

Systematic Review

Current Trends in Gait Rehabilitation for Stroke Survivors: A Scoping Review of Randomized Controlled Trials

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Abstract: Background: Stroke stands as a significant global health concern, constituting a leading cause of disability worldwide. Rehabilitation interventions are crucial in aiding the recovery of stroke patients, contributing to an overall enhancement in their quality of life. This scoping review seeks to identify current trends in gait rehabilitation for stroke survivors. Methods: The review followed the methodological framework suggested by Arksey and O'Malley. Electronic databases, such as CINAHL Complete, MEDLINE Complete, and Nursing & Allied Health Collection, were systematically searched in November 2023. Inclusion criteria comprised papers published in either English or Portuguese from 2013 to 2023. Results: From the initial search, a total of 837 papers were identified; twenty-one papers were incorporated into this review. Thirteen distinct categories of gait rehabilitation interventions were identified, encompassing diverse approaches. These categories comprise conventional rehabilitation exercises, traditional gait training with integrated technology, and gait training supported by modern technologies. Conclusions: Although traditional rehabilitation exercises have historically proven effective in aiding stroke survivors, a recent trend has emerged, emphasizing the development and integration of innovative therapeutic approaches that harness modern technologies.

Keywords: stroke; stroke rehabilitation; rehabilitation; gait; exercise therapy; physical therapy



Citation: Teodoro, J.; Fernandes, S.; Castro, C.; Fernandes, J.B. Current Trends in Gait Rehabilitation for Stroke Survivors: A Scoping Review of Randomized Controlled Trials. *J. Clin. Med.* **2024**, *13*, 1358. <https://doi.org/10.3390/jcm13091358>

Academic Editors: Nada Andelic and Benjamin Y. Q. Tan

Received: 21 January 2024
Revised: 23 February 2024
Accepted: 24 February 2024
Published: 27 February 2024



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1. Introduction

Stroke stands as a substantial global health issue, holding the position of second-leading cause of mortality and the third-leading cause of disability on a worldwide scale.

The burden of stroke is staggering, with six and a half million deaths recorded in 2019, along with over 12.2 million new stroke cases and a prevalence of 101 million stroke survivors [1]. These data emphasize the considerable burden of stroke on public health, encompassing mortality and disability, solidifying its status as one of our era's most prevalent and impactful diseases [2].

Functional changes are frequently observed among stroke survivors [3]. Patients commonly experience cognitive and motor impairments that affect balance, coordination, proprioception, muscle tone, muscle strength, and gait, making them prevalent sequelae of stroke [3,4].

A prior study revealed that up to 83% of stroke survivors experience balance impairment [5]. Motor deficits resulting from a stroke can significantly impact an individual's functional independence. Challenges in balance, coordination, muscle strength, and gait often lead to difficulties in performing basic activities of daily living, such as walking, dressing, and eating. These limitations also impact stroke survivors' abilities to engage in social interactions, pursue leisure activities, and return to work after a stroke [6,7], leaving individuals dependent on others for support and assistance, impeding their sense of autonomy and self-reliance. Moreover, balance impairments significantly contribute to adverse

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