Safety Literature 31st July 2022

A tai chi for arthritis and fall prevention program for older adults during COVID-19

Lee K, Galet C, Lilienthal M, Skeete D. Am. J. Nurs. 2022; 122(8): 34-39.

Abstract

To minimize COVID-19 transmission, the University of Iowa suspended all in-person fall injury prevention programs in March 2020. However, falls continued to be the leading cause of injury-related mortality in Iowa; therefore, the university converted its in-person Tai Chi for Arthritis and Fall Prevention (TCAFP) program to a virtual program. Here, the authors describe the virtual TCAFP program and participants' overall experience. Among 83 older adults who participated in the first three virtual programs, 61 (73.5%) completed the programs. Of the 31 (37.3%) participants who filled out the postprogram satisfaction surveys, 30 (96.8%) found the Zoom platform easy to use and said the program met their expectations, 28 (90.3%) were happy with the quality of the instruction, and 29 (93.5%) said they learned the tai chi forms taught during the program and used an online video to practice between classes. Judging by the largely positive participant feedback, the authors considered the implementation of a virtual TCAFP program a success. The potential for the use of such a program beyond the pandemic to improve injury prevention efforts in rural environments warrants further exploration.

Language: en

Association between incident falls and subsequent fractures in patients attending the fracture liaison service after an index fracture: a 3-year prospective observational cohort study

Vranken L, Wyers CE, Van der Velde RY, Janzing HMJ, Kaarsemakers S, Driessen J, Eisman J, Center JR, Nguyen TV, Tran T, Bliuc D, Geusens P, van den Bergh JP. BMJ Open 2022; 12(7): e058983.

Abstract

OBJECTIVES: To evaluate the risk of subsequent fractures in patients who attended the Fracture Liaison Service (FLS), with and without incident falls after the index fracture.

DESIGN: A 3-year prospective observational cohort study. SETTING: An outpatient FLS in the Netherlands. PARTICIPANTS: Patients aged 50+ years with a recent clinical fracture. OUTCOME MEASURES: Incident falls and subsequent fractures.

RESULTS: The study included 488 patients (71.9% women, mean age: 64.6±8.6 years). During the 3-year follow-up, 959 falls had been ascertained in 296 patients (60.7%) (ie, fallers), and 60 subsequent fractures were ascertained in 53 patients (10.9%). Of the fractures, 47 (78.3%) were fall related, of which 25 (53.2%) were sustained at the first fall incident at a median of 34 weeks. An incident fall was associated with an approximately 9-fold (HR: 8.6, 95% CI 3.1 to 23.8) increase in the risk of subsequent fractures.

CONCLUSION: These data suggest that subsequent fractures among patients on treatment prescribed in an FLS setting are common, and that an incident fall is a strong predictor of subsequent fracture risk. Immediate attention for fall risk could be beneficial in an FLS model of care. TRIAL REGISTRATION NUMBER: NL45707.072.13.

Language: en

Can an eight-session multicomponent physical exercise program reduce fall risk and fear of falling among the elderly?

Philippe AG, Goncalves A, Martinez C, Deshayes M, Charbonnier E. Int. J. Environ. Res. Public Health 2022; 19(14): e8262.

Abstract

In older populations, falls are responsible for decrease autonomy and increased pain and injuries. With aging, fall risk is multifactorial and associated with sarcopenia, impaired balance, falls themselves and psychological factors such as fear of falling. The objectives of the present study were: (a) to test the effects of a short multicomponent physical exercise program on fall risk and fear of falling; and (b) to analyze the relationship between fall risk and fear of falling. The participants were thirty-five older persons who were engaged in an eight-session physical exercise program. Balance (i.e., One-leg Balance Test, and Functional Reach Test), lower-limb endurance (i.e., Wall-sit Test) and fear of falling were measured before and after the multicomponent physical exercise program.

RESULTS indicated an increase in balance and a diminution of fear of falling after the end of the physical exercise program ($p < 0.05$). The program has an effect on lower limb endurance ($p > 0.05$). Gains in balance were correlated to the diminution of fear of falling ($p < 0.05$). An 8-week multicomponent physical exercise program based on balance is efficient to reduce fall risk and fear of falling among the elderly.

