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Caring for older patients in the emergency department: health professionals' perspectives from Australia - The Safe Elderly Emergency Discharge project

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DOI 10.1111/1742-6723.13108 **PMID** 29797787

Abstract

OBJECTIVE: To explore health professionals' perspectives about caring for community-dwelling older patients in the ED.

METHODS: This exploratory qualitative study was undertaken with emergency nursing, medical and allied health staff from the ED of a large metropolitan public hospital in Melbourne. Nine focus groups (n = 54) and seven interviews were conducted between 2013 and 2014. Data were thematically analysed.

RESULTS: Health professionals described tailoring their approach when caring for older patients, including adopting a specific communication approach (i.e. increased voice volume, slower rate of speech). Caring for older patients was perceived as challenging given the need to balance the expectations of family members to deal with associated complex needs and limited time for transitional care planning in the ED. The environment and equipment were perceived as unsuitable, alongside a lack of geriatric-specific knowledge; contributing to what health professionals described as a poor fit between the ED system and older patients' needs.

CONCLUSION: The growing number of older patients presents numerous challenges for emergency health professionals and necessitates a tailored approach to care. Understanding health professionals' perspectives about caring for older patients can inform strategies that may improve the quality of care. Creating older person-friendly areas, improving transitional care and providing staff with specific education would foster an environment that promotes person-centred care, safety, independence and functional wellbeing.

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Dynamical properties of postural control in obese community-dwelling older adults

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Sensors (Basel) 2018; 18(6): s18061692.

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Abstract



Postural control is a key aspect in preventing falls. The aim of this study was to determine if obesity affected balance in community-dwelling older adults and serve as an indicator of fall risk. The participants were randomly assigned to receive a comprehensive geriatric assessment followed by a longitudinal assessment of their fall history. The standing postural balance was measured for 98 participants with a Body Mass Index (BMI) ranging from 18 to 63 kg/m², using a force plate and an inertial measurement unit affixed at the sternum. Participants' fall history was recorded over 2 years and participants with at least one fall in the prior year were classified as fallers. The results suggest that body weight/BMI is an additional risk factor for falling in elderly persons and may be an important marker for fall risk. The linear variables of postural analysis suggest that the obese fallers have significantly higher sway area and sway ranges, along with higher root mean square and standard deviation of time series. Additionally, it was found that obese fallers have lower complexity of anterior-posterior center of pressure time series. Future studies should examine more closely the combined effect of aging and obesity on dynamic balance.

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Evaluation of a community-based program that integrates joyful movement into fall prevention for older adults

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Gerontol. Geriatr. Med. 2018; 4: e2333721418776789.

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DOI 10.1177/2333721418776789 **PMID**29796405 **PMCID** PMC5960858

Abstract

Background: Despite the development of evidence-based fall-prevention programs, there remains a need for programming that will engage older adults in real-world settings.

Objective: This study aimed to evaluate a community-based group program that integrates joyful movement into fall prevention. The curriculum emphasizes a positive experience of movement, cultivating a healthy body image, and retraining of biomechanics.

Design: Program evaluation was conducted using a one-group pre-post test study design. Key outcomes were functional balance and confidence. Qualitative feedback was gathered at the final class sessions.

Results: Two hundred fifteen older adults enrolled at four sites over the period from 2010 to 2014. Among 86 participants who provided feedback, most credited the program for an increased sense of optimism and/or confidence (70%), and better walking ability (50%). Among 102 participants who completed both initial and final assessments, there was evidence of significant improvements on the Functional Reach Test ($d = .60$, $p < .001$) and Modified Falls Efficacy Scale ($d = .17$, $p < .001$).

Conclusion: A joyful movement curriculum is acceptable to older participants, and they show improvements in functional balance and confidence. Future research should examine whether the positive changes encouraged by joyful movement lead to lasting reductions in fall risk and additional health benefits.

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Evaluation of the reliability and validity for X16 balance testing scale for the elderly

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DOI 10.1186/s12877-018-0803-6 **PMID** 29807543

Abstract

BACKGROUND: Balance performance is considered as an indicator of functional status in the elderly, a large scale population screening and evaluation in the community context followed by proper interventions would be of great significance at public health level. However, there has been no suitable balance testing scale available for large scale studies in the unique community context of urban China.

METHODS: A balance scale named X16 balance testing scale was developed, which was composed of 3 domains and 16 items. A total of 1985 functionally independent and active community-dwelling elderly adults' balance abilities were tested using the X16 scale. The internal consistency, split-half reliability, content validity, construct validity, discriminant validity of X16 balance testing scale were evaluated.

