

Safety Literature 26th October 2021

Association between sarcopenia, physical performance and falls in patients with rheumatoid arthritis: a 1-year prospective study

Wiegmann S, Armbrecht G, Borucki D, Buehring B, Buttgerit F, Detzer C, Schaumburg D, Zeiner KN, Dietzel R. BMC Musculoskelet. Disord. 2021; 22(1): e885.

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DOI 10.1186/s12891-021-04605-x PMID 34663280

Abstract

BACKGROUND: Patients with rheumatoid arthritis (RA) are at increased risk of falls and fractures. Sarcopenia occurs more frequently in RA patients due to the inflammatory processes. Early diagnosis and prevention programmes are essential to avoid serious complications. The present study aims to identify risk factors for falls related to sarcopenia and physical performance.

METHODS: In a 1-year prospective study, a total of 289 patients with RA, ages 24-85 years, were followed using quarterly fall diaries to report falls. At the baseline, medical data such as RA disease duration and Disease Activity Score (DAS28(CRP)) were collected. Self-reported disability was assessed using the Health Assessment Questionnaire (HAQ). Appendicular skeletal mass was determined by Dual X-ray-Absorptiometry (DXA). Physical performance was evaluated by handgrip strength, gait speed, chair rise test, Short Physical Performance Battery, and FICSIT-4. Muscle mechanography was measured with the Leonardo Mechanograph®. Sarcopenia was assessed according to established definitions by the European Working Group on Sarcopenia in Older People (EWGSOP2) and The Foundation for the National Institutes of Health (FNIH). Univariate and multiple logistic regression analysis were used to explore associations with falling. Receiver-operating characteristics (ROC) were performed, and the area under the curve is reported.

RESULTS: A total of 238 subjects with RA completed the 1-year follow-up, 48 (20.2%) experienced at least one fall during the observational period. No association was found between sarcopenia and prospective falls. Age (OR = 1.04, CI 1.01-1.07), HAQ (OR = 1.62, 1.1-2.38), and low FICSIT-4 score (OR = 2.38, 1.13-5.0) showed significant associations with falls.

CONCLUSIONS: In clinical practice, a fall assessment including age, self-reported activities of daily life and a physical performance measure can identify RA patients at risk of falling.

TRIAL REGISTRATION: The study has been registered at the German Clinical Trials Register and the WHO International Clinical Trials Registry Platform (ICTRP) since 16 March 2017 (DRKS00011873).

Language: en

Keywords

Risk factor; Sarcopenia; Balance; Fall; FICSIT; HAQ; Mechanography; Physical performance; Rheumatoid arthritis; SPPB

Body shape, fear of falling, physical performance, and falls among individuals aged 55 years and above

Kioh SH, Mat S, Kamaruzzaman SB, Ibrahim F, Mokhtar MS, Hairi NN, Cumming RG, Myint PK, Tan MP. *Eur. Geriatr. Med.* 2019; 10(5): 801-808.

(Copyright © 2019, Elsevier Publishing)

DOI 10.1007/s41999-019-00220-1 **PMID** 34652702

Abstract

PURPOSE: To evaluate the relationship between waist-to-hip ratio (WHR) and fall-related outcomes in community-dwelling individuals aged 55 and above.

METHODS: Cross-sectional data obtained from the first wave of the Malaysian Elders Longitudinal Research (MELoR) study were utilized for this study. Participants aged 55 years and over were recruited using simple random sampling from the electoral rolls of three local parliamentary constituencies. Socio-demographics, falls history and medical history were obtained through home-based computer-assisted interviews while anthropometric measurements, including WHR, and physical performance were obtained during hospital-based health checks. WHR was categorized into three arbitrary categories stratified by gender.

RESULTS: Data on both falls and WHR were available for 1335 participants, mean age \pm standard deviation (SD) = 68.4 \pm 7.1 years. Logistic regression analyses using dummy variables revealed that individuals within the higher WHR group were significantly more likely to report a history of fall in the preceding 12 months {adjusted odds ratio (aOR) [95% confidence interval (CI)] = 1.78 (1.18-2.67)}, fear of falling [aOR (95% CI) = 1.58 (1.08-2.32)], impaired timed-up-and-go [2.14 (1.44-3.17)] and reduced functional reach [1.68 (1.18-2.38)] compared to those with lower WHR. A higher WHR remained independently associated with increased risk of falls compared to those with lower WHR after additional adjustment for fear of falling and functional performance.