Language: en

Keywords

Correlation among pain intensity, catastrophizing, and falls in older individuals with unilateral knee osteoarthritis: a cross-sectional study

Fidelis-de-Paula-Gomes CA, Dibai-Filho AV, Ferreira CSB, da Silva ACB, de Oliveira AR, Politti F, Biasotto-Gonzalez DA. J. Manipulative Physiol. Ther. 2022; ePub(ePub): ePub.

Abstract

OBJECTIVE: The purpose of this study was to investigate whether pain intensity and catastrophizing are associated with fear of falls and the number of falls in older persons with knee osteoarthritis (OA).

METHODS: A cross-sectional study was conducted involving 100 volunteers (male and female participants), 60 to 80 years old, with a diagnosis of knee OA. Patients were recruited from a physical therapy clinic in the city of São Paulo, Brazil, from March 2019 to November 2019. The following measures were used for the evaluations: Numerical Rating Pain Scale (NRPS), Pain-Related Self-Statement Scale (PRSS), and Falls Efficacy Scale. In statistical analysis, histograms were created to determine the distribution of data. Spearman's correlation coefficients (r(s)) were then calculated to determine the strength of the associations among the variables. The receiver operating characteristic curve was used to identify the accuracy of PRSS and NRPS in differentiating participants with a history of falls from those without.

RESULTS: No significant correlation was found among the pain intensity, pain catastrophizing, fear of falling, and number of falls (r(s) value ranging from -0.033 to -0.167; P value ranging from.096-.743). The accuracy of PRSS and NRPS in differentiating participants with falls from those without was insufficient, with area under the curve values of 0.46 and 0.42, respectively.

CONCLUSION: Pain catastrophizing and intensity were not significantly associated with fear of falling and numbers of falls in older individuals with unilateral knee OA.

Language: en

Keywords

Effect of a multicomponent exercise program and cognitive stimulation (VIVIFRAIL-COGN) on falls in frail community older persons with high risk of falls: study protocol for a randomized multicenter control trial

Sánchez-Sánchez JL, Udina C, Medina-Rincón A, Esbrí-Victor M, Bartolomé-Martín I, Moral-Cuesta D, Marín-Epelde I, Ramon-Espinoza F, Latorre MS, Idoate F, Goñi-Sarriés A, Martínez-Martínez B, Bonet RE, Librero J, Casas-Herrero. BMC Geriatr. 2022; 22(1): 612.

Abstract

BACKGROUND: Falls represent important drivers of intrinsic capacity losses, functional limitations and reduced quality of life in the growing older adult's population, especially among those presenting with frailty. Despite exercise- and cognitive training-based interventions have shown effectiveness for reducing fall rates, evidence around their putative cumulative effects on falls and fall-related complications (such as fractures, reduced quality of life and functional limitations) in frail individuals remains scarce. The main aim of this study is to explore the effectiveness program combining an individualized exercise program and an executive function-based cognitive training (VIVIFRAIL-COGN) compared to usual care in the prevention of falls and fall-related outcomes over a 1-year follow-up.

METHODS: This study is designed as a four-center randomized clinical trial with a 12-week intervention period and an additional 1-year follow-up. Three hundred twenty frail or pre-frail (≥ 1 criteria of the Frailty Phenotype) older adults (≥ 75 years) with high risk of falling (defined by fall history and gait performance) will be recruited in the Falls Units of the participating centers. They will be randomized in a 1:1 ratio to the intervention group (IG) or the control group (CG). The IG will participate in a home-based intervention combining the individualized Vivifrail multicomponent (aerobic, resistance, gait and balance and flexibility) exercise program and a personalized executive function-based cognitive training (VIVIFRAIL-COGN). The CG group will receive usual care delivered in the Falls Units, including the Otago Exercise Program. Primary outcome will be the incidence of falls (event rate/year) and will be ascertained by self-report during three visits (at baseline, and 6 and 12 weeks) and telephone-based contacts at 6, 9 and 12 months after randomization. Secondarily, effects on measures of physical and cognitive function, quality of life, nutritional, muscle quality and psychological status will be evaluated.