RESULTS: Factor analysis was performed to identify alternative factor structure. The Eigenvalues of factors 1, 2, and 3 were 8.53, 1.79, and 1.21, respectively, and their cumulative contribution to the total variance reached 72.0%. These 3 factors mainly represented domains static balance, postural stability, and dynamic balance. The Cronbach alpha coefficient for the scale was 0.933. The Spearman correlation coefficients between items and its corresponding domains were ranged from 0.538 to 0.964. The correlation coefficients between each item and its corresponding domain were higher than the coefficients between this item and other domains. With the increase of age, the scores of balance performance, domains static balance, postural stability, and dynamic balance in the elderly declined gradually ($P < 0.001$). With the increase of age, the proportion of the elderly with intact balance performance decreased gradually ($P < 0.001$).

CONCLUSIONS: The reliability and validity of the X16 balance testing scale is both adequate and acceptable. Due to its simple and quick use features, it is practical to be used repeatedly and routinely especially in community setting and on large scale screening.

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Falls and long-term care: a report from the care by design observational cohort study

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DOI 10.1186/s12875-018-0741-6 **PMID** 29793427

Abstract

BACKGROUND: Falls and the resulting complications are common among frail older adults. We aimed to explore risk factors and potential prevention strategies for falls in elderly residents of Long-



Term Care Facilities (LTCF).

METHODS: This was a cross sectional study design using data from the Care by Design (CBD) study, within Nova Scotia's Capital District Health Authority. This observational time series cohort study collected data before, during and after the implementation of CBD, a new model of coordinated primary care in LTCF. Here, we analyzed data collected after the implementation of CBD (September 1, 2011- February 28, 2012).

RESULTS: Falls were frequent; 56.2% of our sample of 395 residents fell at least once. In univariate analyses, male gender ($p = 0.009$), dementia ($p = 0.005$), and use of Selective Serotonin Reuptake Inhibitors or Selective Serotonin-Norepinephrine Reuptake Inhibitors (SSRI/SNRI) ($p = 0.084$) showed statistically significant associations with having fallen. Benzodiazepine use appeared to be protective for falls ($p = 0.058$). In a fully adjusted multivariable linear regression model, dementia (β coefficient 0.96, 95% CI: 0.83,1.84; $p = 0.032$), visual impairment (β 0.84, 95% CI: 0.13,1.56; $p = 0.021$), and use of any PIMs (β 0.34, 95% CI: 0.037,0.65; $p = 0.028$) were associated with increased risk of having fallen. Benzodiazepine use remained associated with reduced numbers of falls ($p = 0.009$), and SSRI/SNRI use was associated with increased numbers of falls ($p = 0.007$). Male gender was associated with increased falls in the model which excluded frailty ($p = 0.022$), though gender lost statistical significance once frailty was added to the model ($p = 0.06$).

CONCLUSIONS: In our sample of LTCF residents, falls were common. Cognitive impairment, male gender, visual impairment, PIM use and use of SSRI/SNRI medications were associated with increased risk of falls, while benzodiazepine use appeared to be associated with a decreased risk of having fallen. Falls remain an important problem among LTC residents. Screening for falls during patient encounters is recommended, along with further research to identify risk factors and target interventions.

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Masticatory efficiency contributing to the improved dynamic postural balance: a cross-sectional study

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Gerodontology 2018; ePub(ePub): ePub.

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DOI 10.1111/ger.12349 **PMID** 29808520

Abstract

OBJECTIVE: To evaluate whether masticatory efficiency is associated with dynamic postural balance.

BACKGROUND: Masticatory dysfunction can cause deterioration of general health due to nutritional imbalances, thereby negatively affecting postural balance. However, few studies have investigated the association between masticatory efficiency and postural balance.

MATERIALS AND METHODS: The masticatory efficiency of 74 participants was evaluated by calculating mixing ability index (MAI) using a wax cube. The timed up and go test (TUGT) was used to measure dynamic balance. Participants with an MAI above or below the median value of 1.05 were defined as having high or low masticatory efficiency, respectively. An independent samples t-test was used to identify significant differences in TUGT, according to masticatory efficiency.

Analysis of covariance was performed to adjust for confounding factors. Logistic regression analysis was used to assess the correlation between masticatory efficiency and postural balance.

RESULTS: The high masticatory efficiency group could complete the TUGT exercise approximately 1.67 seconds faster while maintaining the postural balance, compared to the low masticatory efficiency group ($P = .005$). Furthermore, the postural imbalance odds of the group with high mastication efficiency decreased by 0.14-fold, relative to the group with low mastication efficiency (95% confidence interval: 0.04-0.46).

