

# A multicentre randomized controlled trial of cognitive remediation therapy in schizophrenia

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**FIDMAG**  
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*Research Foundation*



# Multicentre study of HERMANAS HOSPITALARIAS

- Benito Menni CASM, Sant Boi de Llobregat, Barcelona
- Psicoclínica Mare de Déu de la Mercè, Barcelona
- Clínica San Miguel, Madrid
- CA Benito Menni Ciempozuelos, Madrid
- Hospital de San Luis, Palencia
- Centros de Rehabilitacion Picosocial de Aranjuez and Vallecas, Madrid
- Hospital Sagrat Cor Martorell, Barcelona



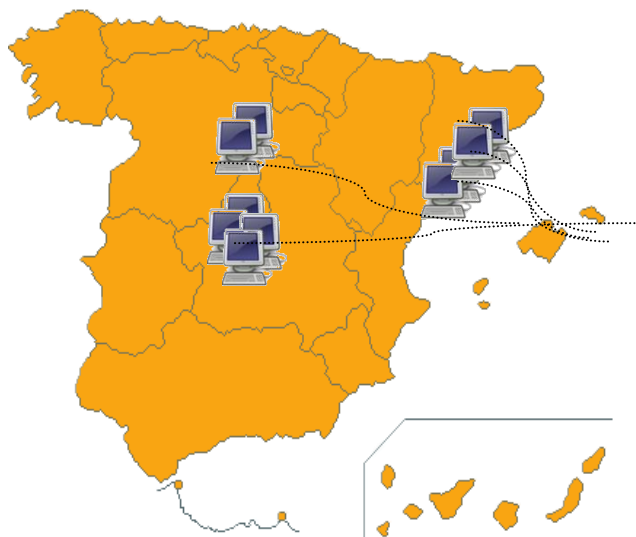
# Cognitive impairment in schizophrenia:

- Recognized as prevalent and substantial in schizophrenia
- Generalized but affects particularly executive function and memory.
- Makes a substantial contribution to poor outcome

## Cognitive remediation therapy (CRT)

- Provides intensive 'drill and practice' type training: (Exercises for memory, attention and executive function, etc..)
- Improvement is expected to take place on training exercises
- The hope is that this will generalize to better performance on other tasks in the cognitive domains trained
- Wykes et al, 2011 meta-analyze about 40 studies and found significant effect size for improvement in CRT compared to TEA or control intervention.
- But negative findings in one large, well-controlled trial: Dickinson et al, 2010

# Study design



Online CRT  
[www.feskits.com](http://www.feskits.com)

**Computerized CRT**  
(Attention, memory and executive function components of the programme)

**Computerized control (CC)**  
(typing programme)  
**Treatment as usual (TAU)**

T1 and T2:  
Neuropsychological tests  
Carer ratings of cognitive failures in daily life

## 7 centres of Hermanas Hospitalarias

130 patients with schizophrenia  
43 CRT (39 analyzed)  
44 CC (32 analyzed)  
43 TAU (36 analyzed)