DISCUSSION: This trial will provide new evidence about the effectiveness of an individualized multidomain intervention by studying the effect of additive effects of cognitive training and physical exercise to prevent falls in older frail persons with high risk of falling. Compared to usual care, the combined intervention is expected to show additive effects in the reduction of the incidence of falls and associated adverse outcomes. TRIAL REGISTRATION: NCT04911179 02/06/2021.

Language: en

Effects of dance in older adults at risk of falls. exploratory review

Abstract

INTRODUCTION: Falls are considered a public health problem in older adults, and their approach should be multidimensional. Dance emerges as an intervention option that allows different schemes to be integrated in movement enhancement.

OBJECTIVE: To determine the effects of dance on balance, motor function and activities of daily living in older adults at risk of falling.

METHODS: Exploratory review of the effects of dance in older adults at risk of falling in terms of balance, gait, motor function and activities of daily living. Searches were carried out in PubMed, LILACS, Cochrane Central Register of Controlled Trials, PEDro, OTSeeker, full text articles were searched in different virtual libraries (ProQuest, Ovid, Ebsco, Science Direct) and manual search was also carried out.

RESULTS: Nineteen studies were found, which report sessions of 45 to 60 minutes for 12 weeks. Dance can be considered a safe intervention that significantly decreases control intervention for balance and gait in older adults.

CONCLUSIONS: The results of this work support that dance can be used as an interventional option in older adults at risk of falling.

Language: en

Keywords

Effects of teach-back health education (TBHE) based on WeChat mini-programs in preventing falls at home for urban older adults in China: a randomized controlled trial

Abstract

BACKGROUND: Falls are common among adults aged 60 years and older because of physiological changes. Most falls in older adults occur most often at home. Coupled with the lack of awareness and knowledge of preventing falls, the proportion of injuries and deaths among older adults due to falls is increasing yearly. Our study developed a WeChat mini-program for urban elderly to implement teach-back health education (TBHE) that a repeated cycle process of health education, assessment, and re-education in preventing falls at home.
OBJECTIVES: This study aimed to evaluate the application effect of the TBHE-based WeChat mini-program on health education knowledge for fall prevention at home for urban older adults.
DESIGN: A single-blinded, two-arm parallel-group, randomized controlled trial was conducted. SETTING: Three residential communities, named Hot Spring Apartment, Hualinyuan, and Dongtang Community in Gulou District, Fuzhou, China. PARTICIPANTS: Participants were older adults recruited from communities in Fuzhou from January to March 2021.
METHODS: Fifty-nine participants agreed to participate and were assigned randomly to the intervention group (n = 29) or the control group receiving traditional health education (n = 30). Each participant in the intervention group received twice a week for a total of 8 weeks of health education interventions performed by the first author that she is intervenor according to specific themes. The trial statistician, recruiters, and participants were blinded to group allocation. The intervenor (first author) was blinded to the study hypotheses. To evaluate the effects of the intervention, we assessed participants' knowledge total score and scores of physiology and disease; drug application; mental, cognitive, and spiritual well-being; lifestyle; and house environment at baseline and 1-week post-intervention and compared scores between two groups. A two-way repeated-measures analysis of variance was conducted to examine the effects of time, group, and their interaction.
RESULTS: There was a significant difference in knowledge of house environment (p = 0.003) between the two groups. Within groups, total and five dimensions knowledge scores had a significant difference (p < 0.001). Moreover, interaction effects were significant on drug application (p = 0.012) and mental, cognitive, and spiritual well-being (p = 0.015).
CONCLUSIONS: The TBHE can improve knowledge on fall prevention at home among urban older adults. The TBHE based on the WeChat mini-program could enhance the efficiency and effectiveness of being educated among urban older adults. TRIAL REGISTRATION: Chinese Clinical Trial Register: ChiCTR2100052946 ; reg date: 06/11/2021.
Language: en

Keywords

Emerging trends and hotspots in tai chi fall prevention: analysis and visualization

