

Fall risk question-based tools for fall screening in community-dwelling older adults: a systematic review of the literature

Argyrou C, Dionyssiotis Y, Galanos A, Vlamis J, K Triantafyllopoulos I, Dontas IA, Chronopoulos E. J. Frailty Sarcopenia Falls 2023; 8(4): 240-253.

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Abstract

Fall screening tools aim to accurately identify the high fall risk individuals. To increase ease of administration and cost-effectiveness many studies focus on question-based tools. The purpose of this systematic review was to identify question-based tools for fall risk assessment in community-dwelling older adults over the age of 60 and the risk factors that are covered by these tools. The PRISMA guidelines were followed. A literature search was conducted in PubMed/MEDLINE, Web of Science and Google Scholar. Data quality assessment was performed with the Ottawa-Newcastle scale. The results identified 20 studies that used 22 question-based tools to assess fall risk. The number of questions per tool varied from 1 to 41 questions. Data quality varied greatly, with values 3-9 for cohort and 2-7 for cross-sectional studies. The most commonly reported fall risk factors were fall history, feeling of unsteadiness, fear of falling, muscle strength, gait limitation and incontinence. Healthcare providers should use the above tools with caution regarding the limitations of each tool. Further studies should be designed to address individuals with high fall risk, such as individuals with cognitive impairment, as they are under-represented or excluded from most of the existing studies.

Language: en

Keywords: Community-dwelling older adults; Elderly; Fall risk; Fall risk screening; Questionnaires

Costs of hip fractures in postmenopausal women in Portugal: a study from the payer's perspective [Letter]

Barcelos A, Gonçalves J, Mateus C, Canhão H, Rodrigues AM. Acta Med. Port. 2023; 36(12): 848-849.

(Copyright © 2023, Centro Editor Livreiro da Ordem dos Medicos)

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Abstract

[Abstract unavailable]

Language: en

Keywords: *Hip Fractures; *Postmenopause; Cost of Illness; Costs and Cost Analysis; Delivery of Health Care; Female; Hip Fractures; Humans; Osteoporosis; Portugal/epidemiology; Postmenopause

Fall risk and cardiovascular outcomes of first-line antihypertensive medications in nursing home residents

Berry SD, Hayes K, Lee Y, Zhang Y, Kim DH, Ko D, Kiel DP, Daielo L, Zhang T, Zullo AR. J. Am. Geriatr. Soc. 2023; ePub(ePub): ePub.

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Abstract

BACKGROUND: Little evidence exists about the comparative effects of first-line antihypertensive medications (i.e., renin-angiotensin-aldosterone converting enzyme inhibitors (RAASi), amlodipine, or thiazide diuretics) in older adults with limited life expectancy. We compared the rates of injurious falls and short-term cardiovascular events between different first-line antihypertensive medication classes in adults receiving care in nursing homes (NH).

METHODS: This was a retrospective cohort of Medicare fee-for-service beneficiaries receiving care in NHs. Patients newly dispensed first-line antihypertensive medications were identified using Part D claims (2015-2018) and linked with clinical assessments (i.e., Minimum Data Set). Fall-related injuries (FRI), hip fractures, and major adverse cardiac events (MACE) outcomes were identified using hospitalization claims. Patients were followed from the date of antihypertensive dispensing until the occurrence of outcomes, death, disenrollment, or 6-month follow-up. Inverse-probability-of-treatment-weighted (IPTW) cause-specific hazards regression models were used to compare outcomes between patients who were new users of RAASi, amlodipine, or thiazides.

RESULTS: Our cohort included 16,504 antihypertensive users (RAASi, n = 9574; amlodipine, n = 5049; thiazide, n = 1881). Mean age was 83.5 years (\pm 8.2), 70.6% were female, and 17.2% were non-white race. During a mean follow-up of 5.3 months, 326 patients (2.0%) experienced an injurious fall, 1590 (9.6%) experienced MACE, and 2123 patients (12.9%) died. The intention-to-treat IPTW hazard ratio (HR) for injurious falls for amlodipine (vs RAASi) use was 0.85 (95% confidence interval (CI) 0.66-1.08) and for thiazides (vs RAASi) was 1.22 (95% CI 0.88-1.66). The rates of MACE were similar between those taking anti-hypertensive medications. Thiazides were discontinued more often than other classes; however, inferences were largely unchanged in as-treated analyses. Subgroup analyses were generally consistent.