**Random assignment**  
CRT, CC or TAU.

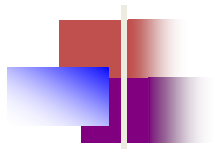
ITT analysis

Blind evaluations

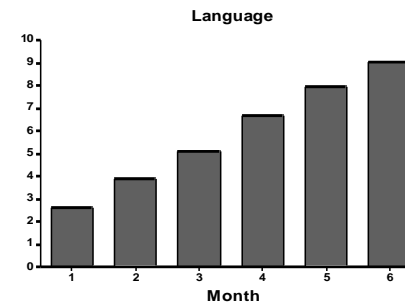
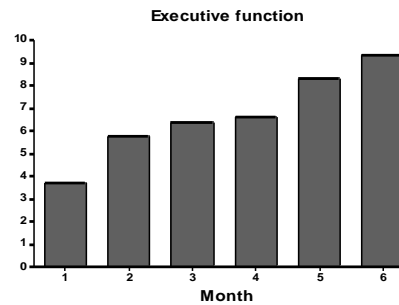
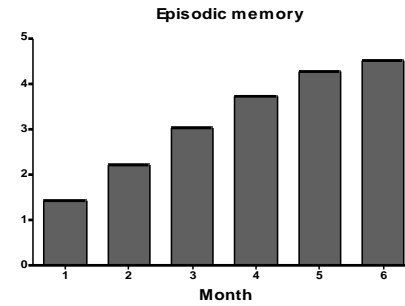
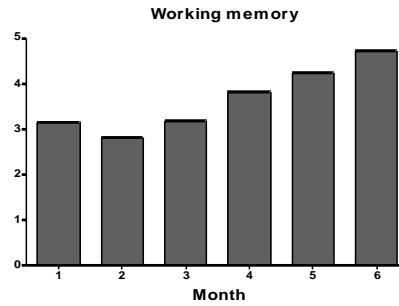
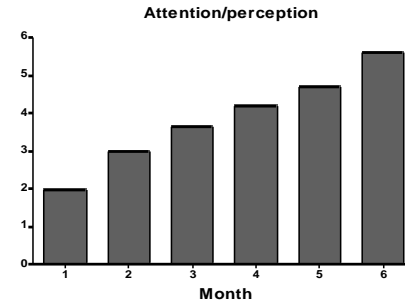
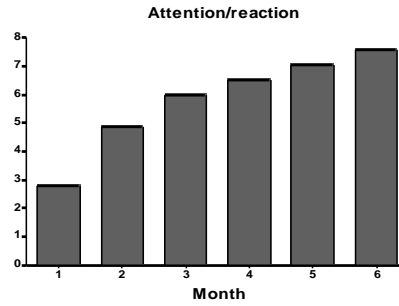


