Occupational Performance Assessments Used in Gait Training Protocols with People with Chronic Stroke

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Introduction

- Of all stroke survivors, more than 50% are considered severely or permanently impaired, around 10% require long-term care, and only 20% of those who are under the age of 65 return to work.
- Gait rehabilitation is typically part of physical therapy, focusing on strengthening, endurance, and coordination exercises. However, occupational therapists can also enhance a client's endurance and strength through assessments, treatments, adaptive techniques, assistive technologies, and environmental adjustments to improve occupational performance.
- There are few studies focusing on the occupational performance outcomes of gait training interventions.
- Aims:
- To add to research explaining the occupational performance outcomes from gait-related or exercise interventions on post-stroke individuals.
- To inform readers of occupational-based assessments that address the outcomes of a post-stroke individual's occupational performance from gait-training interventions.

Methods

- *Study Selection:* 1) Participants with chronic stroke (more than 6 months post-stroke), 2) Participants who were aged 18 years or older with no significant cognitive impairment, 3) Participants who had a balance and/or gait impairment related to their stroke, 4) Used occupational performance based assessments
- *Databases:* PubMed, Embase, American Journal of Occupational Therapy (AJOT) hand search.
- *Time Frame:* 2014- 2024 (10 years)
- Articles published in English
- Search strategy can be found in Appendix A
- This research was conducted at the University of Alabama at Birmingham.

Results

- A total of 687 studies were retrieved from the two databases and hand search when using the appropriate search terms. Out of the 687 studies, 63 studies were screened for review. A total of 3 duplicates were excluded which caused 60 studies to be eligible for this scoping review. One article could not be found through Covidence, so a total of 59 articles were available to be screened in the full-text phase by two reviewers. Out of 59 articles, 6 studies met the eligibility criteria for research.
- The most common reasons for exclusion were due to the studies having the wrong intervention, study design, or studies only involving an upper extremity intervention.
- A Risk of Bias analysis was conducted to all studies included in this review .From all six domains, all articles show a low risk of bias for the randomization process, deviation from intended interventions, and missing. On the other hand, two studies did use blinded assessors and/or did not report if the examiners were blinded. One study did not report data collected from all outcome measures administered leading to potential selected report of results. .

Occupational Performance Outcomes

- Overall, the main occupations addressed in the studies were physical activity and quality of life Within the ADL performance category, bowel dysfunction was also an occupational-based component that received a positive outcome from gait-training interventions.
- The participants had no changes within PA levels post-intervention.
- From the outcome assessments used in the studies described in (Table 2), the most common occupational performance measures utilized were the SS-QOL and HAP. The SS-QOL measured improvements in QOL and social participation when communicating to peers and the HAP measured PA post-intervention for the participants in these studies.

Results (cont.)

Fig. 1. PRISMA flowchart

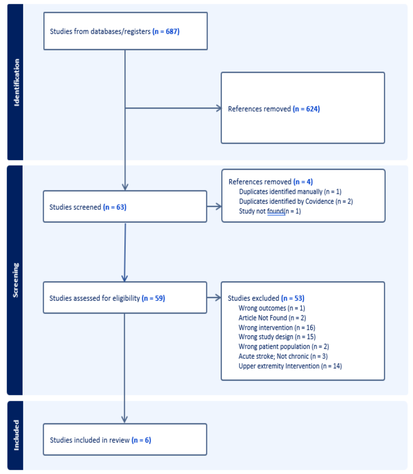


Fig. 2. Cochrane Risk of Bias Assessment of the Studies

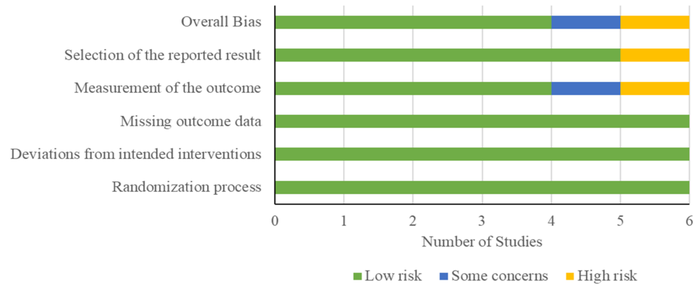
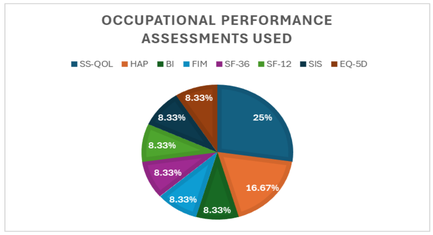


Fig. 3. Occupational performance outcome measures



Notes HAP = Human Activity Profile; SS-QOL = Stroke Specific Quality of Life Scale; FIM=Functional Independence Measure; SF-36 = 36-item Short-Form Health Survey; BI = Barthel Index; SIS = Stroke Impact Scale; EQ-5D = EuroQol 5 Dimensions; SF-12 = Short Form Quality of Life Test;.

Discussion

- The most common occupational-based assessments used in the 6 studies were the Functional Independence Measure (FIM), Human Activity Profile (HAP), and the Stroke Specific Quality of Life Scale.
- Readers will utilize this scoping review to understand the most common occupational performance-based assessments used in gait training, the definition and use of gait training and the occupational performance outcomes of these interventions.
- While gait training is widely studied, not many researchers prioritize occupational performance-based assessments to evaluate changes in meaningful occupations and quality of life (QOL) following discharge.
- According to the results of the occupational performance assessments, one article did state that there were no improvements on physical activity (PA) level but the improvements made from gait training and exercise interventions improved QOL and ADL performance in patients post-intervention. The studies in this review explained how gait training or exercise interventions has improved well-being which are major factors related to QOL.

Implications for Practice

- Occupational therapists (OTs) must understand the results of gait training and the principles behind it to effectively inform patients about how these interventions can enhance their occupational performance.
- If OTs actively engage with the outcomes and methodologies of gait training, it may lead to more studies focused on how these interventions affect occupational performance, ultimately benefiting clients in their daily lives.

Future Direction

- Adding step counters and sensor-related step apps may be great options to use in future gait training studies to observe the correlation between capacity and performance in the patient's environment.

Limitations

- The search strategy may not have been comprehensive enough, potentially limiting information based on occupational performance for chronic stroke.
- To enhance the search strategy, future research could broaden inclusion criteria to encompass subacute stroke and other therapeutic interventions alongside gait training.

Conclusion

- Gait training led to changed occupational performance of individuals with stroke within the areas of QOL and ADL performance.
- Gait training activities lead to no changes within the occupation of PA.
- Changes on these occupations were assessed using the FIM and BI which includes different ADLs such as toileting (bowel control), self-care, and transfers.

References

- Please, scan the QR code to access the complete list of reference.

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