



JAMDA

journal homepage: www.jamda.com

Original Study

Walking Aids Moderate Exercise Effects on Gait Speed in People With Dementia: A Randomized Controlled Trial

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A B S T R A C T

Keywords:

Mobility limitations
Residential facilities
Alzheimer disease
Rehabilitation
Frail elderly

Objectives: To investigate the effects of exercise on gait speed, when tested using walking aids and without, and whether effects differed according to amount of support in the test.

Design: A cluster-randomized controlled trial.

Setting: The Umeå Dementia and Exercise (UMDEX) study was set in 16 nursing homes in Umeå, Sweden.

Participants: One hundred forty-one women and 45 men (mean age 85 years) with dementia, of whom 145 (78%) habitually used walking aids.

Intervention: Participants were randomized to the high-intensity functional exercise program or a seated attention control activity.

Measurements: Blinded assessors measured 4-m usual gait speed with walking aids if any gait speed (GS), and without walking aids and with minimum amount of support, at baseline, 4 months (on intervention completion), and 7 months.

Results: Linear mixed models showed no between-group effect in either gait speed test at 4 or 7 months. In interaction analyses exercise effects differed significantly between participants who walked unsupported compared with when walking aids or minimum support was used. Positive between-group exercise effects on gait speed (m/s) were found in subgroups that walked unsupported at 4 and 7 months (GS: 0.07, $P = .009$ and 0.13, $P < .001$; and GS test without walking aids: 0.05, $P = .011$ and 0.07, $P = .029$, respectively).

Conclusions: In people with dementia living in nursing homes exercise had positive effects on gait when tested unsupported compared with when walking aids or minimum support was used. The study suggests that the use of walking aids in gait speed tests may conceal exercise effects.

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In older people gait is associated with functional independence, health, and survival.^{1–4} In addition, poor gait has been shown to predict incident dementia, predominantly non-Alzheimer dementia compared with Alzheimer disease,⁵ and to deteriorate concomitantly with disease severity.⁶ Although gait is slow among

residents in nursing homes, where dementia is common, for many it remains functional⁷ and still amenable for improvement.⁸ Interventions to maintain gait to preserve independence and promote health may, therefore, be particularly important in this population.

This work was supported by the Swedish Research Council (grant numbers K2009-69P-21298-01-4, K2009-69X-21299-01-1, K2009-69P-21298-04-4, K2014-99X-22610-01-6); Forte—Swedish Research Council for Health, Working Life and Welfare (formerly FAS—Swedish Council for Working Life and Social Research; grant number 2012-0775) the Vårdal Foundation; the Swedish Dementia Association; the Promobilia Foundation; the Swedish Society of Medicine; the Swedish Alzheimer Foundation; the King Gustav V and Queen Victoria's Foundation of Freemasons; the European Union Bothnia-Atlantica Program; the County Council of Västerbotten, the Umeå University Foundation for Medical Research; the Ragnhild and Einar

Lundström's Memorial Foundation; and the Erik and Anne-Marie Detlof's Foundation.

H.L. developed and has received royalties on the weighted belt used in the exercise program. All other authors declare no conflicts of interest.

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<http://dx.doi.org/10.1016/j.jamda.2016.09.003>

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While exercise appears to improve gait in people with dementia in community settings,^{9,10} results are inconsistent in nursing home populations where severity of physical and cognitive impairments is greater.^{11,12} To further evaluate effects of exercise in randomized controlled trials would, therefore, be of value in this setting. In addition, many older people with dementia living in nursing homes

use walking aids that can improve gait performance through alleviating impaired balance or pain.^{13,14} Subsequently, gait speed measured using a walking aid could limit detection of gait deficits, thus, reduce responsiveness of the test.¹⁵ Furthermore, in people with dementia the impact may be pronounced given the cognitive demand of walking aid use.¹⁴

