Preventing falls and fall-related injuries in older people

Cameron ID, Kurrle SE, Sherrington C. Med. J. Aust. 2024; ePub(ePub): ePub.

Abstract

Falls present a major, growing and neglected public health problem with devastating consequences for older individuals, their families and health care systems.

The recently published World guidelines for falls prevention and management for older adults: a global initiative1 (Guidelines) is a comprehensive document that provides extensive recommendations with additional background materials available on an accompanying website. The Guidelines is a consensus document informed by systematic reviews and a Delphi process. This body of work demonstrates that much is known about what works in falls prevention but there is considerable complexity. The main message is that most falls occur due to a loss of balance while upright or walking, and the most important intervention to prevent this is exercise. Rare causes such as cardioinhibitory syncope are also described. The Guidelines includes important messages about the older person's perspective, and which interventions are effective in hospitals and residential aged care facilities.

The Guidelines1 explicitly states that although we know what interventions are effective, we still need to know how best to implement these interventions in our busy health systems. This perspective article aims to provide a digestible version of the most important points from the Guidelines that may be applied in general health and medical settings. For some of the points, we have added our interpretation of additional scientific information that is relevant to a clinical audience. Some solutions need to be implemented outside of our health systems, such as through community awareness, promotion of lifelong exercise, and provision of safe accessible environments.

Following the Guidelines structure, which highlights the importance of tailored intervention rather than a detailed assessment, this article first discusses effective interventions and thereafter addresses assessment. ...

Language: en

Falls experienced by adult cancer survivors: a scoping review

Abstract

PURPOSE: Accidental falls among adult cancer survivors are a health concern. Falls impose economic burdens and detrimental consequences to cancer survivors. This review aimed to synthesize findings from published research to explore the relationship between falls and cancer diagnosis and treatment among cancer survivors.

MATERIALS AND METHODS: A scoping review was conducted using four databases (Medline, EMBASE, CINAHL, and Scopus) for the years 2001-2021. A total of 425 abstracts were identified after removing duplicates. A second search for the years 2022-2023 was completed where 80 abstracts were identified. Abstract screening, full-text review, and data extraction were conducted. Study characteristics and key findings were extracted from full texts. Descriptive numerical summaries were presented, and narrative analyses were performed.

RESULTS AND CONCLUSIONS: A total of 42 articles were included in the scoping review which demonstrated (1) an increased prevalence of falls among cancer survivors, (2) the presence of cancer-specific fall risk factors, (3) a lack of cancer-specific fall prediction tools, and (4) few fall prevention interventions as part of usual care among cancer survivors. Younger cancer survivors were underrepresented. Cancer survivors should be aware of their risk of falls, and health professionals should ensure that fall prevention is part of usual care.

A systematic review of falls risk of frail patients with dementia in hospital: progress, challenges, and recommendations

Abstract

This review article assesses the effectiveness and limitations of strategies to reduce falls among hospitalized older adults with frailty and dementia. It explores the efficacy of existing fall prevention strategies for a cohort that is acutely susceptible to falls and fall-related consequences. A systematic literature search was conducted across MEDLINE, Embase, CINAHL, and PsycINFO, employing Medical Subject Headings (MeSH) to identify studies on fall prevention strategies in hospitalized older adults with both dementia and frailty published from 2013 to 2023. The initial 643 records were distilled to eight articles, with Structured Interdisciplinary Bedside Rounds (SIBR) emerging as a notable intervention. SIBR demonstrated a reduction in falls by fostering improved interdisciplinary communication and care planning. However, a decline in family engagement during consecutive sessions suggests a need for strategies to sustain familial involvement. The findings advocate for patient-centered interventions that address the cognitive and functional challenges faced by this cohort of older adults. This review advocates for comprehensive and inclusive research in hospital environments to improve fall prevention strategies for frail older adults with dementia.

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Risk factors for falls among hospitalized medical patients - a systematic review and meta-analysis

Heinzmann J, Rossen ML, Efthimiou O, Baumgartner C, Wertli MM, Rodondi N, Aubert CE, Liechti FD. Arch. Phys. Med. Rehabil. 2024; ePub(ePub): ePub.

