ULPGC Universidad de Las Palmas de Gran Canaria

WORLD SLEEP 2023 Rio de Janeiro BRAZIL

EFFICACY OF NON-INVASIVE NESA NEUROMODULATION AND THERAPEUTIC EXERCISE ON SLEEP DISORDERS AND COGNITIVE FUNCTION IN PEOPLE WITH DEMENTIA. RANDOMIZED MULTICENTER CLINICAL TRIAL.

E. Teruel-Hernández[1], R. Medina-Ramírez[1], B. Machío-Castello[1].
1 University of Las Palmas de Gran Canaria, Las Palmas, Spain.

INTRODUCTION

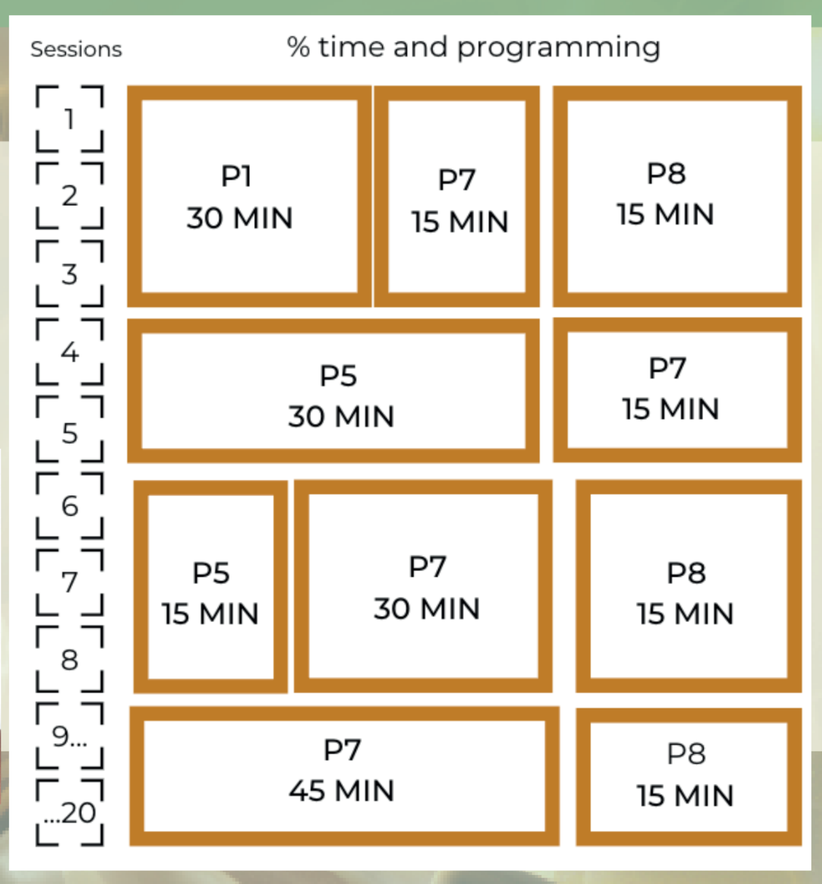
The dementia syndrome is a progressive decline in cognitive functions caused by an alteration in the pattern of connections in the neural network. There is an inability to create new neural connections, producing, among others, behavioral disorders. The most evident and widely studied behavioral alteration in patients with neurodegenerative diseases is the alteration of sleep-wake behavior.

The aim of the trial was to test the effect of non-invasive neuromodulation using the NESA device and therapeutic exercise on sleep quality, daytime sleepiness and cognitive function in patients diagnosed with dementia.

METHODS

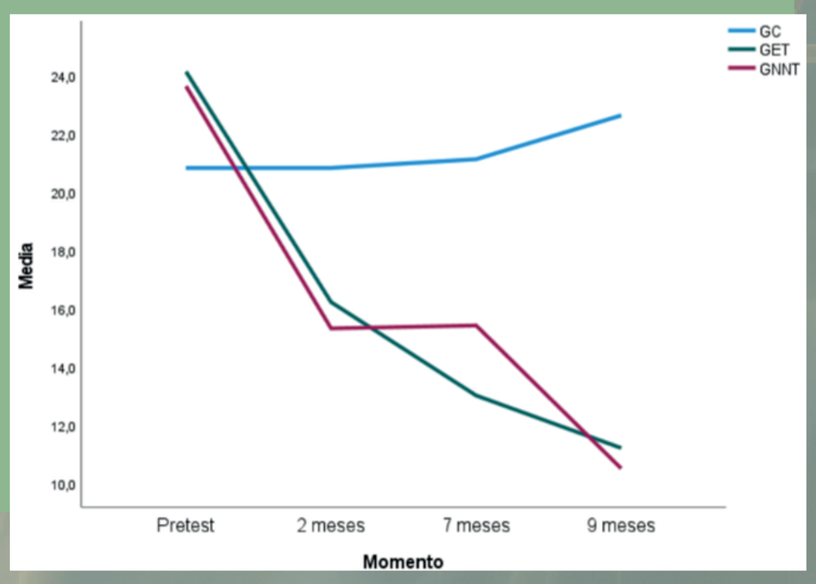
Randomized and multicenter clinical trial. Subjects (n=30) with dementia were divided into 3 study arms (CG: control group; GET: therapeutic exercise experimental group; GNNT: non-invasive neuromodulation experimental group). The variables were collected at 4 moments of the study:

