2.33 (95% CI = 1.95 to 2.78) times more likely to have multiple falls. Older adults with cognitive impairment performed worse on functional reach (mean difference [MD] = -2.33 cm, 95% CI = -3.21 to -1.46), TUG (MD = 3.05 s, 95% CI = 2.22 to 3.88), and SPPB (MD = -1.24 points, 95% CI = -1.55 to -0.92) and showed increase in dual-task costs (MD = 6.59%, 95% CI = 4.19 to 9.03) compared to those without cognitive impairment.

Conclusion: Older adults at high risk for falls and who have cognitive impairment are associated with a greater risk for falls and decrements in physical and dual-task performance.

Language: en

Keywords

elderly; falls; cognitive impairment; dual-task; physical performance

Effects of a 16-week multimodal exercise program on gait performance in individuals with dementia: a multicenter randomized controlled trial

Trautwein S, Barisch-Fritz B, Scharpf A, Ringhof S, Stein T, Krell-Roesch J, Woll A. *BMC Geriatr.* 2020; 20(1): e245.

(Copyright © 2020, Holtzbrinck Springer Nature Publishing Group - BMC)

DOI 10.1186/s12877-020-01635-3 **PMID** 32677897

Abstract

BACKGROUND: There is a high prevalence of gait impairments in individuals with dementia (IWD). Gait impairments are associated with increased risk of falls, disability, and economic burden for health care systems. Only few studies have investigated the effectiveness of physical activity on gait performance in IWD, reporting promising but inconsistent results. Thus, this study aimed to investigate the effectiveness of a multimodal exercise program (MEP) on gait performance in IWD.

METHODS: In this parallel-group randomized controlled trial, we enrolled 319 IWD of mild to moderate severity, living in care facilities, aged ≥ 65 years, and being able to walk at least 10 m. The control group (n = 118) received conventional treatment, whereas the intervention group (n = 201) additionally participated in a 16-week MEP specifically tailored to IWD. We examined the effects of the MEP on spatiotemporal gait parameters and dual task costs by using the gait analysis system GAITRite. Additionally, we compared characteristics between positive, non-, and negative responders, and investigated the impact of changes in underlying motor and cognitive performance in the intervention group by conducting multiple regression analyses.

RESULTS: Two-factor analyses of variance with repeated measurements did not reveal any statistically significant time*group effects on either spatiotemporal gait parameters or dual task costs. Differences in baseline gait performance, mobility, lower limb strength, and severity of cognitive impairments were observed between positive, non-, and negative responders. Positive responders were characterized by lower motor performance compared to negative and non-responders, while non-responders showed better cognitive performance than negative responders. Changes in lower limb strength and function, mobility, executive function, attention, and working memory explained up to 39.4% of the variance of changes in gait performance.

CONCLUSIONS: The effectiveness of a standardized MEP on gait performance in IWD was limited, probably due to insufficient intensity and amount of specific walking tasks as well as the large heterogeneity of the sample. However, additional analyses revealed prerequisites of individual characteristics and impacts of changes in underlying motor and cognitive performance. Considering such factors may improve the effectiveness of a physical activity intervention among IWD.

TRIAL REGISTRATION: DRKS00010538 (German Clinical Trial Register, date of registration: 01 June 2016, retrospectively registered, https://www.drks.de/drks_web/setLocale_EN.do).

Language: en

Keywords

Physical activity; Cognition; Walking; Dual task; Neurodegenerative disorder; Physical functional performance

Prevalence of cognitive and vestibular impairment in seniors experiencing falls

Varriano B, Sulway S, Wetmore C, Dillon W, Misquitta K, Multani N, Anor C, Martínez M, Cacchione E, Rutka J, Tartaglia MC. *Can. J. Neurol. Sci.* 2020; ePub(ePub): ePub.

(Copyright © 2020, Canadian Journal of Neurological Sciences)

DOI 10.1017/cjn.2020.154 **PMID** 32684199

Abstract

[Abstract unavailable]

Language: en