CONCLUSIONS: Older adults with limited life expectancy experience similar rates of injurious falls and short-term cardiovascular events after initiating any of the first-line antihypertensive medications.

Language: en

Keywords: antihypertensives; hypertension; long-term care; nursing home; safety

Effects of hip joint kinematics on the effective pelvis stiffness and hip impact force during simulated sideways falls

Choi JW, Park JW, Choi WJ. J. Biomech. 2023; 162: e111885.

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Abstract

Improved understanding is required on how hip fracture risk is influenced by landing configuration. We examined how hip impact dynamics was affected by hip joint kinematics during simulated sideways falls. Twelve young adults (7 males, 5 females) of mean age 23.5 (SD = 1.5) years, participated in pelvis release experiments. Trials were acquired with the hip flexed 15° and 30° for each of three hip rotations: +15° ("external rotation"), 0°, and -15° ("internal rotation"). During falls, force-deformation data of the pelvis were recorded. Outcome variables included the peak hip impact force ($F(\text{experimental})$) and effective stiffness of the pelvis ($k(1\text{st})$, $k(\text{secant})$, and $k(\text{ms})$) determined with different methods suggested in literature, and predicted hip impact force during a fall from standing height ($F(1\text{st})$, $F(\text{secant})$ and $F(\text{ms})$). The two-way repeated-measures ANOVA was used to test whether these variables were associated with hip joint angles. The $F(\text{experimental})$, $k(\text{secant})$ and $F(\text{secant})$ were associated with hip rotation ($F = 5.587$, $p = 0.005$; $F = 9.278$, $p < 0.0005$; $F = 5.778$, $p = 0.004$, respectively), and 15 %, 31 % and 17 % smaller in 15° external than internal rotation (848 versus 998 N; 24.6 versus 35.6 kN/m; 2,637 versus 3,170 N, respectively). However, none of the outcome variables were associated with hip flexion ($p > 0.05$). Furthermore, there were no interactions between the hip rotation and flexion for all outcome variables ($p > 0.05$). Our results provide insights on hip impact dynamics, which may help improve a hip model to assess hip fracture risk during a fall.

Language: en

Keywords: Falls; Femur orientation; Hip fracture risk; Hip joint kinematics; Pelvis stiffness

Effectiveness of group-based interventions for fall prevention among community-dwelling older adults - 7 regions, 6 PLADs, China, 2019-2020

Er Y, Lu Z, Jin Y, Ye P, Duan L. China CDC Wkly. 2023; 5(47): 1047-1051.

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Abstract

WHAT IS ALREADY KNOWN ABOUT THIS TOPIC? Many of the current studies focusing on fall prevention interventions have been conducted in hospital settings within a select few urban areas in China, thus yielding limited evidence on the effectiveness of large-scale, multicenter, community-based interventions.

WHAT IS ADDED BY THIS REPORT? In comparison to the control group, participants in the intervention group exhibited a 64% reduction in fall risk. Group-based fall prevention programs have demonstrated efficacy in mitigating fall risk among the elderly population

WHAT ARE THE IMPLICATIONS FOR PUBLIC HEALTH PRACTICE? Group-based fall prevention interventions serve as a significant adjunctive resource for the management of elderly health within communities and offer compelling evidence to support the incorporation of fall prevention strategies into health policy frameworks in China.

Language: en

Keywords: Intervention; Effectiveness; Falls; Older People

Geographic variation in bone mineral density and prevalent fractures in the Canadian longitudinal study on aging

Hassanabadi N, Berger C, Papaioannou A, Cheung AM, Rahme E, Leslie WD, Goltzman D, Morin SN. Osteoporos. Int. 2023; ePub(ePub): ePub.

(Copyright © 2023, Holtzbrinck Springer Nature Publishing Group)

DOI: 10.1007/s00198-023-06975-5

PMID: 38040857

Abstract

Awareness of the prevalence of osteoporosis and fractures across jurisdictions can guide the development of local preventive programs and healthcare policies. We observed geographical variations in total hip bone mineral density and in the prevalence of major osteoporotic fractures across Canadian provinces, which persisted after adjusting for important covariates.

PURPOSE: We aimed to describe sex-specific total hip bone mineral density (aBMD) and prevalent major osteoporotic fractures (MOF) variation between Canadian provinces.

