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A simple algorithm to predict falls in primary care patients aged 65 to 74 years: the International Mobility in Aging Study

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Abstract

OBJECTIVE: Primary care practitioners need simple algorithms to identify older adults at higher risks of falling. Classification and regression tree (CaRT) analyses are useful tools for identification of clinical predictors of falls.

DESIGN: Prospective cohort.

SETTING: Community-dwelling older adults at 5 diverse sites: Tirana (Albania), Natal (Brazil), Manizales (Colombia), Kingston (Ontario, Canada), and Saint-Hyacinthe (Quebec, Canada).

PARTICIPANTS: In 2012, 2002 participants aged 65-74 years from 5 international sites were assessed in the International Mobility in Aging Study. In 2014 follow-up, 86% of the participants (n = 1718) were reassessed.

MEASUREMENTS: These risk factors for the occurrence of falls in 2014 were selected based on relevant literature and were entered into the CaRT as measured at baseline in 2012: age, sex, body mass index, multimorbidity, cognitive deficit, depression, number of falls in the past 12 months, fear of falling (FoF) categories, and timed chair-rises, balance, and gait.

RESULTS: The 1-year prevalence of falls in 2014 was 26.9%. CaRT procedure identified 3 subgroups based on reported number of falls in 2012 (none, 1, ≥2). The 2014 prevalence of falls in these 3 subgroups was 20%, 30%, and 50%, respectively. The "no fall" subgroup was split using FoF: 30% of the high FoF category (score >27) vs 20% of low and moderate FoF categories (scores: 16-27) experienced a fall in 2014. Those with multiple falls were split by their speed in the chair-rise test: 56% of the slow category (>16.7 seconds) and the fast category (<11.2 seconds) had falls vs 28% in the intermediate group (between 11.2 and 16.7 seconds). No additional variables entered into the decision tree.

CONCLUSIONS: Three simple indicators: FoF, number of previous falls, and time of chair rise could identify those with more than 50% probability of falling.

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PDF Y Endnote Y

Characterizing dynamic walking patterns and detecting falls with wearable sensors using Gaussian process methods

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Sensors (Basel) 2017; 17(5): s17051172.

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Abstract

By incorporating a growing number of sensors and adopting machine learning technologies, wearable devices have recently become a prominent health care application domain. Among the related research topics in this field, one of the most important issues is detecting falls while walking. Since such falls may lead to serious injuries, automatically and promptly detecting them during daily use of smartphones and/or smart watches is a particular need. In this paper, we investigate the use of Gaussian process (GP) methods for characterizing dynamic walking patterns and detecting falls while walking with built-in wearable sensors in smartphones and/or smartwatches. For the task of characterizing dynamic walking patterns in a low-dimensional latent feature space, we propose a novel approach called auto-encoded Gaussian process dynamical model, in which we combine a GP-based state space modeling method with a nonlinear dimensionality reduction method in a unique manner. The Gaussian process methods are fit for this task because one of the most important strengths of the Gaussian process methods is its capability of handling uncertainty in the model parameters. Also for detecting falls while walking, we propose to recycle the latent samples generated in training the auto-encoded Gaussian process dynamical model for GP-based novelty detection, which can lead to an efficient and seamless solution to the detection task. Experimental results show that the combined use of these GP-based methods can yield promising results for characterizing dynamic walking patterns and detecting falls while walking with the wearable sensors.

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Cost-effectiveness of a community exercise and nutrition program for older adults: Texercise Select

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Int. J. Environ. Res. Public Health 2017; 14(5): e14050545.

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Abstract

The wide-spread dissemination of evidence-based programs that can improve health outcomes among older populations often requires an understanding of factors influencing community adoption of such programs. One such program is Texercise Select, a community-based health promotion program previously shown to improve functional health, physical activity, nutritional habits and quality of the life among older adults. This paper assesses the cost-effectiveness of Texercise Select in the context of supportive environments to facilitate its delivery and statewide sustainability. Participants were surveyed using self-reported instruments distributed at program baseline and conclusion. Program costs were based on actual direct costs of program implementation and included costs of recruitment and outreach, personnel costs and participant incentives. Program effectiveness was measured using quality-adjusted life year (QALY) gained, as well as health outcomes, such as healthy days, weekly physical activity and Timed Up-and-Go (TUG) test scores. Preference-based EuroQoI (EQ-5D) scores were estimated from the number of healthy days reported by participants and converted into QALYs. There was a significant increase in the number of healthy days ($p < 0.05$) over the 12-week program. Cost-effectiveness ratios ranged from \$1374 to \$1452 per QALY gained. The reported cost-effective ratios are well within the common cost-effectiveness threshold of \$50,000 for a gained QALY. Some sociodemographic differences were

also observed in program impact and cost. Non-Hispanic whites experienced significant improvements in healthy days from baseline to the follow-up period and had higher cost-effectiveness ratios.