Abstract

OBJECTIVE: To identify and quantify risk factors for in-hospital falls in medical patients. DATA SOURCES: Six databases (MEDLINE, Embase, Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials, CINAHL, and Google Scholar) were systematically screened until April 11, 2023, to identify relevant articles. STUDY SELECTION: All titles and abstracts of the retrieved articles were independently screened by two researchers who also read the full texts of the remaining articles. Quantitative studies that assessed risk factors for falls among adult patients acutely hospitalized were included in the review. Publications that did not capture internal medicine patients or focused on other specific populations were excluded. DATA EXTRACTION: Information on study characteristics and potential risk factors were systematically extracted. Risk of bias was assessed using the Quality in Prognosis Studies (QUIPS) tool. PRISMA and MOOSE guidelines were followed for reporting. DATA SYNTHESIS: The main outcome was any in-hospital falls. Using a random-effects meta-analysis model, association measures for each risk factor reported in five or more studies were pooled. Separate analyses according to effect measure and studies adjusted for sex and age at least were performed. Of 5,067 records retrieved, 119 original publications from 25 countries were included. In conclusion, 23 potential risk factors were meta-analyzed. Strong evidence with large effect sizes was found for a history of falls (OR 2.54; 95% CI 1.63- 3.96; I(2) 91%), antidepressants (pooled OR 2.25; 95% confidence interval [95% CI] 1.92-2.65; I(2) 0%), benzodiazepines (OR 1.97; 95% CI 1.68-2.31; I(2) 0%), hypnotics-sedatives (OR 1.90; 95% CI 1.53-2.36; I(2) 46%), and antipsychotics (OR 1.61; 95% CI 1.33-1.95; I(2) 0%). Furthermore, evidence of associations with male sex (OR 1.22, 95% CI 0.99-1.50, I(2) 65%) and age (OR 1.17, 95% CI 1.02-1.35, I(2) 72%) were found, but effect sizes were small.

CONCLUSIONS: The comprehensive list of risk factors, which specifies the strength of evidence and effect sizes, could assist in the prioritization of preventive measures and interventions.

Test-retest reliability and minimal detectable change of four functional tests in community-dwelling older adults with high risk of falls

Intaruk R, Phadungkit S, Kanpai A, Pawanta K, Srihapol N, Saengsuwan J, Amatachaya S, Thaweewannakij T. Turk. J. Phys. Med. Rehabil. 2024; 70(2): 164-170.

Abstract

OBJECTIVES: This study aimed to quantify test-retest reliability and minimal detectable change (MDC) of the four commonly used functional tests in older adults with a high risk of falling.

PATIENTS AND METHODS: The cross-sectional study was conducted with 30 community-dwelling older adults (26 females, 4 males; mean age: 73.7±6.0 years; range, 65 to 88 years) with a high fall risk identified by the Thai falls risk assessment test between November 2018 and May 2019. Data from the 10-m walk test at a comfortable gait speed (CGS) and fast gait speed (FGS), timed up and go (TUG) test, five times sit to stand test (FTSST), and 6-min walk test (6MWT) were collected twice for each participant. The interval between test sessions was one week. Test-retest reliability was analyzed by the intraclass correlation coefficient (ICC). Standard error of measurement (SEM) and MDC at the 95% confidence interval (MDC(95)) were also calculated.

RESULTS: The four functional tests had ICC in the range of 0.92 to 0.97. The SEM values of the CGS, FGS, TUG, FTSST, and 6MWT were 0.06 m/sec, 0.04 m/sec, 1.10 sec, 1.30 sec, and 20.60 m, respectively. The MDC(95) values of the CGS, FGS, TUG, FTSST, and 6MWT were 0.16 m/sec, 0.12 m/sec, 3.00 sec, 3.50 sec, and 57.20 m, respectively.

CONCLUSION: All functional tests demonstrated excellent test-retest reliability. The SEM and MDC(95) of all functional tests were established. These findings can help clinicians interpret the effectiveness of interventions and determine changes in functional ability over time in older adults at high risk of falls.

Feeble, fallen, and forgetting: association of cognitive impairment and falls on outcomes of major intraabdominal surgeries in older adults

Jehan FS, Powers MT, Alizai Q, Khreiss M, Joseph B, Aziz H. J. Gastrointest. Surg. 2024; ePub(ePub): ePub.

Abstract

INTRODUCTION: Both cognitive impairment/dementia (CID) and falls occur more commonly in older adults compared to younger patients. This study aims to analyze the association of a history of CID or falls with the postoperative outcomes of older adults undergoing major intraabdominal surgeries on a national level.