METHODS: We used baseline data from 21,227 Canadians (10,716 women, 10,511 men) aged 50-85 years in the Canadian Longitudinal Study on Aging (CLSA; baseline: 2012-2015). Linear and logistic regression models were used to examine associations between province of residence and total hip aBMD and self-reported MOF, stratified by sex. CLSA sampling weights were used to generate the prevalence and regression estimates.

RESULTS: The mean (SD) age of participants was 63.9 (9.1) years. The mean body mass index (kg/m²) was lowest in British Columbia (27.4 [5.0]) and highest in Newfoundland and Labrador (28.8 [5.3]). Women and men from British Columbia had the lowest mean total hip aBMD and the lowest prevalence of MOF. Alberta had the highest proportion of participants reporting recent falls (12.0%), and Manitoba (8.4%) the fewest (p-value=0.002). Linear regression analyses demonstrated significant differences in total hip aBMD: women and men from British Columbia and Alberta, and women from Manitoba and Nova Scotia had lower adjusted total hip aBMD than Ontario (p-values<0.02). Adjusted odds ratios (95% confidence intervals, CI) for prevalent MOF were significantly lower in women from British Columbia (0.47 [95% CI: 0.32; 0.69]) and Quebec (0.68 [95% CI: 0.48; 0.97]) and in men from British Columbia (0.40 [95% CI: 0.22; 0.71]) compared to Ontario (p-values<0.03).

RESULTS were similar when adjusting for physical performance measures and when restricting the analyses to participants who reported White race/ethnicity.

CONCLUSION: Geographical variations in total hip aBMD and in the prevalence of MOF between provinces persisted after adjusting for important covariates which suggests an association with unmeasured individual and environmental factors.

Language: en

Keywords: Fracture; Bone mineral density; Canadian Longitudinal Study on Aging; CLSA; Geographic variation

The measurement and reporting of falls: recommendations for research and practice on defining faller types [Editorial]

Jehu DA, Skelton DA. J. Frailty Sarcopenia Falls 2023; 8(4): 200-203.

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Abstract

[Abstract unavailable]

Language: en

Cross-cultural adaptation and construct validity of the Chinese Version of Visual Vertigo Analogue Scale by using structural equation modeling

Li XX, Yu HY, Li JJ, Liu XL, Zheng HY, Li YF, Li Q, Liu SY. J. Vestib. Res. 2023; ePub(ePub): ePub.

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Abstract

BACKGROUND: Visual vertigo (VV) is a disease characterized by various visual signal-induced discomforts, including dizziness, unsteady balance, activity avoiding, and so forth. Distinguishing it from other kinds of dizziness is important because it needs the combination of visual training and vestibular rehabilitation together. However, there is no appropriate tool to diagnose VV in China, thus we would like to introduce an effective tool to China.

OBJECTIVE: The aim of this study was to establish the reliability and validity of the Chinese version of visual vertigo analogue scale (VVAS-CH) and to achieve its crosscultural adaptation in order to promote its further usage in China.

METHODS: A total of 1681 patients complaining of vertigo or dizziness were enrolled and they were asked to complete the VVAS-CH. The cross-cultural adaptation, reliability and construct validity of the VVAS-CH were determined.

RESULTS: Split-half reliability was 0.939, showing a good reliability. Factor analysis identified only one common factor for the nine items that explained 64.83% of the total variance. Most fit indices reached acceptable levels, proving the good fit of the VVAS-CH model.

CONCLUSIONS: The VVAS-CH validated in this study can be used as an effective tool for diagnosing and evaluating VV in patients whose native language is Chinese.

Language: en

Keywords: validity; dizziness; common factor; scale; Visual vertigo

A stepped-wedge cluster-randomized controlled trial of multi-interventional approach for fall prevention

Najafpour Z, Arab M, Rashidian A, Shayanfar K, Yaseri M, Biparva-Haghighi S. Qual. Manag. Health Care 2023; ePub(ePub): ePub.

(Copyright © 2023, Lippincott Williams and Wilkins)

DOI: 10.1097/QMH.0000000000000435 **PMID:** 38031258

Abstract

BACKGROUND AND OBJECTIVES: Falls are one of the most common adverse events at hospitals that may result in injury and even death. They are also associated with raised length of stay (LOS) and hospitalization costs. This experiment aimed to examine the effectiveness of multiple interventions in reducing inpatient fall rates and the consequent injuries.