CONCLUSION: With some reservations about statistical power, the association found between masticatory efficiency and postural balance justifies further investigations to confirm the strength of the associations, and possibly to identify causal relationships between mastication and posture in old age.

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Prevalence of falls in adult and older adult psychiatric patients in China: a systematic review and comprehensive meta-analysis of observational studies

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Psychiatry Res. 2018; 266: 18-25.

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Abstract

Falls have significant health consequences and are common in psychiatric patients.

FINDINGS on the prevalence of falls in Chinese adult and older adult psychiatric inpatients have been inconsistent. This meta-analysis examined the pooled prevalence of falls in adult and older adult psychiatric inpatients in China. Both English (PubMed, EMBASE, Web of Science, PsycINFO, Cochrane Library) and Chinese (China National Knowledge Interne, WanFang Data and SinoMed) databases were searched independently by three reviewers. The pooled prevalence of falls and its 95% confidence intervals (CIs) using the random effects model were calculated. A total of 39 studies covering 204,234 inpatients were analyzed. The pooled prevalence of falls in adult and older adult (≥ 60 years) patients was 3% (95% CI: 1.8%-5%) and 7.3% (95%CI: 5.0%-10.6%), respectively.

Subgroup analyses revealed that the prevalence of falls was significantly associated with the psychiatric diagnostic criteria and study sample size. This meta-analysis found that the prevalence of falls among adult and older adult psychiatric patients in China was significantly high, although less than that was reported from Western psychiatric inpatient settings.

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Relationship between body mass index and static and dynamic balance in active and inactive older adults

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(Copyright © 2018, American Physical Therapy Association)

DOI 10.1519/JPT.000000000000195 **PMID** 29794886

Abstract

BACKGROUND AND PURPOSE: Although the association between higher body mass index and poorer balance has been observed in older adults, the role of physical activity in this relationship is not well established. This study aimed to provide scientific evidence about the relationship between body mass index and balance, taking into account the amount of physical activity performed as a confounding variable.

METHODS: We collated cross-sectional data from 160 community-dwelling older adults whom we divided into 3 body mass index categories: normal weight (≥ 18.50 - 24.99 kg/m), overweight (25.00 - 29.99 kg/m), and obese (≥ 30.00 - 34.99 kg/m). We classified the participants as inactive or active by means of the Yale Physical Activity Questionnaire. We carried out static and dynamic balance measurements by means of a force platform and through the performance of the Timed Up and Go test, respectively.

RESULTS: We found statistically significant correlations between static balance, dynamic balance, and body mass index in inactive normal ($r = 0.280$; $P = .035$; $r = 0.300$; $P = .031$) and inactive overweight ($r = 0.395$; $P = .025$; $r = 0.339$; $P = .023$) people. We observed moderately strong and fair significant correlations between static/dynamic balance and BMI in inactive ($r = .603$; $P = .028$; and $r = 0.720$; $P = .020$) and active ($r = 0.406$; $P = .037$; and $r = 0.378$; $P = .037$) obese people, respectively.

CONCLUSION: We conclude that the amount of physical activity performed is a potential contributing factor affecting the association between body mass index and balance in older persons. These findings could be of importance when identifying the main factors that influence postural control among older adults with obesity.

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Risk of dementia outcomes associated with traumatic brain injury during military service

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JAMA Neurol. 2018; ePub(ePub): ePub.

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(Copyright © 2018, American Medical Association)

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Abstract

The chronic effects of traumatic brain injury (TBI), particularly dementia and related neurodegenerative disorders in military veterans, have become an intense research focus. It has long been recognized that moderate to severe TBI in early life or midlife is associated with increased risk of late-life dementia. The association between severe TBI and dementia in civilians has relied on

epidemiology of patients with remote TBI and late-onset Alzheimer disease (AD) (usually after age 65 years) and other dementias. Epidemiologic studies have had mixed results of risk of developing dementia after mild TBI (mTBI). Earlier community-based and population-based studies found no increased association between mTBI with loss of consciousness (LOC) and late-onset dementia or AD. More recent studies have shown an association between TBI and earlier-onset dementia, suggesting an association between number and severity of head injuries and increasing dementia risk. Discordance across epidemiologic studies likely results from methodological differences as well as diagnostic uncertainty of both TBI and dementia, compounded by the current absence of validated clinical criteria for TBI-associated dementia.

