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**'Managing pieces of a personal puzzle' - Older people's experiences of self-management falls prevention exercise guided by a digital program or a booklet**

Pettersson B, Wiklund M, Janols R, Lindgren H, Lundin-Olsson L, Skelton DA, Sandlund M. BMC Geriatr. 2019; 19(1): e43.

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30777026

**Abstract**

BACKGROUND: Exercise is effective in order to prevent falls in community-dwelling older people. Self-management programs have the potential to increase access and reduce costs related to exercise-based fall prevention. However, information regarding older people's views of participating in such programs is needed to support implementation. The aim of this study was to explore older people's experiences of a self-management fall prevention exercise routine guided either by a digital program (web-based or mobile) or a paper booklet.

METHODS: This qualitative study was part of a feasibility study exploring two completely self-managed exercise interventions in which the participants tailored their own program, guided either by a digital program or a paper booklet. Individual face-to-face semi-structured interviews were conducted with a purposeful sample of 28 participants (18 women), mean age 76 yrs. Qualitative content analysis was used to analyse the data.

RESULTS: Self-managing and self-tailoring these exercise programs was experienced as 'Managing pieces of a personal puzzle'. To independently being able to create a program and manage exercise was described in the categories 'Finding my own level' and 'Programming it into my life'. The participants experienced the flexibility and independence provided by completely self-managed exercise as positive and constructive although it required discipline. Furthermore, different needs and preferences when managing their exercise were described, as well as varying sources of motivation for doing the exercise, as highlighted in the category 'Defining my source of motivation'. The category 'Evolving my acquired knowledge' captures the participants' views of building their competence and strategies for maintenance of the exercise. It describes a combined process of learning the program and developing reflection, which was more clearly articulated by participants using the digital program.

CONCLUSIONS: This study provides new knowledge regarding experiences, preferences and motivations of older people to engage in home-based self-managed fall prevention exercise. They expressed both a capability and willingness to independently manage their exercise. A digital program seems to have strengthened the feeling of support while creating their own exercise program and

tailoring it to their preferences and circumstances, which might therefore create better opportunities for adoption and adherence in the long term.

**Keywords**

Accidental falls; Aged; Behaviour change; Digital health; Exercise; Falls prevention; Intervention; Qualitative research; Self-management; eHealth

Endnote Y, PDF Y

**A walk on water: comparing the influence of Ai Chi and Tai Chi on fall risk and verbal working memory in ageing people with intellectual disabilities - a randomised controlled trial**

Nissim M, Hutzler Y, Goldstein A. J. Intellect. Disabil. Res. 2019; ePub(ePub): ePub.

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**PMID**

30775818

**Abstract**

BACKGROUND: Aquatic motor intervention has been found to be effective in reducing falls and improving verbal working memory among the general population. However, effects among older adults with intellectual disabilities (ID) have never been explored. The aim of this study was to examine the effects of aquatic motor intervention on fall risk and verbal working memory among older adults with ID.
METHODS: Forty-one older adults with mild to moderate ID (age: 50-66 years) were randomly assigned to 14 weeks of aquatic motor intervention (Ai Chi: N = 19) or identical on-land motor intervention (Tai Chi: N = 22). Fall risk, measured with the Tinetti balance assessment tool (TBAT), and verbal working memory, measured with the digit span forward test, were assessed pre-intervention, after 7 weeks of intervention and post-intervention.
RESULTS: Study results indicate positive effects of both aquatic and on-land motor intervention on TBAT fall risk score, while the aquatic motor intervention group improved TBAT fall risk score quicker as compared with the on-land motor intervention group. Moreover, the lower the pre-intervention TBAT score was, the higher the improvement. In addition, study findings support the positive effects of aquatic motor intervention on verbal working memory ability as measured with the digit span forward test.
CONCLUSIONS: Motor intervention, and particularly in an aquatic environment, can potentially reduce fall risk. Aquatic motor intervention may help to improve verbal working memory among older adults with ID.

**Keywords**

aquatic motor intervention; cognitive abilities; falling; older adults with ID

Endnote Y, PDF Y

**Bushen yijing fang reduces fall risk in late postmenopausal women with osteopenia: a randomized double-blind and placebo-controlled trial**

Zheng Y, Wang X, Zhang ZK, Guo B, Dang L, He B, Zhang C, Zhou J, Shi W, Zhao Y, Zhan H, Xu Y, Liang C, Liu J, Guan D, Wang L, Wu X, Li J, Zhuo Z, Lin Z, Qiu H, Zhong L, Bian Z, Shi Y, Zhang BT, Zhang G, Lu A. Sci. Rep. 2019; 9(1): 2089.