CONCLUSION: Our finding suggests WHR as an independent risk factor for higher risk of fall which may indicate body shape as a potentially modifiable risk factor for falls in adults in aged 55 years and over.

Language: en

Keywords

Aged; Accidental falls; Obesity; Hip circumference; Waist circumference

Change in central nervous system-active medication use following fall-related injury in older adults

Hart LA, Walker R, Phelan EA, Marcum ZA, Schwartz NRM, Crane PK, Larson EB, Gray SL. *J. Am. Geriatr. Soc.* 2021; ePub(ePub): ePub.

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Abstract

BACKGROUND: Central nervous system (CNS)-active medication use is an important modifiable risk factor for falls in older adults. A fall-related injury should prompt providers to evaluate and reduce CNS-active medications to prevent recurrent falls. We evaluated change in CNS-active medications up to 12 months following a fall-related injury in community-dwelling older adults compared with a matched cohort without fall-related injury.

METHODS: Participants were from the Adult Changes in Thought study conducted at Kaiser Permanente Washington. Fall-related injury codes between 1994 and 2014 defined index encounters in participants with no evidence of such injuries in the preceding year. We matched each fall-related injury index encounter with up to five randomly selected clinical encounters from participants without injury. Using automated pharmacy data, we estimated the average change in CNS-active medication use at 3, 6, and 12 months post-index according to the presence or absence of CNS-active medication use before index.

RESULTS: One thousand five hundred sixteen participants with fall-related injury index encounters (449 CNS-active users, 1067 nonusers) were matched to 7014 index encounters from people without fall-related injuries (1751 users, 5236 nonusers). Among CNS-active users at the index encounter, those with fall-related injury had an average decrease in standard daily doses (SDDs) at 12 months (-0.43; 95% CI: -0.63 to -0.23), and those without injury had a greater ($p = 0.047$) average decrease (-0.66; 95% CI: -0.78 to -0.55). Among nonusers at index, those with fall-related injury had a smaller increase than those without injury (+0.17, 95% CI: +0.13 to +0.21, vs. +0.24, 95% CI: +0.20 to +0.28, $p = 0.005$).

CONCLUSIONS: The differences in CNS-active medication use change over 12 months between those with and without fall-related injury were small and unlikely to be clinically significant. These results suggest that fall risk-increasing drug use is not reduced following a fall-related injury, thus opportunities exist to reduce CNS-active medications, a potentially modifiable risk factor for falls.

Language: en

Keywords

older adults; fall-related injury; medications

Effect of baduanjin on the fall and balance function in middle-aged and elderly people: a protocol for systematic review and meta-analysis

Xiao Y, Luo Q, Yu Y, Cao B, Wu M, Luo Y, Zhao Y, Zhou J. *Medicine (Baltimore)* 2021; 100(37): e27250.

(Copyright © 2021, Lippincott Williams and Wilkins)

DOI 10.1097/MD.00000000000027250 **PMID** 34664870

Abstract

BACKGROUND: The risk of fall seriously affects the health and quality of life of the middle-aged and elderly people, especially the injury and disability caused by fall of the middle-aged and elderly people, which imposes a huge burden on family and social medical care. Baduanjin exercise may be an effective intervention to enhance the muscle strength and stability of lower limbs, improve the balance ability and gait of middle-aged and elderly people, reduce the incidence of falls, improve the quality of life, and promote the health of middle-aged and elderly people. The aim of this study is to summarize evidence and systematically review the efficacy and safety of Baduanjin on the fall and balance function in middle-aged and elderly people.

METHODS: We conducted a systematic search of English and Chinese RCTs in the following 8 electronic databases: PubMed, EMBASE, Web of Science, The Cochrane Library, Chinese Biomedical Literature Database (CBM), Chinese National Knowledge Infrastructure (CNKI), Chinese Science and Technology Periodical Database (VIP), Wanfang Database, from their respective dates of inception to July 2021. Other resources will be searched if necessary. The primary outcome is the fall rate in middle-aged and elderly people and the secondary outcomes include the Single-Leg Standing (SLS) Test, Berg Balance Scale (BBS), Timed Up and Go (TUG) Test. The study selection, data extraction, risk of bias, data synthesis and analysis, reporting biases, and the quality of evidence will be independently conducted by 2 reviewers who use the EndNote X9 software, Cochrane handbook assessment tool, RevMan 5.3 software, a funnel plot and GRADE system.

RESULTS: This study will evaluate the effect of Baduanjin on falls and balance function of middle-aged and elderly people from multiple outcome evaluation indicators such as fall rate, and provide high-quality evidence.