Abstract

Recently, substantial studies have increased around the topic of the tai chi fall-prevention field. Few studies, however, have revealed the current progress and hotspots under a bibliometric analysis. Therefore, the present study aimed to conduct Citespace, a significant application for bibliometric analysis, to carry out the situation and trend in this field. This study has identified the core countries are the United States, China, Australia, and England, which are also the origins of the core institutions. Besides this, we also have found two large research groups led by Li and Sherrington. Moreover, the result has revealed that J Aging Phys Act and J Am Geriatr Soc are the primary journals. Geriatrics and gerontology, sport sciences, rehabilitation, and gerontology are the leading categories. Furthermore, one of the more important findings to come out in this study are that "elderly", "Parkinson's disease", "vestibular rehabilitation", "frail patient", and "community fall prevention" are the research hotspots. "Women", "proprioception", "cognitive impairment", "dementia", "osteoarthritis", and "stroke" are the potential research trend in the future. These findings suggest that the tai chi fall-prevention field has a broad research prospect. Although several questions remain uncertain currently, it is worthy for scholars to do further study.

Language: en

Keywords

Falls prevention: adherence, fear of falling, assessment, and intervention

Abstract

Due to the demographic aging, new events are coming more into the medical focus. The change from disease-oriented to function-related geriatric medicines under the umbrella of healthy aging (World Health Organization, 2015) puts sudden events as "falls or even injurious falls" right into the middle of geriatric prevention and rehabilitation activities (World Health Organization, 2008). Due to several global initiatives (American Geriatrics Society, British Geriatrics Society, and American Academy of Orthopaedic Surgeons Panel on Falls Prevention, 2001; Clemson et al., 2010; Guirguis-Blake et al., 2018; Medical Advisory Secretariat, 2008), it is now widely accepted that 28%-38% of the population over 65 years fall at least once annually, with a high percentage falling several times. As age increases, the rates of falls tend to increase as well, suggesting an age-related increase in fall risk rising up to nearly 50% in the age group 80 years and above. Falls are posing a burden to the public health care system and to older persons themselves as in up to 30% of falls cause mild-to-severe injuries, and in some cases even cause death. Injuries after a fall event can lead to prolonged use of health care service including high health care costs (Montero-Odasso et al., 2021). The estimated annual costs for fall-related medical services range from $31.3 billion dollars to $49.5 billion dollars in the United States (Haddad et al., 2019; Houry et al., 2016).

Therefore, falls are a serious threat to older persons for healthy aging, as falls and especially fall-related injuries are associated with a higher risk of onset of disability, reduced mobility, loss of independence, and even higher risk of mortality (Scuffham et al., 2003; Todd & Skelton, 2004). Falls prevention has become in many countries a mandatory goal by implementing national strategies to reduce falls in the older population (Campbell & Robertson, 2010; Hill et al., 2018; Rose et al., 2007).

Many risk factors for falls have been identified and can be categorized into intrinsic, behavioral, and extrinsic factors (Rubenstein, 2006; Todd & Skelton, 2004). The most important intrinsic risk factors are for example, a fall in the last 12 months, gait and balance disorder, and low strength (all with an odds ratio between 2 and 3; Deandrea et al., 2010; Todd & Skelton, 2004). Behavioral risk factors are fall-related psychological concerns (FrPC) including fear of falling, as well as the other side of the coin, self-efficacy. Environmental risk factors are, for example, loose carpets, low lightening, or missing handrails (Todd & Skelton, 2004).

Preventive interventions with the most positive reduction in fall rate have been identified and include multicomponent exercise programs (Hopewell et al., 2018; Sherrington et al., 2019). Exercise programs including challenging balance exercise and progressive strength training have shown very effective results as well as Tai Chi exercise interventions (Nyman, 2020; Sherrington et al., 2019).

Despite the evidence of effective intervention, major challenges and barriers exist to a worldwide reduction in fall rates on national and international levels...

Language: en

Falls risk screening tools intended to reduce fall risk among independent community-dwelling older adults: a systematic review

Abstract

AIMS: The aim of this study is to evaluate an evidence-based fall risk screening tool to predict the risk of falls suitable for independent community-dwelling older adults guided by the World Health Organization's International Classification of Functioning, Disability and Health (WHO-ICF) components, and to examine the reliability and validity of the fall risk screening tool to predict fall risks, and to examine the feasibility of tools among independent community-dwelling older adults.