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30765762

**Abstract**

Falls in late postmenopausal women with osteopenia usually cause fractures with severe consequences. This 36-month randomized, double-blind and placebo-controlled trial with a 10-year observational follow-up study aimed to investigate the long-term effect of herbal formula Bushen Yijing Fang (BSYJF) on fall risk in the late postmenopausal women with osteopenia. 140 late postmenopausal women (Femoral neck T-score, -2.5~-2 SD) were recruited and randomized to orally receive calcium carbonate 300 mg daily with either BSYJF or placebo for 36 months. The effect was further investigated for another 10-year follow-up. During the 36-month administration, there were 12 falls in BSYJF group and 28 falls in placebo group, respectively, indicating 64% lower risk of falls (RR 0.36 [95% CI, 0.18 to 0.71]; P = 0.004) in BSYJF group. During the 10-year follow-up, 36% lower fall risk (RR 0.64 [95% CI, 0.46 to 0.89]; P = 0.009) was observed in BSYJF group. No significant difference was found in safety profile between two groups. Thirty-six-month administration of BSYJF reduced fall risk with an increase in bone mass, and its latent effect on fall risk was continually observed in the 10-year follow-up in late postmenopausal women with osteopenia. This clinical trial was registered at Chinese clinical trial registry (ChiCTR-IOR-16008942).

Endnote Y, PDF Y

**Effectiveness of tai ji quan vs multimodal and stretching exercise interventions for reducing injurious falls in older adults at high risk of falling: follow-up analysis of a randomized clinical trial**

Li F, Harmer P, Eckstrom E, Fitzgerald K, Chou LS, Liu Y. JAMA Netw. Open 2019; 2(2): e188280.

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30768195

**Abstract**

IMPORTANCE: Exercise has been shown to reduce injurious falls in older adults. Evidence, however, is lacking regarding the types of intervention that are most effective in preventing injurious falls among older adults at high risk of falling.

OBJECTIVE: To determine the longer-term effectiveness of therapeutic tai ji quan intervention vs multimodal exercise and stretching exercise in decreasing injurious falls among older adults at high risk of falling.

DESIGN, SETTING, AND PARTICIPANTS: This trial involves a prespecified analysis with the data analyzed by intent-to-treat. Follow-up analysis of a single-blind randomized trial conducted in community settings of 7 urban and suburban cities in Oregon from February 20, 2015, to September 15, 2018, compared a therapeutic tai ji quan intervention with multimodal exercise and stretching exercise. Eligible participants were community-dwelling adults aged at least 70 years who were considered by a clinician to be at high risk of falling because they had fallen during the preceding year or who had impaired mobility with scores higher than 13.5 seconds on the Timed Up & Go test. Participants were randomized to 1 of the 3 interventions and were assessed monthly after randomization for 12 months, encompassing a 6-month active intervention phase and a 6-month after intervention follow-up phase. INTERVENTIONS: The 3 group-based interventions were therapeutic tai ji quan (Tai Ji Quan: Moving for Better Balance [TJQMBB]), multimodal exercise, and stretching exercise, each implemented twice weekly in 60-minute sessions for 24 weeks.

MAIN OUTCOMES AND MEASURES: Primary outcomes were the incidence of moderate and serious injurious falls at 12 months, measured as incidence rate ratios (IRRs).

RESULTS: Of the 1147 persons screened, 670 (mean [SD] age, 77.7 [5.6] years; 436 women [65.1%]) were randomly assigned to 1 of 3 intervention groups: 224 persons in TJQMBB, 223 in multimodal exercise, and 223 in stretching exercise. At 12 months, the unadjusted IRR for moderate injurious falls was lower in the TJQMBB (IRR, 0.51; 95% CI, 0.35-0.74; P < .001) and multimodal exercise (IRR, 0.62; 95% CI, 0.42-0.89; P = .01) groups compared with the stretching exercise group. There was no difference between TJQMBB and multimodal exercise groups (IRR, 0.85; 95% CI, 0.58-1.25; P = .42). Both TJQMBB and multimodal exercise significantly reduced serious injurious falls (TJQMBB: IRR, 0.25 [95% CI, 0.13-0.48; P < .001]; multimodal: IRR, 0.56 [95% CI, 0.33-0.94; P = .03]) compared with stretching exercise. Use of TJQMBB was more effective than multimodal exercise (IRR, 0.47; 95% CI, 0.24-0.92; P = .03) in reducing serious injurious falls.