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Social representation of elderly people on falls: structural analysis and in the light of Neuman

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Rev. Bras. Enferm. 2018; 71(Suppl 2): 851-859.

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DOI 10.1590/0034-7167-2017-0258 **PMID** 29791623

Abstract

OBJECTIVE: To understand the symbolic elements and the hierarchical system of representations of elderly people on falls, according to Abric's structural analysis and Neuman's theory.

METHOD: Abric structural approach developed at the home of primary care users in a city of Minas Gerais. A free evocation technique of images triggered by images was performed in 2016 with elderly individuals (≥ 65 years old). Data treated by dictionary of equivalent terms; processed in Evoc 2000 software converging, analytically, according to Neuman. Ethical/legal criteria were met.

RESULTS: 195 people participated, 78.5% were women, and 45.1% were aged ≥ 75 years.

Summarized 897 words; 155 different ones. Central nucleus containing cognates: dizziness-vertigo-labyrinthitis and slipper-shoes (behavioral and objective dimension). The word disease integrated the area of contrast. Environmental and personal stressors were identified according to Neuman. Final considerations: Objects and risk behaviors for falls integrated the representations, although environmental and personal stressors indicate the need for preventive interventions in the environment and in the intrapersonal dimension.

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Tai chi for reducing dual-task gait variability, a potential mediator of fall risk in Parkinson's disease: a pilot randomized controlled trial

Vergara-Diaz G, Osypiuk K, Hausdorff JM, Bonato P, Gow BJ, Miranda JG, Sudarsky LR, Tarsy D, Fox MD, Gardiner P, Thomas CA, Macklin EA, Wayne PM.

Glob. Adv. Health Med. 2018; 7: e2164956118775385.

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(Copyright © 2018, GAHM)

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Abstract



OBJECTIVES: To assess the feasibility and inform design features of a fully powered randomized controlled trial (RCT) evaluating the effects of Tai Chi (TC) in Parkinson's disease (PD) and to select outcomes most responsive to TC assessed during off-medication states.

DESIGN: Two-arm, wait-list controlled RCT.

SETTINGS: Tertiary care hospital.

SUBJECTS: Thirty-two subjects aged 40-75 diagnosed with idiopathic PD within 10 years.

INTERVENTIONS: Six-month TC intervention added to usual care (UC) versus UC alone.

OUTCOME MEASURES: Primary outcomes were feasibility-related (recruitment rate, adherence, and compliance). Change in dual-task (DT) gait stride-time variability (STV) from baseline to 6 months was defined, a priori, as the clinical outcome measure of primary interest. Other outcomes included: PD motor symptom progression (Unified Parkinson's Disease Rating Scale [UPDRS]), PD-related quality of life (PDQ-39), executive function (Trail Making Test), balance confidence (Activity-Specific Balance Confidence Scale, ABC), and Timed Up and Go test (TUG). All clinical assessments were made in the off-state for PD medications.

RESULTS: Thirty-two subjects were enrolled into 3 sequential cohorts over 417 days at an average rate of 0.08 subjects per day. Seventy-five percent (12/16) in the TC group vs 94% (15/16) in the UC group completed the primary 6-month follow-up assessment. Mean TC exposure hours overall: 52. No AEs occurred during or as a direct result of TC exercise. Statistically nonsignificant improvements were observed in the TC group at 6 months in DT gait STV (TC [20.1%] vs UC [-0.1%] group [effect size 0.49; $P = .47$]), ABC, TUG, and PDQ-39. UPDRS progression was modest and very similar in TC and UC groups.

CONCLUSIONS: Conducting an RCT of TC for PD is feasible, though measures to improve recruitment and adherence rates are needed. DT gait STV is a sensitive and logical outcome for evaluating the combined cognitive-motor effects of TC in PD.

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Temporal analysis of the functional status of older people in the state of Paraíba, Brazil

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Rev. Bras. Enferm. 2018; 71(Suppl 2): 905-911.

Affiliation: Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil.

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DOI 10.1590/0034-7167-2017-0130 **PMID** 29791644

Abstract

OBJECTIVE: To verify the profile and the functional status of older people living in the state of Paraíba, Brazil, from a temporal perspective.

METHOD: This was a descriptive study with secondary analysis of data from the Health Indicator and Aging Policy Monitoring system (SISAP-Idoso - Sistema de Indicadores de Saúde e Acompanhamento de Políticas do Idoso) between 2000 and 2010.

RESULTS: Over the analyzed period, there was a growth of older women, people older than 85 years, residents of urban areas, older people who live alone and who are not responsible for the household. There was also a decrease of illiterate older people, with monthly income of up to one minimum wage and in poverty situations. Concerning the functional status, the proportion of older people who reported any permanent mental, motor, visual or hearing disabilities has increased.

