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Combining physical and cognitive interventions positively affects gait in older adults with cognitive impairment

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Authors Declarative Title: Combining Physical and Cognitive Interventions Positively Affects Gait in Older Adults with Cognitive Impairment.

Commentary on: Zhang W, Low LF, Gwynn JD, Clemson L. Interventions to Improve Gait in Older Adults with Cognitive Impairment: A Systematic Review. *Journal of American Geriatrics Society*. 2019; 67; 381-391

Commentary

Implications for Practice & Research

- Gait is not solely a biomechanical process. Cognitive factors need to be considered when employing interventions to improve gait in older people.
- Physical and cognitive factors affect gait performance, and both should be addressed in intervention programs.
- To improve gait in older people living with mild cognitive impairment, or the early stages of dementia, gait interventions should include strength, balance, and functional mobility training in combination with cognitive control training.

Context

The prevalence of gait and balance disorders significantly increases as a person grows older. These disorders affect around 10% people in their sixties and more than 60% of people in their eighties¹. Recent studies have found a strong link between cognitive impairment and disorders affecting gait². As a result, there has been much research which has focused on interventions to improve the gait of older people living with cognitive impairment or dementia³. The aim of this review was to determine whether interventional programs improve gait in older adults living with cognitive impairment or dementia⁴.

Methods

The authors conducted their review in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement⁵. The literature search was conducted in July 2018 using Medline, Cinahl, Scopus, PsychInfo, Amed, Embase, Web of Science, and PubMed. Inclusion criteria included people who were aged 65 or older, people who lived with cognitive impairment or dementia and interventional studies with gait variables included as an outcome measure. Exclusion criteria applied to this review included people living with intact cognition, people with Parkinson's disease, normal-pressure hydrocephalus, progress supranuclear palsy, stroke, or cancer.

Two authors were involved in data extraction and used the Cochrane Effective Practice and Organisation of Care risk-of-bias tool to assess the potential bias in each study.⁶

Findings

Thirty-four studies met the inclusion criteria and were included in this review. These studies were categorised into 3 groups based on the intervention used: medication or medical devices, exercise programs alone, and combined exercise and cognitive interventions. The authors found that there is evidence that antedementia medication, exercise programs, and combined exercise and cognitive interventions do improve gait in people with cognitive impairment or dementia. Specifically, there was strong evidence that exercise programs focusing on strength and balance training, especially when combined with functional mobility training, improved gait in older people living with mild cognitive impairment or dementia. There was weaker evidence to indicate that antedementia medication alone improves gait in people living with dementia.

Commentary

Gait is a complex task which requires physical skill, balance and cognition. This review highlights that interventions which combine strength and balance exercises, alongside mobility training, may be affective in improving gait. For people living with cognitive impairment, or dementia, the provision of additional cognitive components, such as walking while talking or walking and performing a cognitively challenging task, may further improve gait performance.

While functional training combined with cognitive training improves gait in older people with cognitive impairment, it is unclear whether this strategy will be effective for individuals with more severe cognitive impairment. This review highlights that further research is needed to investigate which combination of interventions are most effective in improving gait performance in older people with advanced cognitive impairment.

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Competing Interests:

Nothing to declare.