CONCLUSIONS AND RELEVANCE: For preventing injurious falls, including those that resulted in medical treatment, TJQMBB intervention was found to be superior to multimodal and stretching exercises for older adults at high risk of falling. The findings appear to strengthen the clinical use of TJQMBB as a single exercise intervention to prevent injurious falls in this population. TRIAL REGISTRATION: ClinicalTrials.gov Identifier: NCT02287740.

Endnote Y, PDF Y

**Facilitators and barriers to enrolling in falls prevention programming among community dwelling older adults**

Kiami SR, Sky R, Goodgold S. Arch. Gerontol. Geriatr. 2019; 82: 106-113.

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30771600

**Abstract**

The purpose of this cross-sectional survey study was to identify factors that increase the likelihood of enrolling in falls prevention programming among community dwelling older adults. A convenience sample of 369 participants completed a written, selfadministered questionnaire on history and beliefs related to falls, and facilitators and barriers associated with enrollment. History of falling, fear of falling, self-efficacy, and recognition of program benefits were all associated with a greatly likelihood to enroll in falls prevention programming. Additionally, seven facilitators were associated with greater likelihood to enroll, including offered close to home (OR = 6.75(3.829-11.898); p = 0.000), free vision screen (OR = 4.816 (1.442-16.084); p = 0.005), friendly leader (OR = 3.930 (2.049-7.538); p = 0.000), coffee hour to socialize (OR = 3.789 (1.309-10.971); p = 0.009), no cost (OR = 3.653 (2.125-6.253); p = 0.000), group exercise (OR = 2.584 (1.341-4.980); p = 0.004), and safe place (OR = 2.378 (1.181-4.789); p = 0.013). Physician advice to attend a program, however, was not associated with likelihood to register (p = 0.99), supporting the need for a paradigm shift from physicians serving as the key change-agent in falls prevention to multiple partnerships. In addition, although 72% of participants were likely to register for a falls prevention program, only 28% knew if a program was being offered in their community. These findings highlight a critical need to disseminate information about falls prevention programming through social marketing in locations where older adults go in their everyday lives.

**Keywords**

Falls among older adults; Falls prevention programs; Health promotion

Endnote Y, PDF Y

**Fall-risk-increasing adverse reactions-is there value in easily accessible drug information? A case-control study**

Schiek S, Hildebrandt K, Zube O, Bertsche T. Eur. J. Clin. Pharmacol. 2019; ePub(ePub): ePub.

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30758518

**Abstract**

PURPOSE: The individual fall risk of a patient is often multifactorial. Polymedication contributes to an additional risk of fall-risk-increasing adverse reactions (FRIARs). Previous studies have not sufficiently investigated the complexity facing prescribers when balancing the therapeutic benefits of individual drugs against their potential fall risk.

METHODS: An expert panel identified drugs with FRIARs based on the Summary of Product Characteristics (SmPC). These FRIARs and other parameters (such as the total number of drugs, dosage, dose adjustments, and drug changes) were then analyzed for their impact on falls in a case-control study using logistic regression.

RESULTS: During a 1-year period, 112 (1%) of 11,481 hospital patients experienced at least one fall event. Complete data was available for evaluation from 87 of them (case group). We matched these patients to another 87 patients who had no fall events (control group). FRIAR drugs were more frequently prescribed in the case group (4.26 (Q25-Q75, 3.75-4.78) per patient; $p = 0.033$) than in the control group (3.48 (2.97-3.99)). Drugs with FRIARs ($\beta = 0.137$; $p = 0.035$) and the total number of FRIARs ($\beta = 0.033$; $p = 0.031$) increased the fall risk. The total number of drugs, dosage, dose adjustments, and drug changes showed no influence.

CONCLUSIONS: FRIARs were associated with a higher number of falls. To consider FRIARs offers a chance to address the complexity of the individual medication. This data can support future computerized physician order entries with clinical decision support.