CONCLUSION: We suggest that the assistance must be directed towards environmental variables that can influence the functional state, such as illiteracy, low income and disabilities that contribute to the weakening of older people and must be overcome.

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The cumulative complexity model and repeat falls: a quality improvement project

Stevenson CW, Leis MM.

Prof. Case Manag. 2018; 23(4): 190-203.

Affiliation: Carl W. Stevenson, BSN, RN, has 25 years of experience as an RN in cardiac care, medical-surgical nursing, and quality improvement through participation in local and national VA committees. He has been conducting research with patients who have congestive heart failure, falls, and sepsis for the past 8 years. Meghan M. Leis, BSN, RN, has 4 years of experience as an RN in medical-surgical nursing. She has served on unit-level quality improvement projects for patient falls and pressure ulcers for the past 2 years. She is interested in improving the care of our veterans. (Copyright © 2018, Lippincott Williams and Wilkins)

DOI 10.1097/NCM.0000000000000279 **PMID** 29846349

Abstract

PURPOSE OF PROJECT: The purpose of this article is to demonstrate the effectiveness of the Cumulative Complexity Model as a framework to build an Excel tool and a Pareto tool that will enable inpatient case managers to predict the increased risk for and prevent repeat falls. The Excel tool is based on work explained in a previous article by and uses a macro to analyze the factors causing the repeat falls and then calculate the probability of it happening again. This enables the case manager to identify trends in how the patient is transitioning toward goals of care and identify problems before they become barriers to the smooth transition to other levels of care. Thus, the case manager will save the facility money by avoiding unneeded days of care and avoiding the costs that result from rendering medical care for the patient who has fallen.

PRIMARY PRACTICE SETTINGS: In July 2015, a group of nurses at a small Veterans Health Administration Hospital in the Northwest collaborated to find ways to reverse a trend of increasing falls and repeat falls.

METHODOLOGY AND SAMPLE: A retrospective chart review of all falls and repeat falls (N = 73) that happened between January 2013 and July 2015 was used to generate a list of top 11 contributing variables that enabled evaluation of the data. A bundle of 3 interventions was instituted in October 2015: (1) development of a dedicated charge nurse/resource nurse, (2) use of a standardized method of rounding, and (3) use of a noncontact patient monitoring system ("virtual nurses"). Falls pre- and postimplementation (N = 109) were analyzed using linear and logistic regression analyses. Data were entered into an Excel sheet and analyzed to identify the major contributing factors to falls and repeat falls and to identify trends. These data were also evaluated to find out whether length of stay and nurse workload contributed to falls.

RESULTS: Fifteen months after implementation of the aforementioned interventions, falls on the unit went down from 30 aggregate falls in 2015 to 17 aggregate falls in 2016. Repeat falls in 2015 went from 9 repeat falls after admission to the unit down to 2 repeat falls in 2016. Each additional extrinsic variable that was present added an additional 1.43 to the odds ratio (OR) for a fall. Similarly, each additional intrinsic variable present added 2.08 to the OR for a fall. The linear

regression of length of stay and falls demonstrated that 17.5% of falls correlated with length of stay, $F(1,36) = 7.63$, $p = .009$, $R = .175$, adjusted $R = .152$. Workload correlated with work 17% of the time, as measured by using ward days of care, $F(1,100) = 20.84$, $p = .00001$, $R = .17$, adjusted $R = .16$.

IMPLICATIONS FOR CASE MANAGERS: Two examples of the how to use these tools are located in the "Discussion" section of the article.

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The cumulative complexity model and repeat falls: a quality improvement project (comment)

Prof. Case Manag. 2018; 23(4): E3-E4.

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Abstract [Abstract unavailable]

PDF N Endnote Y

Traumatic brain injury history and progression from mild cognitive impairment to Alzheimer disease

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Neuropsychology 2018; 32(4): 401-409.

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(Copyright © 2018, American Psychological Association)

DOI 10.1037/neu0000431 PMID 29809031

Abstract

OBJECTIVE: To examine whether history of traumatic brain injury (TBI) is associated with more rapid progression from mild cognitive impairment (MCI) to Alzheimer's disease (AD).