METHODS: The present study was a stepped-wedge cluster-randomized controlled trial. It was done in 18 units in a public university hospital over 36 weeks. Patients included in this research were at risk of falls. Overall, 33 856 patients were admitted, of whom 4766 were considered high-risk patients. During the intervention phases, a series of preventive and control measures were considered, namely staff training; patient education; placement of nursing call bells; adequate lighting; supervision of high-risk patients during transmission and handovers; mobility device allocation; placement of call bell and safe guard in bathrooms; placing "fall alert" signs above patients' beds; nurses informing physicians timely about complications such as delirium and hypoxia; encouraging appropriate use of eyeglasses, hearing aids and footwear; keeping side rails up; and reassessing patients after each fall. The primary outcome was participant falls per 1000 patient-days. Secondary outcomes were fall-related injuries and LOS.

RESULTS: The results revealed a decrease in fall rate ($n = 4$ per 1000 patient-days vs 1.34 per 1000 patient-days, incidence rate ratio (IRR) = 0.19 [95% confidence interval (CI), 0.14-0.26]; $P = .001$) and injuries ($n = 2.4$ per 1000 patient-days vs 0.79 per 1000 patient-days, IRR = 0.22 [95% CI, 0.15-0.32]; $P = .001$) in exposed compared with unexposed phases. There was not a significant difference in LOS (exposed mean 10.63 days [95% CI, 10.26-10.97], unexposed mean 10.84 days [95% CI, 10.59-11.09], mean difference = -0.13 [95% CI, -0.53 to 0.27], $P = .52$)

CONCLUSIONS: This multi-interventional trial showed a reduction in falls and fall rates with injury but without an overall effect on LOS. Further research is needed to understand the sustainability of multiple fall prevention strategies in hospitals and their long-term impacts.

Language: en

The relationship between physical activity level and balance parameters, muscle strength, fear of falling in patients with hypertension

Özler N, Malkoc M, Angin E. Medicine (Baltimore) 2023; 102(48): e36495.

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Abstract

The number of studies investigating the role of physical activity and exercise in hypertension (HT) patients is insufficient in the literature, and reports evaluating the relationship between HT, physical activity, and balance are lacking. This study aims to examine the relationship between physical activity levels and balance parameters, muscle strength, and fear of falling in patients with HT. 78 subjects with HT participated in this study. Demographic and clinical characteristics of all participants were recorded. Blood pressure was evaluated using a sphygmomanometer, physical activity level was assessed using a SenseWear Armband, fear of falling was assessed using the Fall Efficacy Scale, balance was assessed using the Fullerton Advanced Balance Scale, and muscle strength was evaluated using a digital handheld dynamometer. All 78 subjects completed the study as planned. The average age of participants was 57.75 ± 5.82 , the mean systolic blood pressure was 133 ± 5.73 , and the diastolic blood pressure was 84 ± 6.78 . 34.2% of participants used angiotensin-converting enzyme inhibitors, 38% used beta blockers, and 26% used diuretic drugs. A positive correlation between physical activity and balance scores of individuals with HT was found ($P < .005$). It was also found that low muscle strength was associated with balance and risk of falling ($P < .005$). There is a positive correlation between decreased physical activity levels and balance in participants with HT. The results suggest that people with HT who have poor balance also have decreased muscle strength against gravity, such as in the quadriceps femoris and gluteus maximus. Overall, we recommend that patients with HT should improve their physical activity levels.

Language: en

Keywords: Humans; *Fear; *Hypertension; Exercise/physiology; Muscle Strength/physiology; Postural Balance/physiology

Assessing standing balance with MOTI: a validation study

Pálsson S, Gaardbo M, Mikkelsen C, Hirata RP. Biomed. Tech. 2023; ePub(ePub): ePub.

(Copyright © 2023, Walter de Gruyter)

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PMID: 38041425

Abstract

OBJECTIVES: This study aimed to determine the validity and reliability of a new device called MOTI for measuring balance by comparing its performance that with of the gold-standard force platform.

METHODS: The study involved collecting data from both devices in dual- and single-leg standing positions with eyes open and closed and using statistical measures to compare their performance.

