

Abstract

The objective of this study is to evaluate the effectiveness of opened and closed loop cueing intervention on Parkinson disease patients gait function focusing on the temporal and spatial parameters of gait and to define the most effective cueing approach for different gait parameters and finally to examine the closed loop feedback system for regular usage in regular physiotherapy clinics or patients own homes. A 37 clinical trial including 1014 patients were investigated to reach an answer for this review questions.

Results revealed that both open and closed cueing intervention has a positive effect on gait spatial, temporal gait parameters and capable to reduce the number of freezes in Parkinson diseases patients. Auditory cueing strategies had a superior effect on patient speed of gait with higher rhythm of cues and better overall gait function during dual tasking. Visual cues showed better effect on stride length and stride frequency. The close loop feedback system of cues still built on complex machinery segments which make it difficult to be used as regular intervention in physiotherapy clinics and patients own homes.

As an overall cueing intervention found to be significantly effective as locomotive therapeutic approach on gait functionality, but each intervention procedure and methodology are different and not standardized which make the process of comparing the studies highly challenging.

Keywords: physiotherapy; Parkinson; gait disorders; cueing; open loop cueing; close loop cueing; rehabilitation.