METHOD: Data from 2,719 subjects with MCI were obtained from the National Alzheimer's Coordinating Center. TBI was categorized based on presence (TBI+) or absence (TBI-) of reported TBI with loss of consciousness (LOC) without chronic deficit occurring >1 year prior to diagnosis of MCI. Survival analyses were used to determine if a history of TBI predicted progression from MCI to AD up to 8 years. Random regression models were used to examine whether TBI history also predicted rate of decline on the Clinical Dementia Rating scale Sum of Boxes score (CDR-SB) among subjects who progress to AD.

RESULTS: Across 8 years, TBI history was not significantly associated with progression from MCI to a diagnosis of AD in unadjusted (HR = 0.80; 95% CI [0.63, 1.01]; $p = .06$) and adjusted ($p = .15$) models. Similarly, a history of TBI was a nonsignificant predictor for rate of decline on CDR-SB among subjects who progressed to AD ($b = 0.15$, $p = .38$). MCI was, however, diagnosed a mean of 2.6 years earlier ($p < .001$) in TBI+ subjects compared with the TBI- group.

CONCLUSIONS: A history of TBI with LOC was not associated with progression from MCI to AD, but was linked to an earlier age of MCI diagnosis. These findings add to a growing literature suggesting that TBI might reduce the threshold for onset of MCI and certain neurodegenerative conditions, but appears unrelated to progression from MCI to AD. (PsycINFO Database Record (c) 2018 APA, all rights reserved).

PDF N Endnote Y

Validation of the Falls Efficacy Scale - International in a sample of Portuguese elderly

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Rev. Bras. Enferm. 2018; 71(Suppl 2): 747-754.

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DOI 10.1590/0034-7167-2017-0497 **PMID** 29791628

Abstract

OBJECTIVE: to translate and adapt Falls Efficacy Scale - International (FES-I). To analyze the psychometric properties of the FES-I Portugal version.

METHOD: psychometric study. Sample consisting of 170 elderly people residing in the Autonomous Region of Madeira. A two- part form was used (sociodemographic characterization and FES-I Portugal). The cross-cultural adaptation was performed and the following psychometric properties were evaluated: validity (construct, predictive, and discriminant), reliability (Cronbach's alpha), and inter-rater reliability.

RESULTS: the results allow us to verify a dimension of less demanding physical activities and another of more demanding physical activities. The inter-rater reliability study was 0.62, with an interclass correlation coefficient of 0.859, for a 95% confidence interval. The internal consistency of the Portuguese version was 0.962.

CONCLUSION: the validity and reliability of the FES-I Portugal are consistent with the original version and proved to be appropriate instruments for evaluating the "impaired walking" and "risk of falls" nursing diagnoses in the older people.

PDF Y Endnote Y

Web-based telepresence exercise program for community-dwelling elderly women with a high risk of falling: randomized controlled trial

Hong J, Kong HJ, Yoon HJ.

JMIR Mhealth Uhealth 2018; 6(5): e132.

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(Copyright © 2018, JMIR Publications)

DOI 10.2196/mhealth.9563 **PMID** 29807877

Abstract

BACKGROUND: While physical exercise is known to help prevent falls in the elderly, bad weather and long distance between the home and place of exercise represent substantial deterrents for the elderly to join or continue attending exercise programs outside their residence. Conventional modalities for home exercise can be helpful but do not offer direct and prompt feedback to the participant, which minimizes the benefit.

OBJECTIVE: We aimed to develop an elderly-friendly telepresence exercise platform and to evaluate the effects of a 12-week telepresence exercise program on fall-related risk factors in community-dwelling elderly women with a high risk of falling.

METHODS: In total, 34 women aged 68-91 years with Fall Risk Assessment scores >14 and no medical contraindication to physical training-based therapy were recruited in person from a senior

citizen center. The telepresence exercise platform included a 15-inch tablet computer, custom-made peer-to-peer video conferencing server system, and broadband Internet connectivity. The Web-based program included supervised resistance exercises performed using elastic resistance bands and balance exercise for 20-40 minutes a day, three times a week, for 12 weeks. During the telepresence exercise session, each participant in the intervention group was supervised remotely by a specialized instructor who provided feedback in real time. The women in the control group maintained their lifestyle without any intervention. Fall-related physical factors (body composition and physical function parameters) and psychological factors (Korean Falls Efficacy Scale score, Fear of Falling Questionnaire score) before and after the 12-week interventional period were examined in person by an exercise specialist blinded to the group allocation scheme.

RESULTS: Of the 30 women enrolled, 23 completed the study. Compared to women in the control group (n=13), those in the intervention group (n=10) showed significant improvements on the scores for the chair stand test (95% confidence interval -10.45 to -5.94, $P<.001$), Berg Balance Scale (95% confidence interval -2.31 to -0.28, $P=.02$), and Fear of Falling Questionnaire (95% confidence interval 0.69-3.5, $P=.01$).

