

Introduction

Sedentary behaviour (SB) is “any waking behaviour characterised by an energy expenditure ≤ 1.5 METs while in a sitting or reclining posture” (Bames et al. 2012).

Adults ≥ 60 years engage in SB for approximately 5.3 to 9.4 hours a day. Participating in high levels of SB has detrimental effects on older adults' global health.

The World Health Organisation (2020) strongly recommends that all older adults reduce SB and replace it with physical activity (PA). The terms physical inactivity and SB are often misused interchangeably however, being physically inactive does not necessarily class a person as sedentary.



Aims and Objectives

To systematically investigate and determine whether BC strategies, PA or other interventions reduce SB levels of an older adult, taking all comorbidities and settings into consideration.

Methods

Study Design: An electronic database search was conducted in AMED, Academic Search Complete, CINAHL Complete, MEDLINE, PubMed and Cochrane Library. Randomised controlled trials were deemed suitable based on inclusion criteria.

Participants: Sedentary older adults ≥ 60 years, including healthy older adults or those with comorbidities, in hospitalised or institutionalised or community-dwelling settings.

Intervention: any PA, exercise or BC intervention or any combination of interventions.

Control: any type of comparison.

Outcomes: Subjective or objective measures of SB.

Data extraction and analysis: Two reviewers independently screened studies for inclusion. The Cochrane Risk of Bias tool was used to assess methodological quality. A qualitative analysis was completed on the data extracted.



Results

Ten studies with $n=599$ participants were included. Methodological quality across studies was mixed. Interventions varied between PA ($n=4$), BC ($n=5$) and multi-disciplinary team management ($n=1$), with reductions in SB shown in seven studies. Two studies, one PA-based and one BC based intervention, with unclear risk of bias, demonstrated statistically significant SB reductions in community cohorts.

Overview of Included Study Demographics

Citation	Setting	Comorbidities	Type of Intervention
Aguiñaga and Marquez 2019	Community-dwelling	<u>Excludes:</u> History of stroke	Physical Activity
Aunger et al. 2020	Pre/post-op in own home for elective hip or knee surgery	Osteoarthritis <u>Excludes:</u> severe neuromuscular or cognitive impairments, concurrent condition that would be a risk to participating in physical activity	Behaviour Change
Barone Gibbs et al. 2017	Community-dwelling	<u>Excludes:</u> Recent CV event or condition that limits mobility	Behaviour Change
Maréchal et al. 2019	Community-dwelling	Cancer (Breast/Colon)	Physical Activity
Owari et al. 2019	Community-dwelling	Nil significant reported	Behaviour Change
Pedersen et al. 2019	In-patient and post discharge to own home	Medical Patients <u>Excludes:</u> terminal illness, undergoing cancer treatment, diagnosis of COPD	Physical Activity
Stathi et al. 2020	Community-dwelling	<u>Excludes:</u> Dementia diagnosis, condition that limited participation in activities outside the home	Behaviour Change
Turunen et al. 2020	In-patient and post discharge to own home	Lower limb or back musculoskeletal injury, <u>Excludes:</u> MMSE <20 , Severe alcoholism, severe progressive disease	Physical Activity
White et al. 2017	Community-dwelling	<u>Excludes:</u> Condition that limits mobility	Behaviour Change
Zusman et al. 2019	Community-dwelling	3 to 12 months post hip fracture, <u>Excludes:</u> Dementia diagnosis	MDT Management

COPD: Chronic Obstructive Pulmonary Disease, CV: Cardiovascular, MDT: Multi-disciplinary team, MMSE: Mini Mental State Examination

Conclusion

The most effective intervention to reduce SB in older adults has yet to be determined. A SB reduction in community-dwelling older adults through SB, BC or PA interventions is possible as positive results were demonstrated in community settings. Small sample sizes and heterogeneity across studies limited the ability to generalise results. Further research is required to determine the optimal intervention recommendations in older adults in a range of settings.