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Psychometric Properties of Dynamic Balance, Functional Gait and Dual task walking Outcome Measures used in Stroke Rehabilitation. A Systematic Review

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Statement of the Problem: Mobility and balance problems are among the most frequently reported to have disabling effects after stroke. Rehabilitation goals to optimize post stroke functional outcomes and regain normal walking in home and in the community. The use of appropriate, valid, and reliable clinical outcome measures (OMs) is a quality requirement in rehabilitation. This review are aims to identify and review psychometric properties of clinical OMs of dynamic balance, functional gait and dual task walking used in stroke rehabilitation to support decision making about appropriate measures for a clinical research study.

Methods: This systematic review was conducted in accordance with PRISMA guidelines. Studies were included if meet the following criteria (1) adults' participants with stroke; (2) assessed dynamic balance and functional walking (walk at a functional level, i.e., crossing the road); (3) used measures that can be applied in clinic; (4) psychometric validation studies (reliability, validity, and responsiveness) of patient performance OMs; (5) published in English with full text available. A systematic literature search of databases was performed. COSMIN checklist was used to determine methodological quality and statistical outcomes.

Results: 43 studies were included, a total of 23 different OMs were identified. Validity and reliability were the psychometric found for most OMs, however data on responsiveness was insufficient. The best psychometric properties for dynamic balance OMs were for the balance evaluation system test (BESTest) and mini-BESTest; for functional walking OMs were the dynamic gait index, functional gait assessment, and timed-up and go test. In the dual task walk OMs, there were a lack of consistency in testing procedure, however all demonstrated high reliability for motor related tasks, slightly less for cognitive related tasks. Conclusion: this review included reliable and valid OMs for dynamic balance, functional gait and dual task walk which help clinician and researchers in selection.

Biography

Kawthar Ajaj, lecturer in King Saud University, Riyad, research follow PhD candidate in King's college London. Interested in neurological rehabilitation, specifically in assessment and rehabilitation for regain balance and normal walking to minimize risk of falls.