**Keywords**

Adverse reactions; Drug label; Drug therapy; Fall-risk-increasing drugs; Inpatients; Patient safety

Endnote Y, PDF Y

**Frailty as a predictor of future falls in hospitalized patients: a systematic review and meta-analysis**

Lan X, Li H, Wang Z, Chen Y. Geriatr. Nurs. 2019; ePub(ePub): ePub.

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**DOI**

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30765177

**Abstract**

The aims of this review were to identify prospective studies examining associations between frailty and falls and to combine the risk measures to synthesize pooled evidence on frailty as a predictor of falls. A systematic literature search was conducted through Embase, Scopus, PubMed, CINAHL Plus, and the Cochrane Library for studies published from inception through May 2018. Odds ratios (OR) and hazard ratios (HR) extracted from the studies were combined to synthesize pooled effect measures using random-effects or fixed-effects models. Six studies involving 3881 hospitalized patients were included in this study. Frailty was found to be significantly associated with future falls among three studies with OR (pooled OR = 1.323, 95%confidence interval = 1.137-1.538, P < 0.000) and three studies with HR (pooled OR = 1.890, 95%confidence interval = 1.456-2.453, P < 0.000). Frailty was a significant predictor of future falls in hospitalized patients. Paying more attention to frailty may lead to lowering fall risks.

**Keywords**

Fall; Frailty; Meta-analysis; Patients; Systematic review

**Inflammatory biomarkers, depressive symptoms and falls among the elderly in Panama**

Britton GB, O'Bryant SE, Johnson LA, Hall JR, Villarreal AE, Oviedo DC, Lao ARP, Carreira MB, For The Panama Aging Research Initiative SG. Curr. Aging Sci. 2019; ePub(ePub): ePub.

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**DOI**

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**PMID**

30767759

**Abstract**

BACKGROUND: Falls are common among elderly adults, and are predictors of hospitalization, institutionalization and mortality.

OBJECTIVE: The objective of the present study was to examine the relationship between blood-based markers of inflammation and fall events in a sample of elderly Hispanic adults.

METHOD: Data were collected from 190 participants enrolled in the Panama Aging Research Initiative study who completed baseline clinical and cognitive assessments. A non-fasting blood sample was obtained. Self-reported falls were classified as no falls, single falls or recurrent (two or more) falls reported in the 12 months prior to baseline evaluations. Serum levels of C reactive protein (CRP), T-lymphocyte secreting protein (I-309), interleukin 10 (IL-10), interleukin 6 (IL-6) and interleukin 7 (IL-7) were measured. Global cognition was assessed with the Mini Mental State Examination and depressive symptoms were assessed with the Geriatric Depression Scale (GDS-30). Multinomial logistic regression was used to assess the link between inflammation and fall events.

RESULTS: Depressive symptoms, limitations in instrumental activities of daily living (IADL), IL-7 and I-309 were significantly related to fall events. Elevated levels of IL-7 increased the likelihood of single and recurrent falls, while increased levels of I-309 were associated only with recurrent falls. Greater IADL limitations and depressive symptoms were associated with an increased likelihood of recurrent falls.

CONCLUSION: There is a lack of research investigating the relationship between inflammatory biomarkers and fall events. These results provide evidence of risk factors for falls in Hispanic older adults, and could serve to guide public health professionals to establish clinical guidelines to reduce fall risks.



Language: en

**Keywords**

Aging; Hispanics; Latin America; depression; disability; inflammation

Endnote Y, PDF N

**Perspectives of healthcare professionals in England on falls interventions for people with dementia: a qualitative interview study**

Burgon C, Darby J, Pollock K, van der Wardt V, Peach T, Beck L, Logan P, Harwood RH. BMJ Open 2019; 9(2): e025702.

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**DOI**

10.1136/bmjopen-2018-025702

**PMID**

30755449

**Abstract**

OBJECTIVE: To explore the experiences of healthcare professionals working in falls prevention and memory assessment services in providing assessments and interventions for falls risk reduction in people with dementia.

DESIGN: This is a qualitative study using 19 semistructured interviews. Interviews were analysed through thematic analysis. SETTING: Community-based falls and memory assessment services in the East Midlands, UK. PARTICIPANTS: Nurses (n=10), physiotherapists (n=5), occupational therapists (n=3) and a psychiatrist (n=1).