RESULTS indicate that the Texercise Select program is a cost-effective strategy for increasing physical activity and improving healthy dietary practices among older adults as compared to similar health promotion interventions. In line with the significant improvement in healthy days, physical activity and nutrition-related outcomes among participants, this study supports the use of Texercise Select as an intervention with substantial health and cost benefits.

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Effects of grab bar on utilized friction and dynamic stability when elderly people enter the bathtub

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Clin. Biomech. 2017; 47: 7-13.

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Abstract

BACKGROUND: The effect of the grab bar on dynamic stability when elderly people enter the bathtub remains unclear. The purpose of the present study is to examine the age-related effect of the grab bar on dynamic stability during lateral stepping over an obstacle when entering bathtub.

METHODS: Sixteen young, healthy adults and sixteen elderly adults participated. The subjects performed lateral stepping over an obstacle with and without vertical and horizontal bars.

Displacement and velocity of the center of mass and utilized friction, which is the required coefficient of friction to avoid slipping, were simultaneously measured by a three-dimensional motion analysis system and two force plates.

FINDINGS: A post hoc test for two-way ANOVA revealed that velocity of the center of mass in the vertical direction ($p < 0.05$) and peak-to-peak values of the center of mass in the lateral ($p < 0.05$) and vertical directions ($p < 0.05$) with each grab bar were significantly slower and smaller than those without the grab bar in young and elderly people. Moreover, the utilized friction at push off of the trailing leg with the vertical bar in elderly people was lower ($p < 0.05$) than that in participants without the grab bar.

INTERPRETATION: The use of each grab bar while performing a lateral step over an obstacle may help maintaining balance in lateral and vertical directions. However, use of the vertical bar while lateral stepping over an object in elderly people may need low utilized friction to prevent slipping.

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Impaired response selection during stepping predicts falls in older people-a cohort study

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J. Am. Med. Dir. Assoc. 2017; ePub(ePub): ePub.

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Abstract

BACKGROUND: Response inhibition, an important executive function, has been identified as a risk factor for falls in older people. This study investigated whether step tests that include different levels of response inhibition differ in their ability to predict falls and whether such associations are mediated by measures of attention, speed, and/or balance.

METHODS: A cohort study with a 12-month follow-up was conducted in community-dwelling older people without major cognitive and mobility impairments. Participants underwent 3 step tests: (1) choice stepping reaction time (CSRT) requiring rapid decision making and step initiation; (2) inhibitory choice stepping reaction time (iCSRT) requiring additional response inhibition and response-selection (go/no-go); and (3) a Stroop Stepping Test (SST) under congruent and incongruent conditions requiring conflict resolution. Participants also completed tests of processing speed, balance, and attention as potential mediators.

RESULTS: Ninety-three of the 212 participants (44%) fell in the follow-up period. Of the step tests, only components of the iCSRT task predicted falls in this time with the relative risk per standard deviation for the reaction time (iCSRT-RT) = 1.23 (95%CI = 1.10-1.37). Multiple mediation analysis indicated that the iCSRT-RT was independently associated with falls and not mediated through slow processing speed, poor balance, or inattention.

CONCLUSIONS: Combined stepping and response inhibition as measured in a go/no-go test stepping paradigm predicted falls in older people. This suggests that integrity of the response-selection component of a voluntary stepping response is crucial for minimizing fall risk.

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Increased postural sway during quiet stance as a risk factor for prospective falls in community-dwelling elderly individuals

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Abstract

OBJECTIVE: fall-related injuries constitute major health risks in older individuals, and these risks are projected to increase in parallel with increasing human longevity. Impaired postural stability is a potential risk factor related to falls, although the evidence is inconclusive, partly due to the lack of prospective studies. This study aimed to investigate how objective measures of postural sway predict incident falls.

DESIGN, SETTING AND PARTICIPANTS: this prospectively observational study included 1,877 community-dwelling individuals aged 70 years who participated in the Healthy Ageing Initiative between June 2012 and December 2015.

