Minor neuropsychological deficits in subjective cognitive decline (SCD)

Ramón López-Higes[1], Pedro F. S. Rodrigues[2], Sara M. Fernandes[2], & Susana Rubio-Valdehita[1]

[1]Complutense University – Madrid (Spain) | [2]CINTESIS.UPT@RISE-Health, Portucalense University (Portugal) | Email: prodrigues@upt.pt

Poster# 51

1. INTRODUCTION

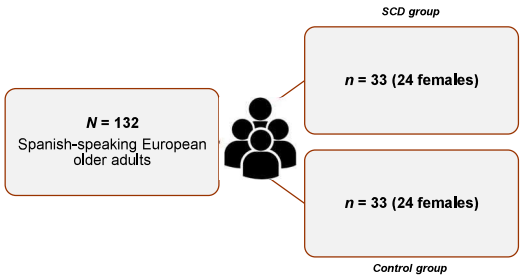
Although individuals with **subjective cognitive decline (SCD)** may not exhibit clinically significant cognitive impairments, growing evidence indicates the presence of subtle cognitive and neurobiological differences when compared to age-matched healthy older adults. These distinctions can be identified through specialized assessments (1-3).

AIMS

- The first aim of this cross-sectional study was to examine **whether there are significant differences in cognitive domains between older adults with subjective cognitive decline (SCD) and cognitively healthy controls;**
- The second goal was to determine **which variable(s), if any, would have a significant role in subjects' classification.**

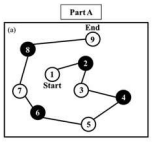
2. METHOD

Participants



Instruments and tasks

1. Sociodemographic Questionnaire
2. Screening tests (MMSE, GDS-15, Logical Memory – WMS-III)
3. Cognitive Reserve Questionnaire
4. WMS-III (Word list and digit span subtests)
5. Trail Making Test (Part A)
6. Stroop Test
7. Boston Naming Test
8. Ecco_Senior Test, … (e.g., 4-10)

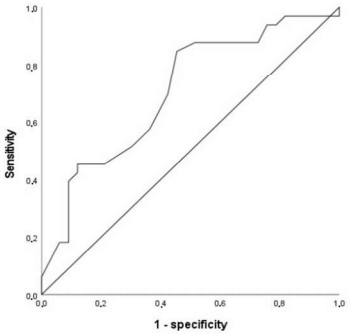


Procedure: After the screening instruments, the tests/tasks were applied in the following two sessions, along with other neuropsychological tests and questionnaires selected for the broader study, in the same order for all participants.

3. RESULTS

	GROUP		*F* (1,63)=	Significance *p*=	Partial Eta Square	Observed Power
	Controls *Mean (SD)*	SCD *Mean (SD)*				
Age	70.39 (4.31)	70.30 (4.33)	0.00	0.96	0.000	0.050
Years of education	14.58 (5.64)	14.85 (5.31)	0.09	0.75	0.002	0.061
Cognitive reserve	15.30 (3.59)	15.18 (3.24)	0.01	0.92	0.000	0.051
MMSE	29.13 (1.10)	28.67 (1.19)	2.07	0.15	0.032	0.294
MEMORY						
Digit reordering	12.75 (1.80)	12.00 (2.16)	2.38	0.13	0.036	0.331
Digits: backward	5.63 (1.79)	5.87 (2.31)	0.21	0.65	0.003	0.074
Word List—immediate recall	31.30 (5.56)	29.58 (6.86)	0.11	0.74	0.002	0.063
Word List—delayed recall	7.94 (2.39)	5.94 (2.97)	9.06	0.004	0.126	0.843
EXECUTIVE FUNCTIONS						
FAS	41.03 (14.08)	39.79 (12.84)	0.14	0.71	0.002	0.066
Semantic Verbal Fluency (animals + fruits)	33.55 (6.57)	30.94 (6.62)	2.28	0.14	0.035	0.318
TMT-A time	50.94 (16.64)	54.36 (17.44)	0.85	0.36	0.013	0.148
Stroop's interference condition	49.34 (7.99)	43.13 (8.69)	9.50	0.003	0.131	0.859
LANGUAGE						
BNT	53.44 (4.72)	52.44 (5.78)	1.32	0.25	0.021	0.205
ECCO: non-canonical sentences	14.72 (1.98)	13.57 (2.25)	4.02	0.049	0.060	0.506
ECCO: sentences with 2 propositions	15.69 (2.24)	14.57 (2.55)	2.93	0.09	0.044	0.392

	B	Standard Error	Wald	df	Sig.	Exp(B)
Delayed recall	−0.200	0.112	3.22	1	0.073	0.818
Stroop's interference	−0.090	0.033	7.35	1	0.007	0.914
ECCO non-canonical sentences	0.025	0.162	0.026	1	0.873	1.026



ROC analysis was performed using Stroop's interference condition scores and SCD as a positive success criterion. This analysis resulted in an AUC of 0.706, 95% CI [0.580–0.831], p = 0.004; this value means that the model has a fair diagnostic accuracy. According to Youden's index, **an ideal cut-off = 49 in the Stroop's interference condition** (naming word's colors) was determined, corresponding to a sensitivity of 0.848 and a 1-specificity of 0.455.

4. CONCLUSION

- This work highlights **subtle but significant neuropsychological differences in older adults with subjective cognitive decline** (SCD) compared to a matched control group, specifically in delayed recall, inhibitory control, and sentence comprehension. Additionally, **Stroop's interference condition emerged as a key discriminator** for participants' classification, with a proposed clinical cut-off score offering potential utility for early detection (3).

5. REFERENCES

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