CONCLUSION: This study will provide evidence for whether Baduanjin has an effect on falls and balance function in middle-aged and elderly people. **ETHICS AND**

DISSEMINATION: Ethics approval is not required for systematic review, since it does not infringe on personal interests. The results will be submitted to peer-review journals or disseminated at scientific conferences.

Language: en

Effect of dietary sources of calcium and protein on hip fractures and falls in older adults in residential care: cluster randomised controlled trial

Iuliano S, Poon S, Robbins J, Bui M, Wang X, de Groot L, Van Loan M, Zadeh AG, Nguyen T, Seeman E. *BMJ* 2021; 375: n2364.

(Copyright © 2021, BMJ Publishing Group)

DOI 10.1136/bmj.n2364 **PMID** 34670754

Abstract

OBJECTIVE: To assess the antifracture efficacy and safety of a nutritional intervention in institutionalised older adults replete in vitamin D but with mean intakes of 600 mg/day calcium and <1 g/kg body weight protein/day.

DESIGN: Two year cluster randomised controlled trial. **SETTING:** 60 accredited residential aged care facilities in Australia housing predominantly ambulant residents. **PARTICIPANTS:** 7195 permanent residents (4920 (68%) female; mean age 86.0 (SD 8.2) years).

INTERVENTION: Facilities were stratified by location and organisation, with 30 facilities randomised to provide residents with additional milk, yoghurt, and cheese that contained 562 (166) mg/day calcium and 12 (6) g/day protein achieving a total intake of 1142 (353) mg calcium/day and 69 (15) g/day protein (1.1 g/kg body weight). The 30 control facilities maintained their usual menus, with residents consuming 700 (247) mg/day calcium and 58 (14) g/day protein (0.9 g/kg body weight). **MAIN OUTCOME MEASURES:** Group differences in incidence of fractures, falls, and all cause mortality.

RESULTS: Data from 27 intervention facilities and 29 control facilities were analysed. A total of 324 fractures (135 hip fractures), 4302 falls, and 1974 deaths were observed. The intervention was associated with risk reductions of 33% for all fractures (121 v 203; hazard ratio 0.67, 95% confidence interval 0.48 to 0.93; $P=0.02$), 46% for hip fractures (42 v 93; 0.54, 0.35 to 0.83; $P=0.005$), and 11% for falls (1879 v 2423; 0.89, 0.78 to 0.98; $P=0.04$). The risk reduction for hip fractures and falls achieved significance at five months ($P=0.02$) and three months ($P=0.004$), respectively. Mortality was unchanged (900 v 1074; hazard ratio 1.01, 0.43 to 3.08).

CONCLUSIONS: Improving calcium and protein intakes by using dairy foods is a readily accessible intervention that reduces the risk of falls and fractures commonly occurring in aged care residents. **TRIAL REGISTRATION:** Australian New Zealand Clinical Trials Registry ACTRN12613000228785.

Language: en

Fall injuries and depressive symptoms among older adults and the mediating effects of social participation - China, 2011-2018

Zhang Y, Zhang L, Zhang X, Sun J, Wang D, Chen G. China CDC Wkly. 2021; 3(40): 837-841.

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DOI 10.46234/ccdcw2021.207 PMID 34659864

Abstract

WHAT IS ALREADY KNOWN ON THIS TOPIC? Prior studies found that fall events were associated with a higher level of depressive symptoms and a lower level of social functioning and social participation. In addition, social participation has also been significantly associated with better conditions of depressive symptoms.

WHAT IS ADDED BY THIS REPORT? This article implemented the literature in three ways. First, it examined the mechanisms of social participation in the association between fall injuries and depressive symptoms among older adults in China. Second, it specified the fall-injured older adults group from those who merely experienced fall events. Third, it compared the results between rural and urban China and discussed policy implications for both groups.

WHAT ARE THE IMPLICATIONS FOR PUBLIC HEALTH PRACTICE? Based on the findings of this study, future policies could consider boosting social participation at both the household and community level while taking into account the challenges of mobilities and social capabilities after fall injuries. Meanwhile, it is essential to accelerate the construction of aging-friendly communities to improve the accessibility of social participation and broaden social services to health management and monitoring.

Language: en

Keywords

Health; Older adults; Depressive symptoms; Fall injury; Gerontology; Mediated effect; Social intervention.