MEASUREMENTS: postural sway was measured during eyes-open (EO) and eyes-closed (EC) trials using the Wii Balance Board. Functional mobility, muscle strength, objective physical activity and cognitive performance were also measured. Participants reported incident falls 6 and 12 months after the examination.

RESULTS: during follow-up, 255 (14%) prospective fallers were identified. Division of centre of pressure (COP) sway lengths into quintiles revealed a nonlinear distribution of falls for EO trial data, but not EC trial data. After adjustment for multiple confounders, fall risk was increased by 75% for participants with COP sway lengths ≥ 400 mm during the EO trial (odds ratio [OR] 1.75, 95% confidence interval [CI] 1.09-2.79), and approximately doubled for sway lengths ≥ 920 mm during the EC trial (OR 1.90, 95% CI 1.12-3.22).

CONCLUSION: objective measures of postural sway independently predict incident falls in older community-dwelling men and women. Further studies are needed to evaluate whether postural sway length is of interest for the prediction of incident falls in clinical settings.

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Individual and contextual characteristics of indoor and outdoor falls in older residents of Sao Paulo, Brazil

do Nascimento CF, Oliveira Duarte YA, Lebrao ML, Porto Chiavegatto Filho AD.

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Abstract

PURPOSE of the study: To analyze a representative sample of older individuals of Sao Paulo, Brazil, according to outdoor fallers, indoor fallers and non-fallers, and to identify biological and socioeconomic (individual and contextual) factors associated with the occurrence and place of falls.

MATERIALS AND METHODS: A cross-sectional study was conducted using data ($n = 1345$) from the 2010 wave of the Health, Wellbeing and Aging (SABE) Study, a representative sample of older residents (60 years and older) of Sao Paulo, Brazil. Multinomial logistic analysis was performed to identify individual factors associated with the occurrence and place of falls, and multilevel multinomial analysis to identify contextual effects (green areas, violence, presence of slums and income inequality).

RESULTS: 29% had a fall in the last 12 months, with 59% occurring in indoor spaces. Individuals who had outdoor falls were overall not statistically different from non-fallers; on the other hand, those who had the last fall indoor had worse health status. Moderate homicide rate was a factor associated with increased presence of indoor falls, compared with non-fallers. Implications: Our results describe the importance of falls, a common problem in active and community-dwelling older adults of Sao Paulo, Brazil. Transforming outdoor spaces into walk-friendly areas is essential to allow socialization and autonomy with safety. Creating strategies that take into account the most vulnerable populations, as those who live in violent areas and the oldest older adults, will be a growing challenge among developing countries. (C) 2016 Elsevier Ireland Ltd. All rights reserved.

PDF Y Endnote Y

Levodopa has primarily negative influences on postural control in patients with Parkinson's disease

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Behav. Brain Res. 2017; ePub(ePub): ePub.

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Abstract

Patients with Parkinson's disease have better functional status and motor performance under on-drug conditions. However, the administration of levodopa leads to greater postural sway. The present study's primary objective was to determine whether this on-drug problem may be related to a lack of adjustment in postural control mechanisms and body segment rotations. Fourteen patients with Parkinson's disease and 14 controls performed two gaze-shift tasks (40° to the left and 40° to the right, at 0.125 and 0.25Hz) and a stationary gaze task in two sessions (an off-drug session and an on-drug session for the patients, and two off-drug sessions for the controls). At baseline, the "on-drug" patients indeed swayed significantly more than the controls during the gaze-shift tasks. As expected, acute L-dopa administration did not increase eye, head, neck and lower back rotation of the patients during the gaze-shift tasks. Unexpectedly, levodopa appeared to enable the patients to significantly increase the contribution of their postural control mechanisms (relative to controls) during the gaze-shift tasks. However, and as expected, this adjustment was not great enough to enable the patients to maintain their postural sway as well as the controls did. Overall, the administration of levodopa seemed to destabilize the patients-especially with regard to the lower back region. In addition, the patients used hypermetric eye rotations during the gaze-shift tasks under both off- and on-drug conditions. If they had not used these compensatory eye rotations, their unsafe behavior at the hip level might have been even more pronounced. Future research should focus on this lower back weakness.

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Positive and negative influences of social participation on physical and mental health among community-dwelling elderly aged 65-70 years: a cross-sectional study in Japan

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BMC Geriatr. 2017; 17(1): e111.