CONCLUSIONS: The telepresence exercise program had positive effects on fall-related risk factors in community-dwelling elderly women with a high risk of falling. Elderly-friendly telepresence technology for home-based exercises can serve as an effective intervention to improve fall-related physical and psychological factors. **TRIAL REGISTRATION:** Clinical Research Information Service KCT0002710; https://cris.nih.go.kr/cris/en/search/search_result_st01.jsp?seq=11246 (Archived by WebCite at <http://www.webcitation.org/6zdSUEsmb>).

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PDF Y Endnote Y

What is this thing called injury prevention?

McClure RJ.

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PMID 29794030

Abstract

I ask this, not as a rhetorical question, but a sincere one. There is a distinguished history of the self-conscious search for an identity statement for 'injury'. A codified set of descriptors from WHO's International Statistical Classification of Disease and Related Health Problems (ICD) is generally used as injury's manifestational definition. Several common, but not universal, definitions are available to categorise the necessary additional dimension of severity. Haddon's seminal work explaining the role of energy as agent in an epidemiological model of injury causation is now concreted into injury's conceptual, aetiological definition. Has there been a similar search for the identity of 'injury prevention'?

Using language that is essentially manifestational, injury prevention is frequently described as the process of intervening in the causation of injury in a ...

PDF Y Endnote Y**Accurate fall detection in a top view privacy preserving configuration**

Ricciuti M, Spinsante S, Gambi E.

Sensors (Basel) 2018; 18(6): s18061754.

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(Copyright © 2018, Multidisciplinary Digital Publishing Institute)

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Abstract

Fall detection is one of the most investigated themes in the research on assistive solutions for aged people. In particular, a false-alarm-free discrimination between falls and non-falls is indispensable, especially to assist elderly people living alone. Current technological solutions designed to monitor several types of activities in indoor environments can guarantee absolute privacy to the people that decide to rely on them. Devices integrating RGB and depth cameras, such as the Microsoft Kinect, can ensure privacy and anonymity, since the depth information is considered to extract only meaningful information from video streams. In this paper, we propose an accurate fall detection method investigating the depth frames of the human body using a single device in a top-view configuration, with the subjects located under the device inside a room. Features extracted from depth frames train a classifier based on a binary support vector machine learning algorithm. The dataset includes 32 falls and 8 activities considered for comparison, for a total of 800 sequences performed by 20 adults. The system showed an accuracy of 98.6% and only one false positive.

PDF Y Endnote Y**Long-term incidence of serious fall-related injuries after bariatric surgery in Swedish obese subjects**

Carlsson LMS, Sjöholm K, Ahlin S, Jacobson P, Andersson-Assarsson JC, Karlsson Lindahl L, Maglio C, Karlsson C, Hjorth S, Taube M, Carlsson B, Svensson PA, Peltonen M.

Int. J. Obes. (NPG) 2018; ePub(ePub): ePub.

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(Copyright © 2018, International Association for the Study of Obesity, Publisher Nature Publishing Group)

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Abstract

Obesity increases risk of falling, but the effect of bariatric surgery on fall-related injuries is unknown. The aim of this study was therefore to study the association between bariatric surgery and long-term incidence of fall-related injuries in the prospective, controlled Swedish Obese Subjects study. At inclusion, body mass index was ≥ 34 kg/m² in men and ≥ 38 kg/m² in women. The surgery per-protocol group (n = 2007) underwent gastric bypass (n = 266), banding (n = 376), or vertical banded gastroplasty (n = 1365), and controls (n = 2040) received usual care. At the time of analysis (31 December 2013), median follow-up was 19 years (maximal 26 years). Fall-related injuries requiring hospital treatment were captured using data from the Swedish National Patient Register. During follow-up, there were 617 first-time fall-related injuries in the surgery group and 513 in the control

group (adjusted hazard ratio 1.21, 95% CI, 1.07-1.36; $P = 0.002$). The incidence differed between treatment groups ($P < 0.001$, log-rank test) and was higher after gastric bypass than after usual care, banding and vertical banded gastroplasty (adjusted hazard ratio 0.50-0.52, $P < 0.001$ for all three comparisons). In conclusion, gastric bypass surgery was associated with increased risk of serious fall-related injury requiring hospital treatment.

PDF Y Endnote Y

Predictors of falls and fractures leading to hospitalization in people with schizophrenia spectrum disorder: a large representative cohort study

Stubbs B, Mueller C, Gaughran F, Lally J, Vancampfort D, Lamb SE, Koyanagi A, Sharma S, Stewart R, Perera G.