RESULTS: Three substantive themes were identified: challenges posed by dementia, adaptations to make falls prevention appropriate for people with dementia and organisational barriers. Patients' poor recall, planning and increased behavioural risk associated with dementia were key problems. Healthcare professionals provided many suggestions on how to overcome these challenges, such as adapting exercise interventions by using more visual aids. Problems associated with cognitive impairment created a need for additional support, for instance longer interventions, and supervision by support workers, to enable effective intervention, yet limited resources meant this was not always achievable. Communication between mental and physical health teams could be ineffective, as services were organised as separate entities, creating a reliance on third parties to be intermediaries. Structural and organisational factors made it difficult to deliver optimal falls prevention for people living with dementia.

CONCLUSIONS: Healthcare professionals experience challenges in providing falls prevention to people with dementia at the individual and organisational levels. Interventions can be adapted for people with dementia, but this requires additional resources and improved integration of services. Future research is needed to develop and test the effectiveness and cost-effectiveness of such services.

Language: en

**Keywords**

dementia; qualitative research; rehabilitation medicine

Endnote Y, PDF Y

**The effect of cane height on walking and balance for stroke patients**

Seo TH, Doo YT, Jung DI. J. Agr. Med. Community Health 2018; 43(4): 250-257.



**DOI**

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**PMID**

unavailable

**Abstract**

OBJECTIVES: This study investigates the effects of using customized walking aids individualized for stroke patients by measuring the effects of different cane lengths to determine the ideal length of walking aids for stroke patients.

METHODS: Cane lengths were determined from the greater trochanter with walking aids measured 5cm below, at the greater trochanter and 5cm above. All patients walked for ten meters with each cane length to measure speed. Then, we measured the opto gait, timed up go test, and electromyography three times each. Statistical analysis was performed using a linear mixed model, and in the case of significance, the p-value was corrected using the Bonferroni method.

RESULTS: There was a statistically significant differences in time up and go test(TUGT), 10m walking, stride and speed between the groups.

CONCLUSIONS: Long cane length increases body symmetry, stride, increasing muscle activity, and short cane length increases balance and walking.

Language: en

Endnote Y, PDF N

**Prediction of risk of falls based on handgrip strength in chronic liver disease patients living independently**

Hiraoka A, Tamura R, Oka M, Izumoto H, Ueki H, Tsuruta M, Yoshino T, Ono A, Aibiki T, Okudaira T, Yamago H, Suga Y, Iwasaki R, Mori K, Miyata H, Tsubouchi E, Kishida M, Ninomiya T, Hirooka M, Abe M, Matsuura B, Hiasa Y, Kino T, Yamamoto K, Michitaka K. Hepatol. Res. 2019; ePub(ePub): ePub.

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30770617

**Abstract**

BACKGROUND/AIM: Falling is known to be associated with cognitive function. We evaluated the relationship between muscle function and falls in patients with chronic liver disease (CLD).
MATERIALS/METHODS: We enrolled 100 sequential CLD patients without dementia who were admitted to our institution for scheduled treatment from July 2017 to May 2018 [71.0±10.2 years and 76 males]. All subjects were self-reliant in regard to activities of daily living. Upon admission, handgrip strength was determined and falls within 1 month of admission were noted. For determining handgrip strength decline (HSD), previously reported values were used (males: <26 kg, females: <18 kg). The relationship between HSD and falls in CLD patients was evaluated in a retrospective manner.

RESULTS: Thirty-two had chronic hepatitis (CH), while 49 had liver cirrhosis (LC) Child-Pugh A, 17 had LC Child-Pugh B, and 2 had LC Child-Pugh C. Twelve (12.0%) had a history of falling, including 8 (26.7%) of 30 with and 4 (5.7%) of 70 without HSD (P=0.006). The cut-off value for age in relationship to falling was 69.0 years old (AUC 0.668, 95% CI: 0.514-0.821). A fall during hospitalization was noted more often in patients with a history of falling than in those without [16.7% (2/12) vs. 2.3% (2/88), P=0.018].

CONCLUSION: In CLD patients, the presence of HSD and older age may be independent risk factors for predicting a fall. Assessment of handgrip strength may be an effective clinical tool for easily assessing the risk of falling, especially in elderly CLD patients.

Endnote Y, PDF Y