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Abstract

BACKGROUND: Although numerous investigations have indicated that social participation (SP) has positive effects on the health of older adults, there have been few studies on its negative health consequences. We examined the cross-sectional associations of the type, frequency, and autonomy for SP with physical and mental health.

METHODS: The analytical subjects were 5126 males and 7006 females who were functionally independent, born between 1945 and 1949, and covered by A City's medical insurance system. Physical and mental health were measured using the SF-8 Health Survey. SP was measured through six types of social groups. These social groups included volunteer groups, sports groups, hobby clubs, senior citizens' clubs, neighborhood community associations, and cultural groups. Analysis of

covariance was conducted to compare adjusted physical health component summary scores (PCS) and mental health component summary scores (MCS) by the frequency and autonomy of SP. Age, family size, body mass index, chronic conditions, smoking, alcohol intake, depression and cognitive functioning were included as covariates. To examine whether the associations between SP and PCS/MCS are different between genders, we performed analyses stratified by gender.

RESULTS: Overall, positive associations of the frequency and autonomy of SP with PCS and MCS were stronger in females than males. As to frequency, frequent participation in sports groups and hobby clubs had significantly better PCS among both genders and better MCS among females than non-participation. None of the groups differed significantly in the MCS among males. As to autonomy, among both genders, voluntary participation in sports groups and hobby clubs had significantly better PCS than non-participation, and better MCS than not only non-participation, but also obligatory participation. Among females, obligatory participation in all groups had significantly poorer MCS than voluntary participation, and obligatory participation in sports groups had significantly poorer MCS than non-participation.

CONCLUSIONS: Obligatory SP had significantly poorer MCS than voluntary participation, occasionally than non-participation; there is a possibility that obligatory SP has harmful influences on mental health of community-dwelling elderly. Measures to promote SP with consideration for individuals' autonomy may be effective in the public health approach to maintaining mental health.

PDF Y Endnote Y

Re: lower urinary tract symptoms and incident falls in community dwelling older men: the Concord Health and Ageing in Men Project

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Eur. Urol. 2017; ePub(ePub): ePub.

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Abstract [Abstract unavailable]

PDF Y Endnote Y

Sarcopenia is a risk factor for falling in independently living Japanese older adults: a 2-year prospective cohort study of the GAINA study

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Geriatr. Gerontol. Int. 2017; ePub(ePub): ePub.

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(Copyright © 2017, Japan Geriatrics Society, Publisher John Wiley and Sons)

DOI 10.1111/ggi.13047 **PMID** 28517243

Abstract

AIM: The purpose of the present study was to investigate whether sarcopenia was associated with future falls in the general Japanese older population.

METHODS: This study was a 2-year prospective observational study. Participants were recruited from individuals who had an annual town-sponsored medical check-up and had not received nursing care. The inclusion criteria for participants in our study were: (i) agreement to participate; (ii) living independently; and (iii) the ability to walk to where the survey was carried out and to provide self-

reported data. A total of 223 residents (82 men, 141 women) participated in the baseline assessment in the study. Demographic information, previous fall history, locomotive syndrome, body function and structural measurements and pain at the knee and/or lumbar spine were assessed. The Asian Working Group for Sarcopenia algorithm was used to classify the presence of sarcopenia, and assess the history of falling when the participant received their annual medical check-up.

RESULTS: A total of 162 participants had an annual follow-up assessment, 50 of whom (30.8%) fell at least once during the 2-year observational period after baseline assessment. Previous falling history, prevalence of locomotive syndrome, sarcopenia and pain were significantly higher in participants who had fallen compared with participants who had not. Multiple logistic regression analysis showed the prevalence of sarcopenia was a significant predictor of falling.

CONCLUSION: The key finding of the present study suggests that sarcopenia is a risk factor for falling in older adults who are living independently even after adjustment for previous falls and confounding factors

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Sex differences in the association between pain and injurious falls in older adults: a population-based longitudinal study

Welmer AK, Rizzuto D, Calderón-Larrañaga A, Johnell K.