METHODS: A systematic literature search guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement was performed using the EBSCOHost® platform, ScienceDirect, Scopus and Google Scholar between July and August 2021. Studies from January 2010 to January 2021 were eligible for review. Nine articles were eligible and included in this systematic review. The risk of bias assessment used the National Institutes of Health quality assessment tool for observational cohort and cross-sectional studies. The WHO-ICF helped to guide the categorization of fall risk factors.

RESULTS: Seven screening tools adequately predicted fall risk among community-dwelling older adults. Six screening tools covered most of the components of the WHO-ICF, and three screening tools omitted the environmental factors. The modified 18-item Stay Independent Brochure demonstrated most of the predictive values in predicting fall risk. All tools are brief and easy to use in community or outpatient settings.

CONCLUSION: The review explores the literature evaluating fall risk screening tools for nurses and other healthcare providers to assess fall risk among independent community-dwelling older adults. A fall risk screening tool consisting of risk factors alone might be able to predict fall risk. However, further refinements and validations of the tools before use are recommended.

Language: en

Keywords

Health-economic evaluation of the German Osteoporotic Fracture Prevention Program in Rural Areas (OFRA): mobility and falls prevention classes, examination of bone health, and consultation on safety in the living environment

Abstract

BACKGROUND: Fragility fractures are one of the leading causes of disability in older adults. Yet, evidence for effectiveness and cost-effectiveness of preventive approaches combining bone health and fall prevention is rare.

OBJECTIVE: To conduct a health-economic evaluation of the German osteoporotic fracture prevention program in rural areas (OFRA).

DESIGN: Secondary cluster-randomized intervention study based on routine data. PARTICIPANTS: All districts in five federal states in Germany were cluster-randomized as intervention or control districts. OFRA was offered to community-living (a) women aged 75-79 years or (b) women and men aged 70-84 years with a prior fragility fracture in the intervention districts. Individuals who meet these criteria in the control districts were assigned to the control group. INTERVENTION: OFRA comprised mobility and falls prevention classes, examination of bone health by bone density measurement, and consultation on safety in the home living environment. MAIN MEASURES: We measured health-care costs and effectiveness in terms of time to fragility fracture or death within 1 year after initial contact, based on health insurance claims data. Implementation costs were recorded by the intervention performers. We calculated an incremental cost-effectiveness ratio (ICER) and employed the net-benefit approach to construct a cost-effectiveness acceptability curve (CEAC). KEY RESULTS: There were 9408 individuals in the intervention group and 27,318 in the control group. Mean time to fragility fracture or death (difference: 0.82 days) and health-care costs (difference: 111.73€, p <.01) were reduced, but mean intervention costs (difference: 260.10€) increased total costs (difference: 148.37€, p <.001) in the intervention group. The ICER per fracture-free year of survival was 66,094.63€. The CEAC showed no acceptable probability of cost-effectiveness at a reasonable willingness to pay.

CONCLUSION: OFRA showed reduced rates of fragility fractures, but had high implementation costs, resulting in an unfavorable ICER. The cost-effectiveness of OFRA may improve with a longer follow-up.
Language: en

Keywords

Predicting falls in older adults: an umbrella review of instruments assessing gait, balance, and functional mobility

Beck Jepsen D, Robinson K, Ogliari G, Montero-Odasso M, Kamkar N, Ryg J, Freiberger E, Tahir M. BMC Geriatr. 2022; 22(1): e615.

Abstract

BACKGROUND: To review the validated instruments that assess gait, balance, and functional mobility to predict falls in older adults across different settings.

METHODS: Umbrella review of narrative- and systematic reviews with or without meta-analyses of all study types. Reviews that focused on older adults in any settings and included validated instruments assessing gait, balance, and functional mobility were included. Medical and allied health professional databases (MEDLINE, PsychINFO, Embase, and Cochrane) were searched from inception to April 2022. Two reviewers undertook title, abstract, and full text screening independently. Review quality was assessed through the Risk of Bias Assessment Tool for Systematic Reviews (ROBIS). Data extraction was completed in duplicate using a standardised spreadsheet and a narrative synthesis presented for each assessment tool.

