Applicability Study of a **Multitask Cognitive and Motor exercise program** for Individuals with Parkinson´s disease: The **COGWEB® MOVE** Program.

Josefa Domingos[1,2], Diana Peralta[1], Rita Loureiro[1], Catarina Godinho[1,2,3], Joana Pais[4,5], Vitor Tedim Cruz[5], Joaquim J. Ferreira[1,2]

[1]CNS-Campus Neurológico Sénior, Portugal; [2]Clinical Pharmacology Unit, Instituto de Medicina Molecular, Faculty of Medicine, University of Lisbon, Portugal; [3] Center for Interdisciplinary Research Egas Moniz (CiiEM), Instituto Superior de Ciências da Saúde Egas Moniz, Monte de Caparica, Portugal; [4]Neuroinova; [5] Epidemiology Research Unit, Public Health Institute, University of Porto, Portugal.

BACKGROUND

Parkinson´s disease (PD) typically results in significant functional disabilities affecting posture, gait, daily living activities and cognition. There is growing evidence for the positive benefits of non-pharmacological interventions, such as physiotherapy and cognitive training or even their combination in dual or multitask training programs. Combining such interventions may be a new potential intervention that comes in line with the impending positive evidence on dual or multitask training. However, uncertainties persist about the most beneficial type of exercises, intensity, patient´s preferences and long term adherence in real-word clinical practice.

OBJECTIVE

To test the applicability of a new rehabilitation program for people with Parkinson´s disease combining web-based cognitive training with motor exercises (COGWEB ® CNS Move Program).

METHODS

The COGWEB ® CNS Move program consisted of PD-specific cognitive and motor exercise sessions lead by à physiotherapist specialized in PD and cognitive training. Physical exercises including functional activities (e.g., sitting, standing, walking, turning) were combined with computerized cognitive exercises from the COGWEB® program, displayed on a wide screen in the gym. Applicability was assessed during the sessions through patient satisfaction questionnaires and an inventory of potential adverse events.

RESULTS

Five participants with a diagnose of PD, mean age of 68 years, Hoehn & Yahr I-III, and medically stable were included. Ten weekly individual sessions were performed over three months (1h/week).

During the sessions occurred modification of the exercises, namely adjustments to the type of physical activities, length, verbal feedback, learning time, as well as addition of voice, cognitive and physical activities applied to the COGWEB ® exercises. Risk of falling had to be continuously monitored by the physiotherapist, with verbal and non-verbal cues to correct risk behaviors especially in standing and gait activities. This risk was more perceived when the participant was performing dual tasks or challenged to divide attention between tasks. However, all participants completed the study with no adverse events or any other limitations. during the sessions.

A satisfaction questionnaire at the end of each session showed participants enjoyed themselves, were satisfied with the intensity and duration of the exercises, and all were willing to repeat such a program.

CONCLUSION

Our results suggest that the selected combination of cognitive and motor interventions was suitable to people with PD. Nonetheless, safety precautions are recommended when undertaking dual task training.

COGWEB® is a web-based cognitive training system and registered trademark developed and commercialised by Neuroinova, Lda.