Schizophr. Res. 2018; ePub(ePub): ePub.

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(Copyright © 2018, Elsevier Publishing)

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Abstract

AIM: To investigate predictors of falls/fractures leading to hospitalisation in people with schizophrenia-spectrum disorders.

METHODS: A historical cohort of people with schizophrenia-spectrum disorders (ICD F20-29) from 01/2006-12/2012 was assembled using data from the South London and Maudsley NHS Biomedical Research Centre Case Register. Falls/fractures were ascertained from a linkage to national hospitalisation data. Separate multivariate Cox regression analyses were employed to identify predictors of falls and fractures.

RESULTS: Of 11,567 people with schizophrenia-spectrum disorders (mean age 42.6 years, 43% female), 579 (incidence rate 12.79 per 1000 person-years) and 528 (11.65 per 1000 person-years) had at least one reported hospital admission due to a fall or fracture respectively and 822 patients had at least either a recorded fall or a fracture during this period (i.e. 7.1% of sample). Overall, 6.69 and 10.74 years of inpatient hospital stay per 1000-person years of follow-up occurred due to a fall and fracture respectively. 14(0.12%) and 28(0.24%) died due to a fall and fracture respectively. In Multivariable analysis, increasing age, white ethnicity, analgesics, cardiovascular disease, hypertension, diseases of the genitourinary system, visual disturbance and syncope were significant risk factor for both falls and fractures. A previous fracture (HR 2.05, 95% CI 1.53-2.73) and osteoporosis (HR 6.79, 95% CI 4.71-9.78) were strong risk factors for consequent fractures.

CONCLUSION: Comorbid physical health conditions and analgesic medication prescription were associated with higher risk of falls and fractures. Osteoporosis and previous fracture were strong predictors for subsequent fractures. Interventions targeting bone health and falls/fractures need to be developed and evaluated in these populations.

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Silent slips, trips and broken hips in the under 60s: a review of the literature

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(Copyright © 2018, Elsevier Publishing)

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Abstract

This critical review of the literature regarding the recovery experiences and healthcare needs of people under 60 following a fragility hip fracture seeks to identify the associated implications for nursing practice and inform care delivery. Forty papers were included following a structured database, citation and grey literature search and filtering of results in line with specified inclusion criteria. Hip fracture is a common, serious and complex injury and an important cause of morbidity, mortality and rising healthcare costs worldwide. This review indicates that although commonly associated with the elderly, incidence and impact in the under 60s has been under-explored. Current health policy, professional and social norms almost exclusively focus on the elderly, surgical interventions and short-term outcomes, rendering the under 60s an inadvertently marginalised, relatively 'silent' sub-set of the hip fracture population. Nurses must be aware, however, of the different recovery needs of this younger group. The limited evidence available indicates these include work related needs and long term physical and psychosocial limitations in this socially and economically active group. Priorities are identified for research to inform policy and practice. Meanwhile, nurses can address the needs of this group by listening to and involving them and their families as healthcare partners.

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The trail making test: a study of its ability to predict falls in the acute neurological in-patient population

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(Copyright © 2018, Sage Publications)

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Abstract

OBJECTIVE: To determine whether tests of cognitive function and patient-reported outcome measures of motor function can be used to create a machine learning-based predictive tool for falls.

DESIGN: Prospective cohort study.

SETTING: Tertiary neurological and neurosurgical center.

SUBJECTS: In all, 337 in-patients receiving neurosurgical, neurological, or neurorehabilitation-based care.

MAIN MEASURES: Binary (Y/N) for falling during the in-patient episode, the Trail Making Test (a measure of attention and executive function) and the Walk-12 (a patient-reported measure of physical function).



RESULTS: The principal outcome was a fall during the in-patient stay (n = 54). The Trail test was identified as the best predictor of falls. Moreover, addition of other variables, did not improve the prediction (Wilcoxon signed-rank $P < 0.001$). Classical linear statistical modeling methods were then compared with more recent machine learning based strategies, for example, random forests, neural networks, support vector machines. The random forest was the best modeling strategy when utilizing just the Trail Making Test data (Wilcoxon signed-rank $P < 0.001$) with 68% (± 7.7) sensitivity, and 90% (± 2.3) specificity.

CONCLUSION: This study identifies a simple yet powerful machine learning (Random Forest) based predictive model for an in-patient neurological population, utilizing a single neuropsychological test of cognitive function, the Trail Making test.

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