FallSkip device is a useful tool for fall risk assessment in sarcopenic older community people

Pérez-Ros P, Sanchis-Aguado MA, Durá-Gil JV, Martínez-Arnau FM, Belda-Lois JM. *Int. J. Older People Nurs.* 2021; ePub(ePub): ePub.

(Copyright © 2021, John Wiley and Sons)

DOI 10.1111/opn.12431 **PMID** 34652070

Abstract

PURPOSE: Fall prevention is a major health concern for the ageing population. Sarcopenia is considered a risk factor for falls. Some instruments, such as Time Up and Go (TUG), are used for screening risk. The use of sensors has also been shown to be a viable tool that can provide accurate, cost-effective, and easy to manage assessment of fall risk. One novel sensor for assessing fall risk in older people is the Fallskip device. The present study evaluates the performance of the FallSkip device against the TUG method in fall risk screening and assesses its measurement properties in sarcopenic older people.

METHODS: A cross-sectional study was made in a sample of community-dwelling sarcopenic and non-sarcopenic older people aged 70 years or over.

RESULTS: The study sample consisted of 34 older people with a mean age of 77.03 (6.58) years, of which 79.4% (n = 27) were females, and 41.2% (n = 14) were sarcopenic. The Pearson correlation coefficient between TUG time and FallSkip time was 0.70 (p < 0.001). The sarcopenic individuals took longer in performing both TUG and FallSkip. They also presented poorer reaction time, gait and sit-to-stand - though no statistically significant differences were observed. The results in terms of feasibility, acceptability, reliability and validity in sarcopenic older people with FallSkip were acceptable.

CONCLUSIONS: The FallSkip device has suitable metric properties for the assessment of fall risk in sarcopenic community-dwelling older people. FallSkip analyses more parameters than TUG in assessing fall risk and has greater discriminatory power in evaluating the risk of falls.

Language: en

Keywords

aged; risk assessment; sarcopenia; equipment and supplies; independent living

Five key papers about emergency department fall evaluation: a curated collection for emergency physicians

Kim SH, Higuchi M, Ishigami Y, Makishi G, Tada M, Hibino S, Gottlieb M, Lee S. *Cureus* 2021; 13(9): e17717.

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DOI 10.7759/cureus.17717 **PMID** 34650891

Abstract

The evaluation of patients who have experienced a fall has been an integral part of geriatric emergency care. All physicians who engage in the care of the geriatric population in acute settings need to familiarize themselves with the current literature on this topic. However, it can be challenging to navigate the large body of literature on this topic. The purpose of this article is to identify and summarize the key studies that can be helpful for faculty interested in an evidence-based fall evaluation. The authors compiled a list of key papers on emergency department (ED) based upon a structured literature search supplemented with suggestions by key informants and an open call on social media; 32 studies on ED evaluation were identified. Our authorship group then engaged in a modified Delphi technique to develop consensus on the most important studies about fall evaluation for emergency physicians. This process eventually resulted in the selection of the top five articles on fall evaluation. Additionally, we summarize these studies with regard to their relevance to emergency medicine (EM) trainees and junior faculty. Evaluation of older patients with a history of falls is a challenging but crucial component of EM training. We believe our review will be educational for junior and senior EM faculty to better understand these patients' care and to design an evidence-based practice.

Language: en

Keywords

evaluation; emergency department; older adults; education; fall; curated collection; geriatric; modified delphi method

GIST of the stomach masquerading as recurrent falls in an older adult: a case report and review

Tee LY, Sim L, Tan LF, Lum J, Seetharaman SK. BMC Gastroenterol. 2021; 21(1): 381.

(Copyright © 2021, Holtzbrinck Springer Nature Publishing Group - BMC)

DOI 10.1186/s12876-021-01964-6 **PMID** 34663231

Abstract

BACKGROUND: Gastric tumors become increasingly prevalent with advanced age but can be challenging to diagnose in older adults who may present with non-specific symptoms. Here, we report a rare case of an occult gastric tumor associated with mesenteric panniculitis that presented with recurrent falls precipitated by vertigo. **CASE PRESENTATION:** We describe a diagnostically challenging case of cryptogenic gastric tumor associated with mesenteric panniculitis in a 74-year-old female who presented with abdominal bloating and recurrent falls precipitated by vertigo, dehydration, acute kidney injury and electrolyte deficiencies, but had no alarm symptoms. Her symptoms resolved after laparoscopic wedge resection of the gastric tumor.

CONCLUSIONS: Our case highlights that while alarm symptoms such as dysphagia, weight loss, gastrointestinal bleeding and vomiting are considered indications for endoscopy, clinicians should also maintain a high index of suspicion for gastric tumors in older patients who may present with atypical symptoms.