# Baseline characteristics

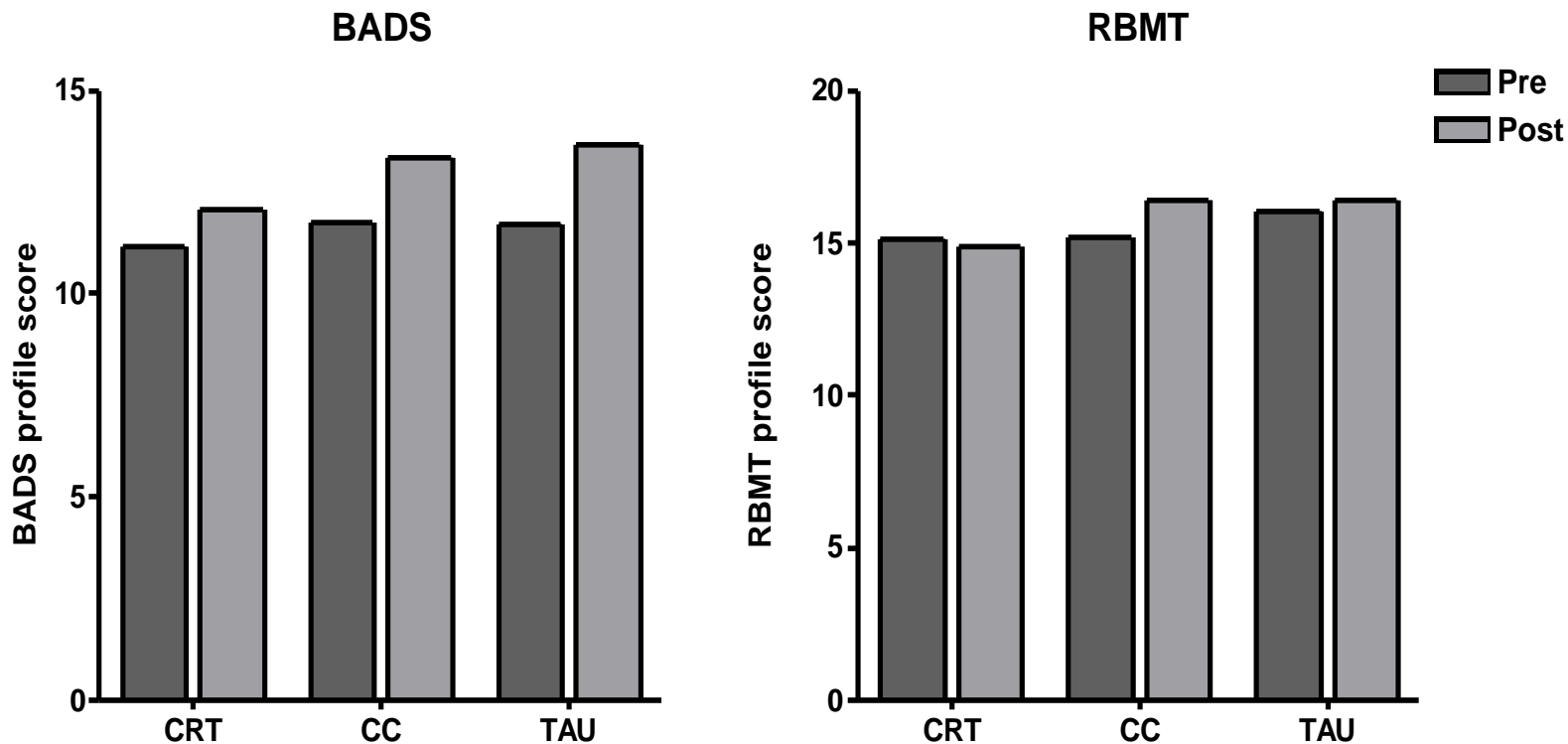
	TAU (N=43)	CC (N=44)	CRT(N=43)	Comparison	p-value
Gender, M/F	32/11	28/16	29/14	$\chi^2 = 1.20$	0.55
Age	45.40 (9.77)	46.13 (10.11)	46.68 (9.97)	F= 0.18	0.84
Years of education	10.33 (2.65)	9.53 (3.08)	9.30 (2.86)	F= 1.50	0.23
Estimated premorbid IQ (TAP)	100.70 (9.36)	99.59 (9.90)	98.76 (9.97)	F= 0.42	0.66
Current IQ (WAIS)	87.49 (15.48)	86.70 (16.12)	84.23 (16.05)	F= 0.49	0.61
PANSS total	76.85 (19.12)	75.22 (20.75)	75.60 (18.49)	F= 0.08	0.92
Antipsychotic dose (CPZ equivalents)	675.92 (518.80)	667.14 (537.80)	557.21 (333.19)	F= 0.77	0.47
No. receiving anticholinergics	6	8	9	$\chi^2 = 1.24$	0.54



# Improvement on the training exercises in the CRT group



# Findings on primary outcome measures



No significant group x time interaction for either RBMT (Rivermead Behavioural Memory Test) or BADS (Behavioural Assessment of the Dysexecutive Syndrome ) scores