RESULTS: The results showed that MOTI can accurately measure balance during dual-leg standing tasks but has poor to moderate performance during single-leg standing tasks. However, it could detect small changes in postural sway caused by a reduced base of support and/or visual feedback. The study also found that the test-retest reliability was poor to moderate for both devices.

CONCLUSIONS: These findings suggest that MOTI has potential as a reliable tool for measuring balance during certain tasks, but further research is needed to improve its performance during single-leg standing. This study provides valuable insights into the validity and reliability of MOTI for measuring balance and highlights the need for further investigation.

Language: en

Keywords: accelerometer; balance assessment; postural control; validation

Effects of an exercise program to reduce falls in older people living in long-term care: a randomized controlled trial

Taylor LM, Parsons J, Moyes SA, Binns E, Cavadino A, Taylor D, Lord S, Del Din S, Klenk J, Rochester L, Kerse N. J. Am. Med. Dir. Assoc. 2023; ePub(ePub): ePub.

(Copyright © 2023, Lippincott Williams and Wilkins)

DOI: 10.1016/j.jamda.2023.10.022

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Abstract

OBJECTIVES: To investigate the effect of an exercise program on falls in intermediate and high-level long-term care (LTC) residents and to determine whether adherence, physical capacity, and cognition modified outcomes.

DESIGN: Randomized controlled trial. **SETTING AND PARTICIPANTS:** Residents (n = 520, aged 84 ± 8 years) from 25 LTC facilities in New Zealand.

METHODS: Individually randomized to Staying UpRight, a physical therapist-led, balance and strength group exercise program delivered for 1 hour, twice weekly over 12 months. The control arm was dose-matched and used seated activities with no resistance. Falls were collected using routinely collected incident reports.

RESULTS: Baseline fall rates were 4.1 and 3.3 falls per person-year (ppy) for intervention and control groups. Fall rates over the trial period were 4.1 and 4.3 falls ppy respectively [P = .89, incidence rate ratio (IRR) 0.98, 95% CI 0.76, 1.27]. Over the 12-month trial period, 74% fell, with 63% of intervention and 61% of the control group falling more than once. Risk of falls (P = .56, hazard ratio 1.08, 95% CI 0.85, 1.36) and repeat falling or fallers sustaining an injury at trial completion were similar between groups. Fall rates per 100 hours walked did not differ between groups (P = .42, IRR 1.15, 95% CI 0.81, 1.63). Program delivery was suspended several times because of COVID-19, reducing average attendance to 26 hours over 12 months. Subgroup analyses of falls outcomes for those with the highest attendance (≥50% of classes), better physical capacity (Short Physical Performance Battery scores ≥8/12), or cognition (Montreal Cognitive Assessment scores ≥ 18/30) showed no significant impact of the program.

CONCLUSIONS/IMPLICATIONS: In intermediate and high-level care residents, the Staying UpRight program did not reduce fall rates or risk compared with a control activity, independent of age, sex, or care level. Inadequate exercise dose because of COVID-19-related interruptions to intervention delivery likely contributed to the null result.

Language: en

Keywords: Falls; older adults; frailty; cognitive impairment; exercise; nursing homes

Alarm with care-a de-implementation strategy to reduce fall prevention alarm use in US hospitals: a study protocol for a hybrid 2 effectiveness-implementation trial

Turner K, McNett M, Potter C, Cramer E, Al Taweel M, Shorr RI, Mion LC. *Implement. Sci.* 2023; 18(1): 70.

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DOI: 10.1186/s13012-023-01325-9

PMID: 38053114

Abstract

BACKGROUND: Fall prevention alarms are commonly used among US hospitals as a fall prevention strategy despite limited evidence of effectiveness. Further, fall prevention alarms are harmful to healthcare staff (e.g., alarm fatigue) and patients (e.g., sleep disturbance, mobility restriction). There is a need for research to develop and test strategies for reducing use of fall prevention alarms in US hospitals.