Language: en

Keywords

Falls; Older adult; Case report; Atypical presentation; GIST

Self-reported insomnia symptom, sleep duration and the risk of recurrent falls among older men and women

Endeshaw Y. Eur. Geriatr. Med. 2019; 10(2): 303-312.

(Copyright © 2019, Elsevier Publishing)

DOI 10.1007/s41999-018-00158-w **PMID** 34652757

Abstract

BACKGROUND/OBJECTIVES: Previous studies have reported conflicting results on the association between sleep disturbance and recurrent falls. The objective of the current study was to examine the risk of recurrent falls among community-dwelling older adults who reported one or more insomnia symptoms along with normal, short and long sleep durations in comparison with those who reported no insomnia symptom and normal sleep duration.

DESIGN: Secondary data analysis of a prospective cohort study. **SETTING:** Community. **PARTICIPANTS:** 2198 community-dwelling older adults who participated in the National Health and Aging Trends Study at round 3 and round 4 follow-up visits. **MEASUREMENTS:** Data on self-reported sleep characteristics, demographic characteristics, health and memory status, and depression symptom collected at round 3 and round 4 follow-up visits, and corresponding data on falls that was collected at round 4 and round 5 follow-up visits.

RESULTS: Risk of recurrent falls significantly increased among women who reported insomnia symptom with short sleep duration. No significant association was observed among men.

CONCLUSION: One or more insomnia symptoms with a measure of sleep duration may be a more accurate indicator of adverse outcomes associated with sleep disturbance than either insomnia symptom or sleep duration alone. The mechanism underlying gender-specific association reported in the current study merits further investigation.

Language: en

Keywords

Insomnia symptom; Recurrent falls; Sleep duration

Sleep efficiency affecting the occurrence of falls among the frail older adults

Yoshimoto Y, Honda H, Take K, Tanaka M, Sakamoto A. *Geriatr. Nurs.* 2021; 42(6): 1461-1466.

(Copyright © 2021, Elsevier Publishing)

DOI 10.1016/j.gerinurse.2021.10.001 **PMID** 34656862

Abstract

The purpose of this study is to clarify whether reduced sleep efficiency affects the occurrence of falls among the frail older adults. This was a prospective cohort study. The subjects were frail older adult individuals living within a community, attending an older adult care center. Variables assessed include sleep efficiency, walking ability, history of cerebrovascular disease, depressive symptoms, cognitive impairment, chronic pain, frequency of sleeping medication use, and frequency of nocturnal urination. A fall calendar was used to record daily falls over a 6-month period beginning after administering a baseline survey. The Mann-Whitney U test was used to analyze the association between sleep efficiency and the occurrence of falls. Logistic regression analysis showed a significant association between falls and sleep efficiency. In conclusion, after adjusting for multiple confounders, reduced sleep efficiency did affect the occurrence of falls. Accordingly, approaches for improving sleep efficiency could offer new strategies toward fall prevention.

Language: en

Keywords

Fall; Frail; Sleep Efficiency

A comparison of falls and dizziness handicap by vestibular diagnosis

Huang RJ, Smith SL, Brezina L, Riska KM. Am. J. Audiol. 2021; ePub(ePub): ePub.

(Copyright © 2021, American Speech-Language-Hearing Association)

DOI 10.1044/2021_AJA-21-00086 **PMID** 34662235

Abstract

PURPOSE There is a paucity of data that directly compares the falls rate and dizziness handicap of different vestibular diagnoses. The purpose of this study is to compare the falls rate and dizziness handicap of common vestibular diagnoses encountered among a cohort of vestibular patients at a single institution.

METHOD We conducted a retrospective cross-sectional study of patients evaluated for dizziness at a tertiary care center vestibular clinic between August 1, 2017, and March 19, 2019. Vestibular diagnosis, demographic variables, comorbidities, falls status, and Dizziness Handicap Inventory (DHI) were extracted from the medical record for analysis. Associations between vestibular diagnosis and falls history or DHI were evaluated using multivariate logistic and linear regression, respectively.

RESULTS A total of 283 patients met our inclusion criteria with the following diagnoses: benign paroxysmal positional vertigo (BPPV; $n = 55$), acoustic neuroma ($n = 30$), Ménière's disease ($n = 28$), multiple vestibular diagnoses ($n = 15$), vestibular migraine ($n = 135$), or vestibular neuritis ($n = 20$). After adjusting for age, sex, race, medications, and comorbidities, the odds of falling was 2.47 times greater (95% CI [1.08, 6.06], $p = .039$) and the DHI score was 11.66 points higher (95% CI [4.99, 18.33], $p < .001$) in those with vestibular migraine compared to those with BPPV. Other diagnoses were comparable to BPPV with respect to odds of falling and dizziness handicap.