METHODS: We retrospectively analyzed the American College of Surgeons-National Surgical Quality Improvement Program (ACS-NSQIP) 2022 Participant Use Data File. Our primary outcome was postoperative mortality. Statistical analysis was performed using Chi-square test, and multivariate regression analysis.

RESULTS: On multivariable regression analyses, both a history of CID (OR: 1.9; CI: 1.5-2.5; p <0.01) and a fall (OR: 1.8, CI: 1.4 -2.3; p <0.01) were independently associated with higher adjusted odds of mortality. History of CID or falls was also a predictor of overall complications, major complications, and discharge to a care facility.

CONCLUSION: A history of CID or falls in older adults prior to major intraabdominal surgeries is associated with a high risk of postoperative mortality and morbidity. Further studies are required to establish the causal relation of these factors and the steps to mitigate the risk of associated adverse outcomes.

Screening for frailty and its association with activities of daily living, cognitive impairment, and falls among community-dwelling older adults in China

Abstract

OBJECTIVES: Frailty is a prevalent geriatric condition that significantly impacts the health of older adults. This study aimed to examine the prevalence of frailty among older Chinese adults aged ≥ 65 years and to assess its association with adverse geriatric outcomes.

METHOD: This study included 20,724 older adults aged ≥ 65 years in Jiangsu Province, China, utilizing a random, stratified, multistage cluster sampling approach. Frailty was assessed using the 5-item FRAIL scale. Geriatric outcomes, such as independence in activities of daily living (ADL), cognitive impairment, and frequent fall events (occurring four or more times in the preceding year), were evaluated. Logistic regression models were employed to evaluate the association between frailty and geriatric outcomes, with results presented as odds ratios (ORs) and 95% confidence intervals (CIs).

RESULTS: The mean age of the participants was 73.4 ± 6.4 years. The standardized prevalence of prefrailty and frailty was 35.2% and 10.3%, respectively. Individuals identified as prefrail or frail tended to live in rural areas, have lower educational levels, be widowed, have lower incomes, and engage in less physical activity. Prefrailty and frailty were associated with an increased risk of limitations in BADL (OR: 9.62, 95% CI: 7.43-12.46; and OR: 29.25, 95% CI: 22.42-38.17, respectively) and IADL (OR: 2.54, 95% CI 2.35-2.74; and OR: 5.19, 95% CI 4.66-5.78, respectively), positive cognitive impairment screening (OR: 1.23, 95% CI: 1.16-1.31; and OR: 1.72, 95% CI: 1.56-1.91, respectively), and frequent falls (occurring four or more times in the preceding year) (OR: 3.38, 95% CI: 2.50-4.56; and OR: 8.37, 95% CI: 6.01-11.65). The association between frailty and both limitations in BADL and falls was notably more pronounced among the younger age groups (p for interaction < 0.001).

CONCLUSIONS: According to the 5-item FRAIL scale, frailty was associated with limitations in BADLs and IADLs, positive cognitive impairment screening, and recent falls among older adults living in the community. Screening for frailty in younger age groups has the potential to prevent declines in physical function and falls.

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*Independent Living/trends; ADL; FRAIL scale; Frailty; Mass Screening/methods

Root cause analysis and strategies for reducing falls among inpatients in healthcare facilities: a narrative review

Abstract

BACKGROUND AND AIMS: Root Cause Analysis (RCA) is a systematic process which can be applied to analyze fall incidences in reactive manner to identify contributing factors and propose actions for preventing future falls. To better understand cause of falls and effective interventions for their reduction we conducted a narrative review of RCA and Strategies for Reducing Falls among Inpatients in Healthcare Facilities.

METHODS: In this narrative review, databases including Scopus, ISI Web of Science, Cochrane, and PubMed were searched to obtain the related literature published. Databases were searched from January 2005 until the end of March 2023. The Joanna Briggs Institute (JBI) tool was used for quality assessment of articles. To analyze the data, a five-stage framework analysis method was utilized.