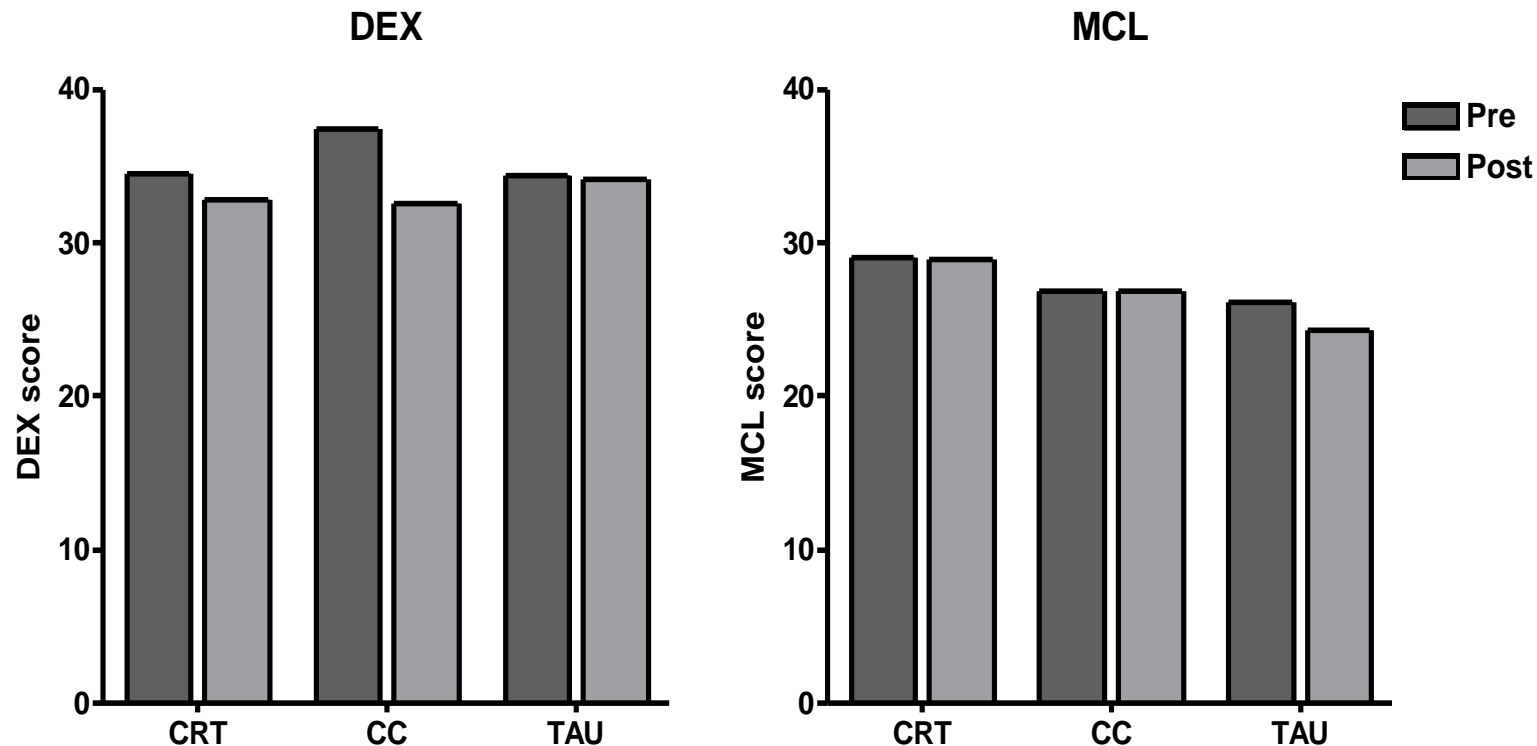
# Other neuropsychological tests



- **UPSA** (University of California Performance Skills Assessment)
  - No significant group x time interaction
- **Specific neuropsychological tests**
  - Significant group x time for digit span (CRT/CC > TAU)
  - Significant group x time interaction for memory for faces (CRT > CC/TAU)
    - *But* did not survive FDR correction for multiple comparisons.



# Carer ratings of daily life cognitive failures



Group x time interaction not significant for the MCL (Memory Checklist)  
Group x time interaction significant for DEX (Executive function) ( $p = 0.03$ ); due to decreases in scores over time in the CC group



# Conclusions

- **Our findings are negative for CRT**
  - Similar to Dickinson et al's study
- **Why do our findings differ from the results of Wykes' et al's meta-analysis**
  - Wykes et al's meta-analysis did not examine moderating effects of bias rigorously (especially incompleteness of outcome data) . Furthermore many studies of the meta-analysis with small samples and problems with the design.
- **Is CRT ineffective?**
  - Our results apply only to computerized CBT
  - Wykes currently argues that individualized CRT with teaching of strategies is more effective

# The CRT Study Group of Hermanas Hospitalarias centres



**JJ Gomar**

**E Valls**

**J Raduà**

**C Mareca**

**J. Tristany**

**F del Olmo**

**C Rebolleda**

**M Jañez**

**FJ de Álvaro**

**M<sup>a</sup> R Ovejero**

**A Llorente**

**C Teixidó**

**AM Donaire**

**E García**

**A Lazcanoiturburu**

**L Granell**

**C de Pablo Mozo**

**M Pérez-Hernández**

**A Moreno**

**E Pomarol-Clotet**

**PJ McKenna...**

... and many others!