CONCLUSIONS Patients with vestibular migraine may suffer an increased risk of falls and dizziness handicap compared to patients with BPPV. Our findings highlight the need for timely evaluation and treatment of all patients with vestibular disease.

Language: en

Balance map analysis for visualization and quantification of balance in human walking

Kagawa T, Suzuki R. IEEE Trans. Neural Syst. Rehabil. Eng. 2021; ePub(ePub): ePub.

(Copyright © 2021, IEEE (Institute of Electrical and Electronics Engineers))

DOI 10.1109/TNSRE.2021.3120429 **PMID** 34653003

Abstract

Evaluation of stability or loss of balance in walking persists as an open question. Although an inverted pendulum model is often adopted to evaluate stance leg balance, a stumbling-related balance loss should be associated with the swing leg. We propose a new framework based on a compass gait model that determines whether the current state (i.e., position and velocity) in the swing phase can maintain steady state walking or, instead, fall without active joint torque, which is termed as balance map analysis. The forward and backward balance loss regions are derived by a linear compass gait model. To test the balance map analysis, measurement experiments of steady state walking and stumbled walking are used to validate two hypotheses: 1) the state during steady-state walking is not located in the balance loss region; and 2) if stumbling occurs, the state moves toward the forward balance loss region. The results of the balance map analysis showed good agreement with our prediction in the hypotheses. The minimum Euclid distance from the balance loss region is defined as the margin, and the margin from forward balance loss rapidly decreased after the stumbling perturbation. The statistical results reveal that the margin from the forward balance loss region after perturbation is significantly smaller than the margin in steady state walking. These results suggest that balance map analysis provides a new aspect of walking balance, expanded for the stumbling and recovery behavior of human walking. The code for the balance map analysis is available at https://github.com/TakahiroKagawa/GaitAnalysis_BM.

Language: en

Use of commercial video games to improve postural balance in patients with multiple sclerosis: a systematic review and meta-analysis of randomised controlled clinical trials

Parra-Moreno M, Rodríguez-Juan JJ, Ruiz-Cárdenas JD. *Neurologia (Engl. Ed.)* 2021; 36(8): 618-624.

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DOI 10.1016/j.nrleng.2017.12.002 PMID 34654537

Abstract

INTRODUCTION: Commercial video games are considered an effective tool to improve postural balance in different populations. However, the effectiveness of these video games for patients with multiple sclerosis (MS) is unclear.

OBJECTIVES: To analyse existing evidence on the effects of commercial video games on postural balance in patients with MS. **MATERIAL AND METHOD:** We conducted a systematic literature search on 11 databases (Academic-Search Complete, AMED, CENTRAL, CINAHL, WoS, IBECs, LILACS, Pubmed/Medline, Scielo, SPORTDiscus, and Science Direct) using the following terms: "multiple sclerosis", videogames, "video games", exergames, "postural balance", posturography, "postural control", balance. Risk of bias was analysed by 2 independent reviewers. We conducted 3 fixed effect meta-analyses and calculated the difference of means (DM) and the 95% confidence interval (95% CI) for the Four Step Square Test, Timed 25-Foot Walk, and Berg Balance Scale (BBS).

RESULTS: Five randomised controlled trials were included in the qualitative systematic review and 4 in the meta-analysis. We found no significant differences between the video game therapy group and the control group in Four Step Square Test (DM: -.74; 95% CI, -2.79 to 1.32; P=.48; I(2)=0%) and Timed 25-Foot Walk scores (DM:.15; 95% CI, -1.06 to .76; P=.75; I(2)=0%). We did observe intergroup differences in BBS scores in favour of video game therapy (DM: 5.30; 95% CI, 3.39-7.21; P<.001; I(2)=0%), but these were not greater than the minimum detectable change reported in the literature.

CONCLUSIONS: The effectiveness of commercial video game therapy for improving postural balance in patients with MS is limited.

Language: en

Keywords

Stability; Multiple sclerosis; Proprioception; Postural balance; Demyelinating diseases; Enfermedades desmielinizantes; Equilibrio postural; Esclerosis múltiple; Estabilidad; Propiocepción; Video games; Videojuegos