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Abstract

We investigated whether there are sex differences in the association between pain and incident injurious falls. A total of 2934 people (≥ 60 years) from the population-based Swedish National study on Aging and Care in Kungsholmen (2001-2004) participated. Participants were followed up for 3 and 10 years for falls leading to hospitalization or outpatient care. Data were analyzed with flexible parametric survival models adjusted for potential confounders. During 3 years of follow-up, 67 men and 194 women experienced an injurious fall, and over 10 years of follow up, 203 men and 548 women experienced such a fall. In men, the presence of pain, pain that was at least mild, pain that affected several daily activities, and daily pain significantly increased the likelihood of an injurious fall during the 3-year follow-up. The multi-adjusted hazard ratios ranged from 1.78 (95% confidence interval: 1.00, 3.15) for the presence of pain to 2.89 (95% confidence interval: 1.41, 5.93) for several daily activities affected by pain. The 10-year follow-up results were similar. No significant associations were detected in women. Although pain is less prevalent in men than women, its impact on risk of injurious falls seems to be greater in men.

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Association between the risk of falls and osteoporotic fractures in patients with type 2 diabetes mellitus

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Endocr. J. 2017; ePub(ePub): ePub.

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(Copyright © 2017, Japan Endocrine Society)

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Abstract

Diabetes mellitus is associated with an increased risk of falls, which increases the incidence of osteoporotic fractures and accordingly decreases quality of life. However, the association between fall risk and diabetic complications is not completely understood. Therefore, the aim of this study was to examine the association between fall risk and osteoporotic fractures in patients with type 2 diabetes mellitus (T2DM). We enrolled 194 Japanese patients with T2DM and assessed their fall risk using a brief interview form that included five items covering physical and social aspects of functioning and environmental factors. We examined the associations between fall risk and the presence of diabetic complications, such as neuropathy, retinopathy, nephropathy, cardiovascular disease, cerebrovascular disease, peripheral artery disease (PAD), and osteoporotic fractures (including any fracture and vertebral fractures only). In the multivariate logistic regression analysis, a longer history of T2DM, the presence of neuropathy and PAD, and a history of any fractures were significantly and positively associated with the risk of falls. On the other hand, a lower body mass index, the presence of neuropathy, and the risk of falls were independently and positively associated with the risk of any fracture. When fractures were limited to vertebral fractures only, the association with the risk of falls remained significant. We found that the risk of falls and osteoporotic fractures were associated in patients with T2DM and that a brief screening test of the risk of falls was useful for assessing the risk of osteoporotic fractures.

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Comparison of self-selected walking speeds and walking speed variability when data are collected during repeated discrete trials and during continuous walking

Brown MJ, Hutchinson LA, Rainbow MJ, Deluzio KJ, De Asha AR.

J. Appl. Biomech. 2017; ePub(ePub): 1-14.

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(Copyright © 2017, Human Kinetics Publishers)

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Abstract

A typical gait analysis data collection consists of a series of discrete trials, where a participant initiates gait, walks through a motion capture volume, and then terminates gait. This is not a normal 'everyday' gait pattern, yet measurements are considered representative of normal walking. However, walking speed, a global descriptor of gait quality that can affect joint kinematics and kinetics, may be different during discrete trials, compared to continuous walking. Therefore, the purpose of this study was to investigate the effect of continuous walking versus discrete trials on walking speed and walking speed variability. Data were collected for twenty-five healthy young adults performing two walking tasks. The first task represented a typical gait data collection session, where subjects completed repeated trials, beginning from a stand-still and walking along a twelve meter walkway. The second task was continuous walking along a "figure-of-eight" circuit, with one section containing the same twelve meter walkway. Walking speed was significantly higher during the discrete trials compared to the continuous trials ($p < 0.001$), but there were no significant differences in walking speed variability between the conditions. The results suggest that choice of gait protocol may affect results where variables are sensitive to walking speed.

PDF Y Endnote Y

Discriminative and predictive validity of the short-form activities-specific balance confidence scale for predicting fall of stroke survivors

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J. Phys. Ther. Sci. 2017; 29(4): 716-721.

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(Copyright © 2017, Society of Physical Therapy Science)

DOI 10.1589/jpts.29.716 **PMID** 28533616 **PMCID** PMC5430279

Abstract [

PURPOSE: The present study aimed to investigate the discriminative validity of the short-form activities-specific balance confidence scale (ABC scale) in predicting falls, and its validity.

SUBJECTS AND METHODS: 43 stroke survivors were identified as a group with a history of multiple falls (faller group) and a group without or with a history of one falls (non-faller group). The balance confidence was examined using the ABC scale and the short-form ABC scale. Functional abilities were examined with Fugl-Meyer assessment, sit-to-stand test, and Berg balance scale.

