

Supplementary Material 1 Additional cognitive assessment description

The MMSE was developed as a general cognitive test to screen for cognitive decline [1]; the validated Spanish version [2] was used in the present study. This test is composed of two parts. The first part requires only vocal responses and covers orientation, memory, and attention capacities. The second part requires the ability to name object, follow verbal and written commands, write a sentence spontaneously, and copy a complex polygon such as a Bender Gestalt figure. The maximum possible scores on the first and second parts are 21 and 9, respectively. A low MMSE score (≤ 24) may be related to cognitive decline.

The CDT assesses visuospatial, visuoconstructive, and memory abilities, as well as verbal and numerical knowledge [3]. A validated Spanish version of the CDT for the elderly population was used in this study [4]. The maximum possible score of the current version is 7 points. Lower scores indicate lower performance.

The DST is a Spanish version of the WAIS-III that measures attention and memory functions [5]. There are two versions: A) the digit span test forward version (DST-f), reflecting short-term memory, requires verbal repetition of a number sequence varying from 2 to 9 digits in the same order as provided by the interviewer; B) the DST-b, representing working memory, also requires verbal repetition of a number sequence from 2 to 8 digits, but in reverse order. For both tests, the task is finished when the participant fails two consecutive attempts. The score is proportional to the number of sequences completed. Higher scores indicate higher performance in memory function.

The Spanish Verbal Fluency Test (VFT) provides information about language and executive function [6]. Specifically, the animal category version of the semantic VFT (VFT-a) and the letter “p” version of the phonemic VFT (VFT-p) were used in this study. Participants are instructed to say as many words as possible related to the semantic category of animals for the VFT-a test and as many words as possible starting with the letter “p” for the VFT-p test. The total score was obtained from the list of properly stated words, with a time limit of 60 seconds for each test. The semantic VFT is influenced mainly by verbal abilities, whereas the phonemic VFT depends mainly on executive control [7].

The TMT consists of 25 circles spread over a sheet of paper and contains part A (TMT-A) and part B (TMT-B). In the TMT-A, participants were asked to connect consecutive numbers in ascending order (1, 2, 3, ...) by drawing a line. In the TMT-B, they were asked to connect consecutive numbers and letters in an alternating numeric and alphabetic sequence (1–A, 2–B, 3–C, ...). The TMT effectively discriminates cognitive dysfunction [8]. More specifically, the TMT-A assesses attention and processing speed [9] whereas the TMT-B requires more executive function, such as cognitive flexibility [10]. The score for each part is calculated according to the time taken to complete the task,

where more time spent indicates poorer performance. In this study, the TMT scores were referenced to normative data provided for the Spanish population [9].

References

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