METHODS: To address this gap, we propose testing the effectiveness and implementation of Alarm with Care, a de-implementation strategy to reduce fall prevention alarm use using a stepped-wedge randomized controlled trial among 30 adult medical or medical surgical units from nonfederal US acute care hospitals. Guided by the Choosing Wisely De-Implementation Framework, we will (1) identify barriers to fall prevention alarm de-implementation and develop tailored de-implementation strategies for each unit and (2) compare the implementation and effectiveness of high- versus low-intensity coaching to support site-specific de-implementation of fall prevention alarms. We will evaluate effectiveness and implementation outcomes and examine the effect of multi-level (e.g., hospital, unit, and patient) factors on effectiveness and implementation. Rate of fall prevention alarm use is the primary outcome. Balancing measures will include fall rates and fall-related injuries. Implementation outcomes will include feasibility, acceptability, appropriateness, and fidelity.

DISCUSSION: Findings from this line of research could be used to support scale-up of fall prevention alarm de-implementation in other healthcare settings. Further, research generated from this proposal will advance the field of de-implementation science by determining the extent to which low-intensity coaching is an effective and feasible de-implementation strategy. **TRIAL REGISTRATION:** ClinicalTrials.gov identifier: NCT06089239. Date of registration: October 17, 2023.

Language: en

Keywords: Choosing wisely; De-implementation; Fall prevention; Hospital falls; Inpatient falls; Low-value care; Nursing care

SFDA: domain adaptation with source subject fusion based on multi-source and single-target fall risk assessment

Wu S, Shu L, Song Z, Xu X. IEEE Trans. Neural Syst. Rehabil. Eng. 2023; ePub(ePub): ePub.

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Abstract

In cross-subject fall risk classification based on plantar pressure, a challenge is that data from different subjects have significant individual information. Thus, the models with insufficient generalization ability can't perform well on new subjects, which limits their application in daily life. To solve this problem, domain adaptation methods are applied to reduce the gap between source and target domain. However, these methods focus on the distribution of the source and the target domain, but ignore the potential correlation among multiple source subjects, which deteriorates domain adaptation performance. In this paper, we proposed a novel method named domain adaptation with subject fusion (SFDA) for fall risk assessment, greatly improving the cross-subject assessment ability. Specifically, SFDA synchronously carries out source target adaptation and multiple source subject fusion by domain adversarial module to reduce source-target gap and distribution distance within source subjects of same class. Consequently, target samples can learn more task-specific features from source subjects to improve the generalization ability. Experiment results show that SFDA achieved mean accuracy of 79.17 % and 73.66 % based on two backbones in a cross-subject classification manner, outperforming the state-of-the-art methods on continuous plantar pressure dataset. This study proves the effectiveness of SFDA and provides a novel tool for implementing cross-subject and few-gait fall risk assessment.

Language: en

Self-reported bone fracture among Malaysian adults: baseline findings of PURE Malaysia cohort study

Zaleha MI, Noor Hassim I, Azmi MT, Hasni MJ, Rosnah I, Abdul-Hamid H, Dasiman R, Zainol Abidin N, Ab Razak NH, Khairul Hazdi Y. Med. J. Malaysia 2023; 78(6): 787-792.

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PMID: 38031222

Abstract

INTRODUCTION: In Malaysia, studies on self-reported bone fractures are scarce. Due to the fact that bone fractures may serve as an indicator of osteoporosis in the community, this study aimed to identify the factors associated with their occurrence among adults in Malaysia.

MATERIALS AND METHODS: Epidemiological data for self-reported bone fractures were obtained through direct interviews using a validated questionnaire from the Prospective Urban and Rural Epidemiology (PURE) study.

RESULTS: Of 15,378 respondents, 6.63% (n=1019) reported bone fractures, with a higher proportion of men (65.8%, n=671) than women (34.2%, n=348). Higher odds of self-reporting bone fractures were seen in males (aOR, 2.12; 95%CI: 1.69, 2.65), those with a history of injury (aOR 5.01; 95%CI: 3.10, 6.32) and those who were obese (aOR: 1.46; 95% CI: 1.13, 1.89), highly active (aOR 1.25; 95%CI: 1.02, 1.53), smokers (aOR 1.35; 95%CI: 1.11, 1.65) and alcohol consumers (aOR 1.67; 95%CI: 1.20, 2.32).

CONCLUSION: Adopting a healthier lifestyle that includes a balanced diet and moderate physical activity is critical for weight loss, increased muscle and bone mass and better stability, which reduces the likelihood of fractures following a fall.

Language: en

Keywords: Adult; Humans; Female; Male; Risk Factors; Prospective Studies; Cohort Studies; *Fractures, Bone/epidemiology/etiology; Malaysia/epidemiology; Self Report