RESULTS: Among 2736 articles initially identified, 31 reviews were included; 11 were meta-analyses. Reviews were primarily of low quality, thus at high risk of potential bias. The most frequently reported assessments were: Timed Up and Go, Berg Balance Scale, gait speed, dual task assessments, single leg stance, functional Reach Test, tandem gait and stance and the chair stand test.

FINDINGS on the predictive ability of these tests were inconsistent across the reviews.

CONCLUSIONS: In conclusion, we found that no single gait, balance or functional mobility assessment in isolation can be used to predict fall risk in older adults with high certainty. Moderate evidence suggests gait speed can be useful in predicting falls and might be included as part of a comprehensive evaluation for older adults.

Language: en

Keywords

Accidental Falls; Fall Prediction; Function; Gait; Balance; Older Adults; Umbrella review

Risk of falls associated with long-acting benzodiazepines or tricyclic antidepressants use in community-dwelling older adults: a nationwide population-based case-crossover study

Abstract

BACKGROUND: Falls are common in older adults and increase in recent years. This study aimed to examine the risk of falls associated with long-acting benzodiazepines (BZDs) or tricyclic antidepressants (TCAs) use in community-dwelling older adults.

METHODS: A nationwide population-based case-crossover design was used. We screened information on 6,370,275 fall or fall fracture cases among community-dwelling elderly patients from the database of the national health insurance data warehouse in South Korea. We extracted the data of elderly patients who visited the hospital for a fall and were diagnosed with the first fall or fall fracture after prescription of long-acting BZDs (n = 1805) or TCAs (n = 554). The study used conditional logistic regression analysis to analyze the associations and stratified analysis by gender and age group to control for their confounding effects.

RESULTS: Risk of falls or fall fractures increased by more than two times after taking long-acting BZDs (odds ratio [OR] = 2.16; 95% confidence interval [CI] = 1.85-2.52) or TCAs (OR = 2.13; 95% CI = 1.62-2.83). The longer the prescription period of both, the higher the risk of falls or fall fractures was (≥49 days for long-acting BZDs vs. ≥ 56 days for TCAs).

CONCLUSIONS: Long-acting BZDs or TCAs should be avoided or prescribed for a shorter duration based on these adverse effects. Health care providers should focus on fall prevention practices in older adults who take such drugs.

Language: en

Risk of falls in adults 45-64 years old in the United States

Abstract

Falls among the older adults (64+ years old [YO]) are considered public health issues. However, fall prevention in middle adulthood (age 45-64) has received less attention. We studied the associations between the number of falls and fall-related injuries and indicators for socio-demographics, chronic diseases, and difficulties in conducting activities in two age groups, 45-64 YO and 64+. In this secondary data analysis, we used the Behavioral Risk Factor Surveillance System (BRFSS) 2018 data. The study showed respondents in the 45-64 YO have higher average falls and fall-related injuries than those 64+ (P <.001). Variables that link to more falls and fall-related injuries in 64+ correspond to more falls and fall-related injuries in 45-64 YO. The finding indicates that the odds of falls and fall-related injuries are comparable across age groups when considering demographic characteristics. However, odds of falling in the presence of arthritis and asthma are higher for respondents in 45-64 YO than the 64+ YO. The risk of falls and fall-related injuries are not specific to older adults. Factors that matter to the number of falls and fall-related injuries in the older adults also count in the younger age group. Nurses are asked to validate available fall assessment tools for adults 45-64 years old and evaluate all clients over 45 for fall risk.

Language: en

Keywords

older adults; falls; nursing; falls risk factors; middle-age adults; public health nurse

Self-perceived balance confidence is independently associated with any subsequent falls and injurious falls among community-dwelling older fallers: a prospective cohort study

Tsang C, Leung J, Kwok T. Arch. Gerontol. Geriatr. 2022; 103: e104776.