RESULTS: Seven articles that fulfilled the inclusion criteria were identified for this study. All of the selected studies were interventional in nature and employed the RCA method to ascertain the underlying causes of inpatient falls. The root causes discovered for falls involved patient-related factors (37.5%), environmental factors (25%), organizational and process factors (19.6%), staff and communication factors (17.9%). Strategies to reduce falls involved environmental measures and physical protection (29.4%), identifying, and displaying the causes of risk (23.5%), education and culturalization (21.6%), standard fall risk assessment tool (13.7%), and supervision and monitoring (11.8%).

CONCLUSION: the findings identify the root causes of falls in inpatient units and provide guidance for successful action plan execution. Additionally, it emphasizes the importance of considering the unique characteristics of healthcare organizations and adapting interventions accordingly for effectiveness in different settings.

Sarcopenic obesity and falls in older adults: a validation study of ESPEN/EASO criteria and modifications in Western China communities

Li R, Chen X, Tang H, Luo S, Lian R, Zhang W, Zhang X, Hu X, Yang M. Arch. Gerontol. Geriatr. 2024; 127: e105557.

Abstract

OBJECTIVES: The ESPEN and the EASO recently developed consensus criteria for sarcopenic obesity (SO), employing the skeletal muscle mass to weight (SMM/W) ratio. Emerging evidence suggests that adjusting skeletal muscle mass for body mass index (SMM/BMI) could enhance the predictive accuracy for health outcomes. We aimed to validate the ESPEN/EASO criteria and explore the potential benefits of the SMM/BMI adjustment in predicting falls among older adults in Western China.

METHODS: We conducted a multicenter, cross-sectional study and included community-dwelling older adults. The diagnosis of SO was determined using the standard ESPEN/EASO consensus criteria (SO(ESPEN)) and a modified version adjusting SMM/BMI (SO(ESPEN-M)). The associations of SO(ESPEN), SO(ESPEN-M), and their components with falls were analyzed.

RESULTS: Among the 1353 participants, the prevalence of SO was 13.2 % (SO(ESPEN)) and 11.4 % (SO(ESPEN-M)), which increased with age and higher BMI levels. Within participants with a normal BMI, 4.2 % and 6.2 % were found to have SO(ESPEN) and SO(ESPEN-M), respectively. SMM/W and SMM/BMI negatively correlated with fall risk (p=0.042 and p=0.021, respectively). Upon adjusting for confounders, only SO(ESPEN) was significantly associated with falls (odds ratios [OR] 1.61, 95 % confidence interval [CI] 1.08 to 2.40), whereas the association for SO(ESPEN-M) did not achieve significance (OR 1.55, 95 % CI 0.99 to 2.43).

CONCLUSIONS: This research validated the ESPEN/EASO criteria (SO(ESPEN)) and their modified version (SO(ESPEN-M)) among community-dwelling older adults in Western China. The SMM/BMI adjustment appears to offer a lower estimate of SO prevalence, with only SO(ESPEN) showing a significant association with falls.

Physical decline, falls, and hospitalization among vulnerable older patients in the trajectory of colorectal cancer treatment

Lund CM, Nielsen DL, Schultz M, Dolin TG. J. Geriatr. Oncol. 2024; ePub(ePub): ePub.

Abstract

INTRODUCTION: Resilience to anticancer treatment for colorectal cancer (CRC) among older patients varies. Many experience weight loss, physical decline, falls, and hospitalization during treatment, often leading to early discontinuation of otherwise effective chemotherapy. Screening for vulnerability might help to identify patients at risk of these adverse outcomes in older adults.

MATERIALS AND METHODS: This is a secondary analysis from the GERICO trial. Patients aged ≥70 years assessed for chemotherapy for CRC were screened for eligibility for the GERICO trial with the geriatric-8 (G8) frailty screening tool. The present study population comprised patients who were (1) screened with G8 but for reasons not included in the GERICO study and (2) patients who were randomized to the GERICO control group. We evaluated whether patients identified as vulnerable with G8 (≤14/17) or retrospectively constructed mG8 (≥6/35) had higher risk of experiencing decline in performance status (PS), falls, and unplanned hospitalization during treatment. The association between frailty status and the adverse outcomes was analyzed with univariate and multivariate logistic regression. The discriminative ability of G8/mG8 to predict outcomes was analyzed using the area under the curve for receiver operating characteristics curves.