RESULTS: The area under the curve of the ABC scale and the short-form ABC scale in predicting fall was >0.77. This result indicates that both examination tools have discriminative validity in predicting falls. Although both tools showed an identical predictable specificity of 72% in the non-faller and faller groups, the short-form ABC scale exhibited a predictable sensitivity of 86% in the faller group, which is higher than that of the ABC scale (71%).

CONCLUSION: Results of this study showed that the short-form ABC scale is an efficient clinical tool to evaluate and predict the balance confidence of stroke survivors.

PDF Y Endnote Y

Prevalence and correlates of frailty among community-dwelling Chinese older adults: the China Health and Retirement Longitudinal Study

Wu C, Smit E, Xue QL, Odden MC.

J. Gerontol. A Biol. Sci. Med. Sci. 2017; ePub(ePub): ePub.

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(Copyright © 2017, Gerontological Society of America)

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Abstract

BACKGROUND: Frailty is an age-related clinical syndrome of decreased resilience to stressors and is associated with numerous adverse outcomes. Although there is preponderance of literature on frailty in developed countries, limited investigations have been conducted in less developed regions including China—a country that has the world's largest aging population. We examined frailty prevalence in China by socio-demographics and geographic region, and investigated correlates of frailty.

METHODS: Participants were 5301 adults aged ≥60 years from the China Health and Retirement Longitudinal Study. Frailty was identified by the validated physical frailty phenotype (PFP) scale. We estimated frailty prevalence in the overall sample and by socio-demographics. We identified age-adjusted frailty prevalence by geographical region. Bivariate associations of frailty with health and function measures were evaluated by chi-squared test and analysis of variance.

RESULTS: We found 7.0% of adults aged ≥ 60 years were frail. Frailty is more prevalent at advanced ages, among women, and persons with low education. Age-adjusted frailty prevalence ranged from 3.3% in the Southeast and the Northeast to 9.1% in the Northwest, and was >1.5 times higher in rural vs. urban areas. Frail vs. nonfrail persons had higher prevalence of comorbidities, falls, disability, and functional limitation.

CONCLUSIONS: We demonstrated the utility of the PFP scale in identifying frail Chinese elders, and found substantial socio-demographic and regional disparities in frailty prevalence. The PFP scale may be incorporated into clinical practice in China to identify the most vulnerable elders to reduce morbidity, prevent disability, and enable more efficient use of healthcare resources.

PDF Y Endnote Y

Usual alcohol consumption and risks for nonfatal fall injuries in the United States: results from the 2004-2013 National Health Interview Survey

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Subst. Use Misuse 2017; ePub(ePub): ePub.

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(Copyright © 2017, Informa - Taylor and Francis Group)

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Abstract

BACKGROUND: Acute alcohol consumption is known to be a risk factor for fall injuries.

OBJECTIVE: The study sought to determine whether usual alcohol consumption increases the risk for nonfatal fall injuries.

METHOD: Data from 289,187 sample adults in the 2004-2013 U.S. National Health Interview Surveys were analyzed. Of these, 3,368 (~1%) reported a total of 3,579 fall-injury episodes requiring medical consultation in the past 3 months. Latent class analysis based on four contextual indicators identified four ecological subtypes of fall injury within two age groups (18-49 and 50+). Five drinking patterns (i.e., lifetime abstainer, former drinker, low-risk drinker, increased-risk drinker, and highest-risk drinker) were categorized according to the National Institute on Alcohol Abuse and Alcoholism (NIAAA) low-risk drinking guidelines. Controlling for potential confounders, negative binomial regression estimated the adjusted rates of any type and subtypes of fall injury, by gender, for each drinking pattern relative to lifetime abstainer.

RESULTS: Compared with lifetime abstainers, the adjusted rate of any fall injury for adults ages 18-49 was significantly higher among highest-risk drinkers (men: incidence rate ratio [IRR] = 2.59, 95% confidence interval [CI] [1.60, 4.20]; women: IRR = 1.90, 95% CI [1.24, 2.91]) and increased-risk drinkers (men: IRR = 1.94, 95% CI [1.25, 3.00]; women: IRR = 1.51, 95% CI [1.11, 2.07]). Furthermore, highest-risk drinkers had higher adjusted rates of either leisure- or sports-related fall injuries than lifetime abstainers.

CONCLUSIONS: Alcohol consumption exceeding NIAAA's low-risk drinking guidelines is associated with elevated rates of nonfatal fall injuries. Findings underscore the importance of adhering to these recommendations.

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