

OBJECTIVE

- Patients with Parkinson's disease (PD) often show mild cognitive impairment in at least one cognitive domain such as episodic memory, executive functions, visuospatial construction and working memory/attention. [1]
- A common cognitive rehabilitation (CR) program could be described as a behavioral treatment for cognitive impairment which focused on cognitive abilities and daily living activities, which is based on the restoration, compensation and optimization of the cognitive functions. [2]
- CR might enhance or support functioning required for everyday activities, reducing the need for institutionalisation and supporting community participation. [3]
- The CR group reported improvements of goal relating to medication management, planning and executing complex tasks, learning new skills. [3]
- The aim of the present study was to investigate the efficiency of cognitive rehabilitation in comparison to relaxation therapy in patients with PD.

METHODS

- The prospective, single - blind, randomized clinical trial was conducted in patients with PD (n = 16).
- Participants underwent a neuropsychological examination to distinguish the presence of mild cognitive impairment and met the United Kingdom PD Society Brain Bank criteria.
- Participants were randomised to cognitive rehabilitation group (CRG) and relaxation therapy group (RG).
- Both types of interventions were carried out in groups, once a week for 60 minutes for 12 weeks.
- CRG trained cognitive functions in the context of daily activities. Participants also performed exercises at home.
- RG underwent relaxation therapy (music and art therapy).

Table 1: Demographic and Clinical Characteristics

Variables (M ± SD)	CRG (n = 8)	RG (n = 8)
Age (years)	68.1 ± 3.94	65.6 ± 5.8
Education (years)	15.6 ± 3.42	15 ± 2.5
Race (Caucasian, %)	100	100
Sex (male, %)	50	50
DRS-II	140.9 ± 2.85	141 ± 4.28

DRS-II = Mattis Dementia Rating Scale-2

Table 2: Types of interventions

	Types of interventions	Particular approaches
Cognitive rehabilitation (CRG)	Compensatory strategies	Reminders Calendar Diary
	Restorative strategies	Mnemonics Mind Maps Mindfulness Structured cognitive training Executive function training
Relaxation therapy (RG)	Music therapy	Music and sounds improvisation Everyday sounds Expression of emotions
	Art therapy	Expression with drawing Drawing with right hemisphere Modelling with clay

RESULTS

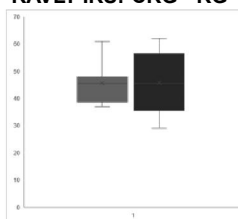
The pilot results of non-parametric analyses indicate based on Wilcoxon Signed Ranks Test (two-tailed, $\alpha < .05$):

Most important findings:

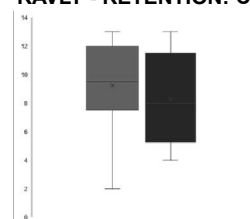
- **RAVLT-IRS:** CRG ($p = .012$), RG ($p = .012$)
- **RAVLT-RETENTION:** CRG ($p = .044$), RG ($p = .105$)
- **RAVLT-DR:** CRG ($p = .02$), RG ($p = .04$)
- **BVMT-R TOTAL RECALL:** CRG ($p = .128$), RG ($p = .012$)

Most important findings expressed as boxplots:

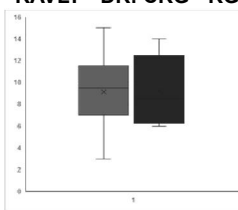
RAVLT-IRS: CRG - RG



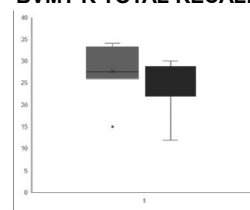
RAVLT - RETENTION: CRG - RG



RAVLT - DR: CRG - RG



BVMT-R TOTAL RECALL: CRG - RG



RAVLT-IRS = Rey Auditory Verbal Learning Test Immediate Recall Score (Trial 1+2+3+4+5; range 0-75); RAVLT-RETENTION = recall after interference (range 0-15), RAVLT-DR = Delayed Recall (range 0-15), BVMT-R TOTAL RECALL = Trial 1+2+3 (range 0-32), CRG = Cognitive rehabilitation group, RG = Relaxation group

CONCLUSION

- The results of the pilot study indicate positive effect of CR to the verbal learning, verbal memory and delayed recall performance in short-term perspective of patients with PD.
- Participants of RG showed significant improvements in verbal learning, delayed recall from verbal and visual memory. There is no evidence of permanency effect.
- The pilot data show the non-specific effect of the CR, other type intervention could be also effective to the cognitive functions of patients with PD
- Further work requires larger cohort of participants with PD and long-term monitoring of their cognitive performance.

REFERENCES

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