RESULTS: In total, 238 patients (median age 74 years [range 70-91]) were included in this analysis. More vulnerable than fit patients experienced decline in PS (G8: 41% vs. 14%, p = 0.006 and mG8: 28% vs. 17%, p = 0.04) during treatment. Furthermore, more vulnerable than fit patients experienced falls (G8 14% vs. 6% p = 0.04) and unplanned hospitalization (G8: 31% vs. 14%, p = 0.009 and mG8: 34% vs. 13%, p < 0.001). Multivariate analyses showed an association between G8 vulnerability and decline in PS, falls, and hospitalization.

DISCUSSION: Patients with G8 or mG8 vulnerability were more likely to experience decline in PS and unplanned hospitalization during chemotherapy for CRC than fit patients. More G8 vulnerable patients experienced falls compared with fit patients. Appropriate interventions should be offered to older patients with CRC assessed as vulnerable with G8 or mG8 to maintain PS during chemotherapy.

Language: en

Keywords: Vulnerability; Colorectal cancer; G8; mG8; Physical decline

Usefulness of the Kansas University Standing Balance Scale in inpatient rehabilitation: a retrospective validation study

Abstract

Adequate balance assessment is essential for designing rehabilitation programs and preventing falls. This study aimed to report the cross-cultural adaptation of the Korean version of the Kansas University Standing Balance Scale (KUSBS), investigate its concurrent and predictive validities, and examine aging-related differences. The adaptation was performed using a standard protocol. In this retrospective study, 1179 patients were included and classified into adult, young-old, old-old, and oldest-old groups. Furthermore, we compared the concurrent, discriminant, and predictive validities of the KUSBS and Berg Balance Scale (BBS). Nonparametric analysis was also conducted. The Spearman rho test revealed strong correlation coefficients between the KUSBS and BBS ($rs > 0.7$; $P < 0.001$). At admission, the relationship was strong in the adult, young-old, and old-old groups ($rs = 0.931, 0.913$, and 0.914, respectively; $P < 0.001$) but not the oldest-old group ($rs = 0.790$; $P < 0.001$). At discharge, the correlation coefficients were above 0.9 in all groups. Additionally, the relationship between the changes in both scales was moderate-to-strong ($rs > 0.68$; $P < 0.001$). The predictive validity for independent walking of the KUSBS was strong ($rs = 0.791$; $P < 0.001$) and significantly lower than that of the BBS ($rs = 0.833$; $P < 0.001$; $Z = -3.001$; $P = 0.003$). Furthermore, the cutoff value of the KUSBS at admission to predict independent ambulatory walkers at discharge was 3.5 in ordinal ranking in all age groups. The KUSBS is a reliable and effective tool for measuring balance in patients in inpatient rehabilitation.

Language: en

The relationship between fear of falling, quality of life, and basic and instrumental activities of daily living in elderly women: a cross-sectional study

Abstract

This study aimed to evaluate the relationship between fear of falling (FoF), quality of life (QoL), basic activities of daily living (ADL), and instrumental ADL in elderly women. In a cross-sectional study, 200 elderly women over 65 years old in Mashhad, Iran were included. The average physical activity of the participants was 11.10 (SD=7.39) hours per week. The mean of FoF, QoL, basic ADL, and instrumental ADL of elderly women was 32.19 (SD=10.28) out of 64, 29.57 (SD=7.36) out of 48, 12.76 (SD=2.06) out of 14, and 13.05 (SD=3.88) out of 18, respectively. There was a negative relationship between FoF and variables including QoL (r= -0.714, P<0.001), basic ADL (r= -0.591, P<0.001), and instrumental ADL (r= -0.535, P<0.001). There was a positive relationship between QoL and variables including basic ADL (r=0.607, P<0.001) and instrumental ADL (r=0.705, P<0.001). Also, there was a positive relationship between basic ADL and instrumental ADL (r=0.781, P<0.001). Overall, the outcomes of this study bear noteworthy implications for healthcare practitioners engaged in the care of elderly women. Through elucidating the associations among FoF, QoL, and ADL, healthcare providers can devise tailored interventions aimed at ameliorating these concerns and enhancing the holistic well-being of elderly female clientele.

Language: en

Relationship between social participation, children's support, and social frailty with falls among older adults in Colombia

Abstract

BACKGROUND: There is limited research on social factors related to falls among older adults. This study assessed the association between falls during the past year with social participation, children's support, relationship with children, and social frailty.