- Sleep quality: Sleep Quality Index (PSQI)
- Daytime sleepiness : Epworth Sleepiness Scale (ESE)
- Cognitive function: Mini-Exam Cognitive Test

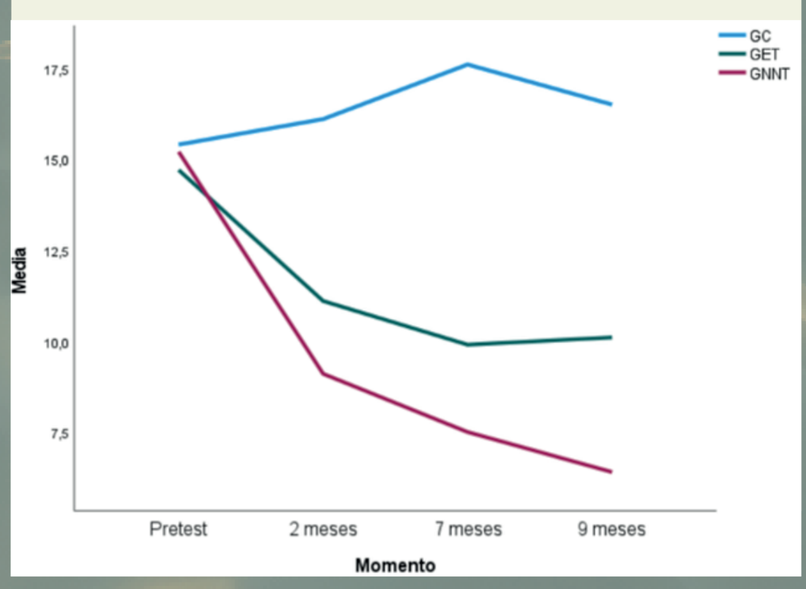


RESULTS

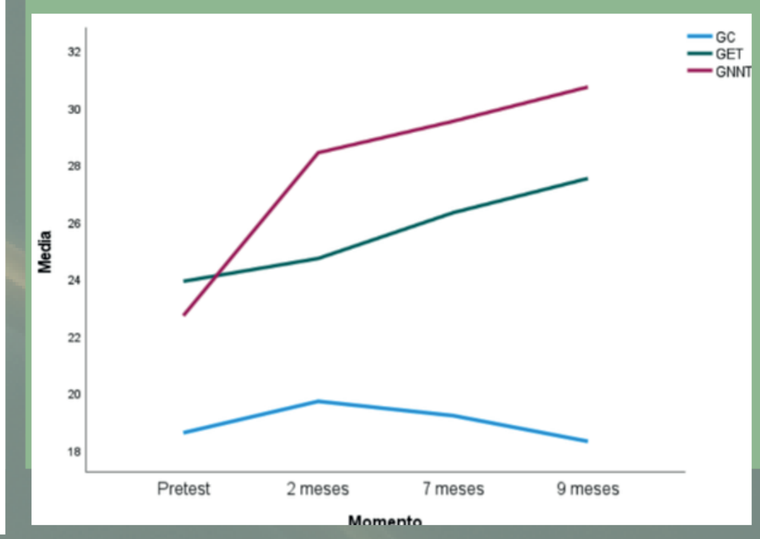
The NNT 10.5 (SD 5.13) and ET 11.2 (SD 6.00) groups have obtained significant improvements (P=0.002) in **sleep quality** by both reducing the test score after 7 months, although it is the GNNT who showed a better evolution.



The GNNT 6.40(SD 3.10) and GET 10.1(SD 2.60) have obtained improvements in **daytime sleepiness** (p<0.001) as both test scores decreased after 7 months. Therefore, it is the GNNT who shows a better evolution.



The GNNT 30.7 (SD=3.50) and GET 27.5 (SD=2.92) have obtained significant improvements (p<0.005) in **cognitive function** at 7 months. Both groups improved in the results of cognitive function, however, it was the GNNT patients who showed a better evolution.



CONCLUSION

The main applicability lies in being able to affirm that the two non-pharmacological treatment options, non-invasive neuromodulation through the Nesa device and therapeutic exercise, produce significant benefits in the mentioned problem, and both treatments are superior to educational advice. highlighting the greater effects obtained with the Nesa non-invasive neuromodulation treatment.