



# THE ITALIAN VERSION OF COGNITIVE FUNCTIONING INSTRUMENT (CFI): RELIABILITY AND VALIDITY IN A LARGE COHORT OF HEALTHY ELDERLY SUBJECTS

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## OBJECTIVES

To validate the Italian version of the Alzheimer's Disease Cooperative Study (ADCS)-Cognitive Functioning Instrument (CFI), a simple questionnaire useful to detect early changes in cognitive abilities in individuals without clinical impairment, thus also used for monitoring cognitive functioning in prevention trials, by comparing current to previous performance observed one year before. It consists of 14 questions administered to both the subject and the referent (study-partner). The score ranges from 0 to 14, where responses are coded as Yes =1, Maybe =0.5, No =0 and summed to calculate a total score.

## MATERIALS AND METHODS

CFI was translated from English into Italian by using forward-backward translation. Each item was set after agreement was reached.

We also administered the Mini-Mental State Examination (MMSE), the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) and the Geriatric Depression Scale (GDS)

The Italian version of CFI was administered to a consecutive group of 257 healthy and functionally independent subjects recruited either among relatives of patients attending our Memory Clinic or as volunteers after advertisement.

## AIMS

We wanted to assess:

- the internal consistency of the Italian version of CFI, by means of corrected item total correlations and Cronbach's  $\alpha$ ;
- the correlation between CFI and global cognition measurements such as MMSE and RBANS - i.e., criterion validity;
- the correlation between CFI and GDS - i.e., discriminant validity.

## RESULTS

### 1 Demographics data of patients cohort

Variable	
Gender (M/F)	99/158
Age	70.9 $\pm$ 5.1
Education	11.5 $\pm$ 4.5
MMSE	28.1 $\pm$ 1.5

Item	Self-report Yes %	Item total correlation	Partner-report Yes %	Item total correlation
1 Subjective memory decline	14%	0.54	10%	0.63
2 Questions repetition	19%	0.42	18%	0.59
3 Misplacing things	26%	0.51	23%	0.47
4 Use of written reminders	50%	0.43	20%	0.33
5 Remember appointments	12%	0.44	11%	0.64
6 Recalling names and words	44%	0.45	20%	0.41
7 Driving	12%	0.43	11%	0.44
8 Managing money	3%	0.38	4%	0.44
9 Social activities	18%	0.42	15%	0.31
10 Work performance	7%	0.45	4%	0.42
11 Following news or the plots of books, movies	8%	0.51	3%	0.46
12 Hobbies	3%	0.51	3%	0.43
13 Spatial Disorientation	11%	0.49	11%	0.53
14 Using household appliances	4%	0.43	4%	0.41

### 2 Internal consistency:

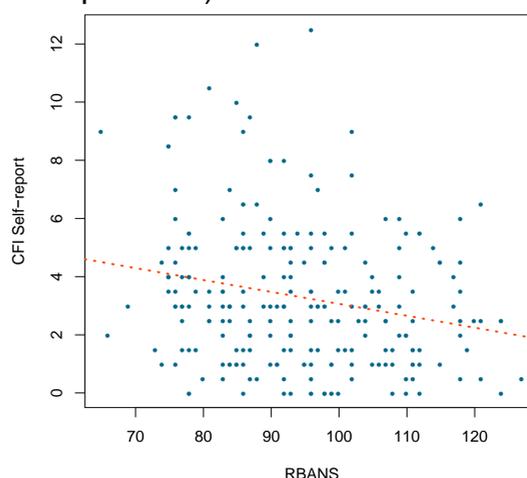
Cronbach's  $\alpha$  was 0.77 in self-report and 0.78 in partner-report. The correlation between total partner- and self-report score was significant ( $r=0.35$ ,  $p<0.001$ ).

Corrected item total correlations ranged between 0.38 and 0.54 in self-report, and between 0.31 and 0.63 in partner-report

### 3 Criterion Validity

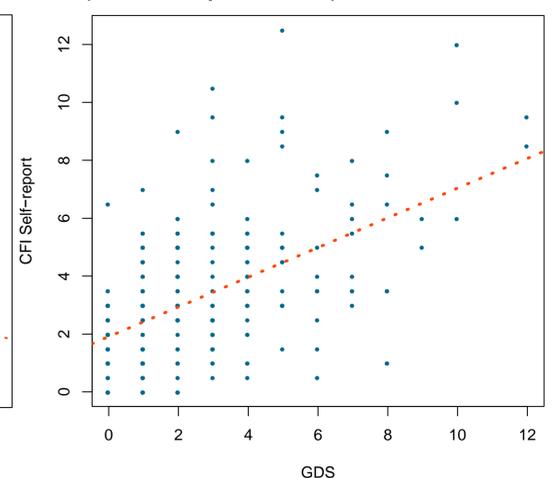
CFI self-report total score was correlated both with MMSE ( $r=-0.15$ ,  $p=0.022$ ) and with RBANS ( $r=-0.26$ ,  $p=0.007$ ).

CFI self-report was also correlated with age ( $r=0.19$ ,  $p=0.003$ ).



### 4 Discriminant validity

CFI self-report total score was strongly correlated with GDS ( $r=0.50$ ,  $p<0.001$ ), while correlation between CFI partner-report and GDS was weaker although significant ( $r=0.17$ ,  $p=0.013$ ).



## RESULTS

Cronbach's  $\alpha$  was comparable to the original in self-report and lower but adequate in partner report. Criterion validity is confirmed by the correlation with MMSE and RBANS index in the self-report, but not supported by a correlation with MMSE in the partner version. The correlation of the scores with with GDS may threaten discriminant validity.

## CONCLUSIONS

Our results support the use of the Italian version of CFI. However, a follow-up of the same cohort is needed in order to fully validate the CFI as a useful tool in tracking longitudinal changes in cognitive and functional abilities in subjects without clinical impairment.

## REFERENCES

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