METHODS: Participants were 17,687 community-dwelling older adults from the SABE (Health, Well-being, and Aging, 2015) Colombia survey. Covariates included sociodemographic characteristics, environmental barriers, psychotropic intake, vision problems, memory loss, multimorbidity, and fear of falling.

RESULTS: In multivariate logistic regression analyses, being socially frail (vs. no-frail) was associated with higher odds of falls (OR=1.20; 95% confidence interval [CI], 1.10-1.32). Participating in groups (OR=1.07; 95% CI, 1.03-1.11), helping others (OR=1.04; 95% CI, 1.02-1.06), or volunteering (OR=1.09; 95% CI, 1.01-1.17) were also associated with higher odds of falls. These findings were partly explained because most group participants reside in cities where they are more exposed to environmental barriers. In contrast, receiving help, affection, and company from children (OR=0.95; 95% CI, 0.93-0.97) was associated with lower fall odds than not receiving it. Moreover, having a good relationship with children was associated with lower odds of falls (OR=0.75; 95% CI, 0.66-0.85) compared to an unsatisfactory relationship.

CONCLUSION: Support from children and having a good relationship with them were associated with fewer falls; however, social frailty and participation in social groups were associated with more falls.

Falls in people with mobility limitations: a cross-sectional analysis of a US registry of assistive device users

Morrow C, Schein R, Pramana G, McDonough C, Schmeler M. Disabil. Rehabil. Assist. Technol. 2024; ePub(ePub): ePub.

Abstract

PURPOSE of the Article: To (1) summarise the personal and clinical characteristics of persons with disabilities (PwDs) in the US who were evaluated for mobility assistive equipment (MAE) in the functional mobility assessment and uniform dataset (FMA/UDS) and (2) stratify subpopulations of PwD who reported falling versus those who do not report a fall.

MATERIALS AND METHODS: This study was a retrospective, descriptive cohort analysis of adults with disabilities using the FMA/UDS. Data are collected during a user's initial evaluation for a new mobility device. The sample is intentionally general to be inclusive of all mobility device users. The primary variable of interest was a patient-reported fall within the 3 months leading up to their evaluation for a new mobility device. Subpopulation characteristics were stratified by this binary fall variable.

RESULTS and Conclusions: This study provides descriptions of PwDs being evaluated for a new mobility device. There were 11,084 PwDs with 31 different primary diagnoses. During their new mobility device evaluation, 52.2% of PwDs reported at least one fall in the last 3 months. For those who reported a fall, 46.6% of PwDs were using a walking aid or no device at all before the new mobility device evaluation. Additionally, persons with progressively acquired disabilities (i.e., Parkinson's disease, osteoarthritis and cardiopulmonary disease) reported higher rates of falls than those with congenital disabilities (i.e., cerebral palsy and spina bifida). These findings will influence future studies comparing different types of devices and their influence on falls and user satisfaction.Implications for rehabilitation52.2% of persons with disabilities (PwDs) seeking a new wheelchair evaluation reported at least one fall in the last 3 months.Persons with progressively acquired disabilities (i.e., Parkinson's disease, osteoarthritis and cardiopulmonary disease) reported higher rates of falls than those with congenital disabilities (i.e., cerebral palsy and spina bifida).Earlier interventions for fall prevention including professional wheelchair evaluations may be warranted, but further research is necessary to explore long-term effectiveness.

The use of natural language processing for the identification of ageing syndromes including sarcopenia, frailty and falls in electronic healthcare records: a systematic review

Osman M, Cooper R, Sayer AA, Witham MD. Age Ageing 2024; 53(7): afae135.

Abstract

BACKGROUND: Recording and coding of ageing syndromes in hospital records is known to be suboptimal. Natural Language Processing algorithms may be useful to identify diagnoses in electronic healthcare records to improve the recording and coding of these ageing syndromes, but the feasibility and diagnostic accuracy of such algorithms are unclear.

METHODS: We conducted a systematic review according to a predefined protocol and in line with Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines. Searches were run from the inception of each database to the end of September 2023 in PubMed, Medline, Embase, CINAHL, ACM digital library, IEEE Xplore and Scopus. Eligible studies were identified via independent review of search results by two coauthors and data extracted from each study to identify the computational method, source of text, testing strategy and performance metrics. Data were synthesised narratively by ageing syndrome and computational method in line with the Studies Without Meta-analysis guidelines.