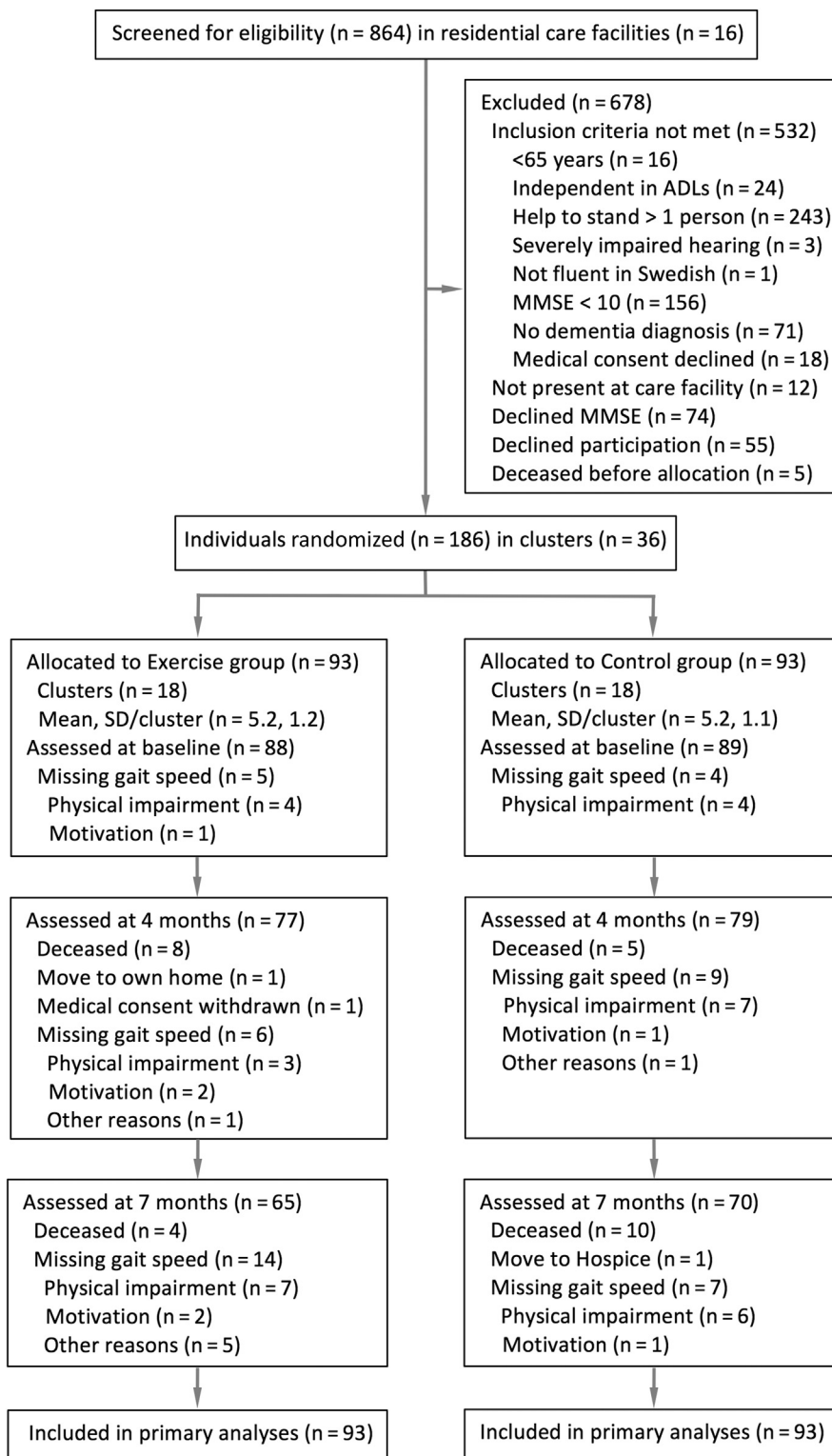


Fig. 1. Flow of participants. SD, standard deviation.

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