Abstract

INTRODUCTION: Balance confidence contributes to activity restriction, decline in physical function, and falls, potentially. This study aimed at examining whether balance confidence is a significant fall predictor independent of physical function measures in community-dwelling older adults.

METHODS: This was an observational cohort study. Self-perceived balance confidence was measured by the Activities-specific Balance Confidence scale (ABC) and the short form of it, ABC-6. Other potential predictors included gait speed, Five Times Sit-to-Stand Test, Physiological Profile Assessment (PPA), age, sex, cognition, depression, arthritis, body mass index, recurrent fall history, number of comorbidities, number of prescribed medications, and the use of walking aids. Fall occurrence and subsequent injuries were followed up trimonthly for 12 months. The association of the potential predictors with falls was examined with multivariable logistic regression analyses. Sensitivity analysis for their association with injurious falls in a year was performed.

RESULTS: 461 community-dwelling older adults with a fall history in the past year completed the 12-month follow-up (mean age 70.6±7.1 years, range 60-92 years; 81% females). Participants with high balance confidence (ABC score ≥76 and ABC-6 score ≥64) were less likely to fall in the subsequent year, independently of the physical function measures and other covariates (adjusted OR 0.51-0.57, 95%CI 0.30-0.97, $p<0.05$).

CONCLUSION: Balance confidence is a significant fall predictor independent of physical function measures and other covariates in community-dwelling older adults with a history of falls. Future studies might investigate the causal effects of balance confidence on the risk of falling with randomized controlled trials.

Language: en

Keywords

Severe low back or lower limb pain is associated with recurrent falls amongst older Australians

Tse A, Ward S, McNeil J, Barker A, Cicuttini F, Fitzgibbon B, Hussain SM, Owen A, Wang YY, Wolfe R, Gilmartin-Thomas JFM. Eur. J. Pain 2022; ePub(ePub): ePub.

Abstract

BACKGROUND: Few studies have explored the impact of low back or lower limb pain severity on recurrent (≥2) falls in older adults.

OBJECTIVES: Investigate the association between the severity of low back or lower limb pain, and ≥2 falls or falls-related injuries.

METHODS: Community-dwelling Australian males and females in the ASPREE Longitudinal Study of Older Persons (ALSOP), aged ≥70 years. Self-reported, cross-sectional questionnaire data regarding number of falls and falls-related injuries in the last 12 months; and sites and severity of pain experienced on most days. Adjusted relative risks (RR) were estimated from multivariable Poisson regression models, for males and females separately.

RESULTS: Of 14,892 ALSOP participants, 13% (n=1,983) reported ≥2 falls ('recurrent fallers') in the last 12 months. Males and females who reported severe low back, or severe lower limb pain on most days were more likely to report ≥2 falls in the last 12 months compared to those with mild pain (lower back: males RR=1.70 and females RR=1.5, p=0.001; lower limb: males RR=2.0, p<0.001 and females RR=1.4, p=0.003). Female recurrent fallers who reported severe low back (RR=1.3, p=0.029) or lower limb (RR=1.24, p=0.024) pain on most days were more likely to report a falls-related injury in the last 12 months compared to females with mild pain.

CONCLUSION: Severe low back or lower limb pain was associated with an increased likelihood of recurrent falls (males/females) or falls-related injuries (females only). Assessment of severe low back and lower limb pain should be considered as a priority when undertaking falls-risk evaluation.

Language: en

Subjective age and falls in older age: evidence from two longitudinal cohorts

Fundenberger H, Stephan Y, Terracciano A, Dupré C, Bongue B, Hupin D, Barth N, Canada B. J. Gerontol. B Psychol. Sci. Soc. Sci. 2022; ePub(ePub): ePub.

Abstract

OBJECTIVES: Falls are a common and serious health problem. The present study examined the association between subjective age (i.e., feeling younger or older than one's chronological age) and falls in two large national samples.

METHOD: Participants, aged 65 to 105 years old, were drawn from the National Health and Aging Trends Study (NHATS) and the Health and Retirement Study (HRS). Data on falls, subjective age, demographic factors, was available from 2,382 participants in HRS and 3,449 in NHATS. Falls were tracked for up to 8 (HRS) and 7 (NHATS) years.