RESULTS: From 1030 titles screened, 22 studies were eligible for inclusion. One study focussed on identifying sarcopenia, one frailty, twelve falls, five delirium, five dementia and four incontinence. Sensitivity (57.1%-100%) of algorithms compared with a reference standard was reported in 20 studies, and specificity (84.0%-100%) was reported in only 12 studies. Study design quality was variable with results relevant to diagnostic accuracy not always reported, and few studies undertaking external validation of algorithms.

CONCLUSIONS: Current evidence suggests that Natural Language Processing algorithms can identify ageing syndromes in electronic health records. However, algorithms require testing in rigorously designed diagnostic accuracy studies with appropriate metrics reported.

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Exploring the effectiveness of emergency medical services becoming active in fall prevention: a literature review

Abstract

Falls, particularly among the elderly, are a prevalent and growing healthcare issue in the United States. Individuals who experience falls face heightened morbidity and mortality risks, along with substantial expenses associated with managing any resulting injuries. First responders frequently respond to 911 calls related to falls, with a significant portion of these cases not resulting in hospital or healthcare facility transfers. As such, many fall victims receive treatment without any preventive measures being implemented. The purpose of this review is to explore the current studies that examine whether Emergency Medical Service personnel can effectively act in fall prevention. While earlier studies present conflicting findings, recent research indicates the potential for preventive strategies that go beyond mere referrals.

Falls prevention in older people and the role of nursing

Abstract

Falls among older individuals pose a significant public health challenge globally, impacting both individual wellbeing and healthcare systems. This article examines the importance of falls prevention in older people and the pivotal role of nursing in this domain. It presents statistics indicating the high prevalence of falls among older adults, highlighting their substantial impact on morbidity, mortality and healthcare costs. Furthermore, it discusses the multifactorial nature of fall risk factors, including age-related changes, chronic health conditions, medication use, impaired mobility, sensory deficits and environmental hazards. Nursing interventions encompass comprehensive assessments, personalised care plans, patient education and advocacy efforts aimed at reducing fall risks and enhancing safety. By addressing intrinsic and extrinsic factors contributing to falls, nurses contribute significantly to improving the quality of life for older adults and reducing the economic burden associated with fall-related injuries.

A study on the falls factors among the older adult with cognitive impairment based on large-sample data

Wang C, Zhang Y, Wang J, Wan L, Li B, Ding H. Front. Public Health 2024; 12: e1376993.

Abstract

INTRODUCTION: This study explored the correlative factors of falls among the older adult with cognitive impairment, to provide distinct evidence for preventing falls in the older adult with cognitive impairment compared with the general older adult population.

METHODS: This study was based on a cross-sectional survey, with an older adult population of 124,124 was included. The data was sourced from the Elderly Care Unified Needs Assessment for Long-Term Care Insurance in Shanghai. Binary and multivariable logistic regression analyses were conducted sequentially on the correlative factors of falls. Multivariable logistic regression was performed on variables that were significant, stratified by cognitive function levels.

RESULTS: The incidence of fall in the past 90 days was 17.67% in this study. Specific variables such as gender (male), advanced age (≥80), residence with a elevator (or lift), mild or moderate disability, quality of sleep (acceptable/poor) were negatively correlated with falls, while higher education level, living alone, residence with indoor steps, unclean and untidy living environment, MCI or dementia, chronic diseases, restricted joints, impaired vision, and the use of diaper were positively correlative factors of falls. Comparing with older adult with normal cognitive functions, older adult with dementia faced a higher risk of falling due to accessibility barrier in the residence. For general older adults, less frequency of going outside and poor social interactions were positively correlated with falls, while for older adult with cognitive impairments, going outside moderately (sometimes) was found positively correlated with falls. Older adults with cognitive impairments have increased fall risks associated with chronic diseases, restricted joints, and the use of diaper. The risk of falling escalated with the greater number of chronic diseases.

DISCUSSION: For older adult with cognitive impairments, it is advisable to live with others. Additionally, creating an accessible living environment and maintaining the cleanness and tidiness can effectively reduce the risk of falls, particularly for those with MCI or dementia. Optimal outdoor activity plans should be developed separately based on the cognitive function of older adults. Older adult with dementia who have comorbidities should be paid special attention in fall prevention compared to the general older adult population.

*Accidental Falls/statistics & numerical data; *Cognitive Dysfunction/epidemiology; correlative factors; MCI