RESULTS: Cox regression analyses that included demographic covariates indicated that older subjective age increased the risk of falling in HRS (hazard ratio [HR]=1.17, 95% confidence interval [CI]=1.08-1.27), and in NHATS (HR=1.06, 95%CI=1.00-1.13). When compared to people who felt younger, people who reported an older subjective age had a higher risk of fall (HRS: HR=1.65, 95% CI=1.33-2.04; NHATS: HR=1.44, 95% CI=1.15-1.79). The associations remained significant after accounting for depressive symptoms, handgrip strength, chronic diseases, and cognitive impairment in HRS only.

DISCUSSION: These results confirm the role of subjective age as an important health marker in the aging population. Subjective age assessment can help identify individuals at greater risk of falls.

Language: en

Keywords

falling; Felt age; survival analysis

The mediating effect of frailty in the relationship between depression and falls among older people living alone in Korea

Abstract

BACKGROUND: We explored the potential mediating role of frailty in the relationship between depression and falls.

METHODS: The participants were 1,408 community-dwelling older people living alone in South Korea. The potential mediating role of frailty in the relationship between depression and falls was evaluated through univariate and multivariate logistic regression. Baron and Kenny's three-step criteria for mediation were used to examine the mediating effect.

RESULTS: Frailty fully mediated the association between severe depression and falls in univariate (t=11.58, P<.05) and multivariate (t=10.42, P<.05) analyses.

CONCLUSION: Frailty is a valuable target for fall interventions in severely depressed older people living alone.

Language: en

The value of cognitive and physical function tests in predicting falls in older adults: a prospective study

Abstract

INTRODUCTION: Previous studies suggested that physical and cognitive function can be indicators to assess the risk of falls in the elderly. Various tests are widely used in geriatric clinical studies as assessment tools of physical and cognitive function. However, large sample studies comparing the fall predictive value of these tests are still sparse. This study was conducted to investigate the value of cognitive and physical function tests in predicting the risk of subsequent falls in the elderly, with the overarching goal of providing more evidence on fall-risk assessment.

METHODS: The current study was based on the data of respondents aged 60 and above from the China Health and Retirement Longitudinal Study (CHARLS). Data from the 2015 CHARLS national survey were used as the baseline data, and the fall data in 2018 were used as the follow-up data. Physical function tests included balance, walking speed, the five times sit-to-stand test (FTSST), and grip strength. The value of cognitive and physical function tests in predicting falls was evaluated by logistic regression analysis and receiver operating characteristic (ROC) curves.

RESULTS: The incidence of falls among the 4,857 subjects included in this study was 20.86%.

RESULTS showed that cognition (OR = 0.83, 95% CI: 0.70-0.98), the FTSST (OR = 3.51, 95% CI: 1.66-7.46), and grip strength (OR = 1.02, 95% CI: 1.01-1.03) were independent predictors of falls in the full sample after adjusting for various confounders. Notably, the above tests showed better predictive value for falls for the oldest-old ($\geq$ 80 years) subjects.

CONCLUSION: Overall, results showed that grip strength, the FTSST, and cognition tests are simple and practicable tools for identifying individuals at higher risk of falls in the community. Moreover, the fall predictive performance of physical and cognitive function tests was age-dependent, with a higher predictive value in older adults aged 80 and above.

Language: en

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Fall risk and functional stability before vs after computerized vestibular retraining among adults with unilateral vestibular deficits

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Abstract

Computerized vestibular retraining is associated with changes in qualitative measures of vestibular disability in patients with stable unilateral vestibular deficits.[1] Patients reported increased confidence, decreased disability, and reduced perceived fall risk after 12 sessions of retraining.[1] We assessed posturographic measures in that cohort.[1] The limits of stability (LOS) test is an objective measure of dynamic postural stability. Lower LOS scores are associated with an elevated risk of falling.[2,3] We evaluated changes in the LOS and functional stability region (FSR; area described by controlled anteroposterior and lateral lean distance) after computerized vestibular retraining.

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