



# Who benefits most from Cognitive Rehabilitation? a subgroup analysis of a randomised controlled trial (RCT)



Nadina Lincoln on behalf of the CRAMMS study group (cramms@nottingham.ac.uk)

## BACKGROUND

- 40-60% of people with multiple sclerosis (MS) have problems with memory and attention.
- Cognitive rehabilitation, a structured set of therapeutic activities designed to support people with cognitive impairment, is believed to be effective, but the evidence is inconclusive.
- The overall aim of the CRAMMS trial was to investigate the effectiveness of group-based cognitive rehabilitation.
- The aim of this part of the study was to determine whether baseline cognitive factors affected the primary outcome.

## METHODS

- Multi-centre, single blind, parallel group RCT.
- Participants identified through NHS services and self-referral and individually randomised (ratio 6:5) to cognitive rehabilitation or usual care alone.
- Followed-up 6 and 12 months after randomisation.
- Primary outcome: Multiple Sclerosis Impact Scale Psychological subscale (MSIS-Psy) at 12 months.
- Assessed at baseline on MS Neuropsychological Questionnaire, Doors and People test and Symbol Digit Modalities test

## PARTICIPANTS

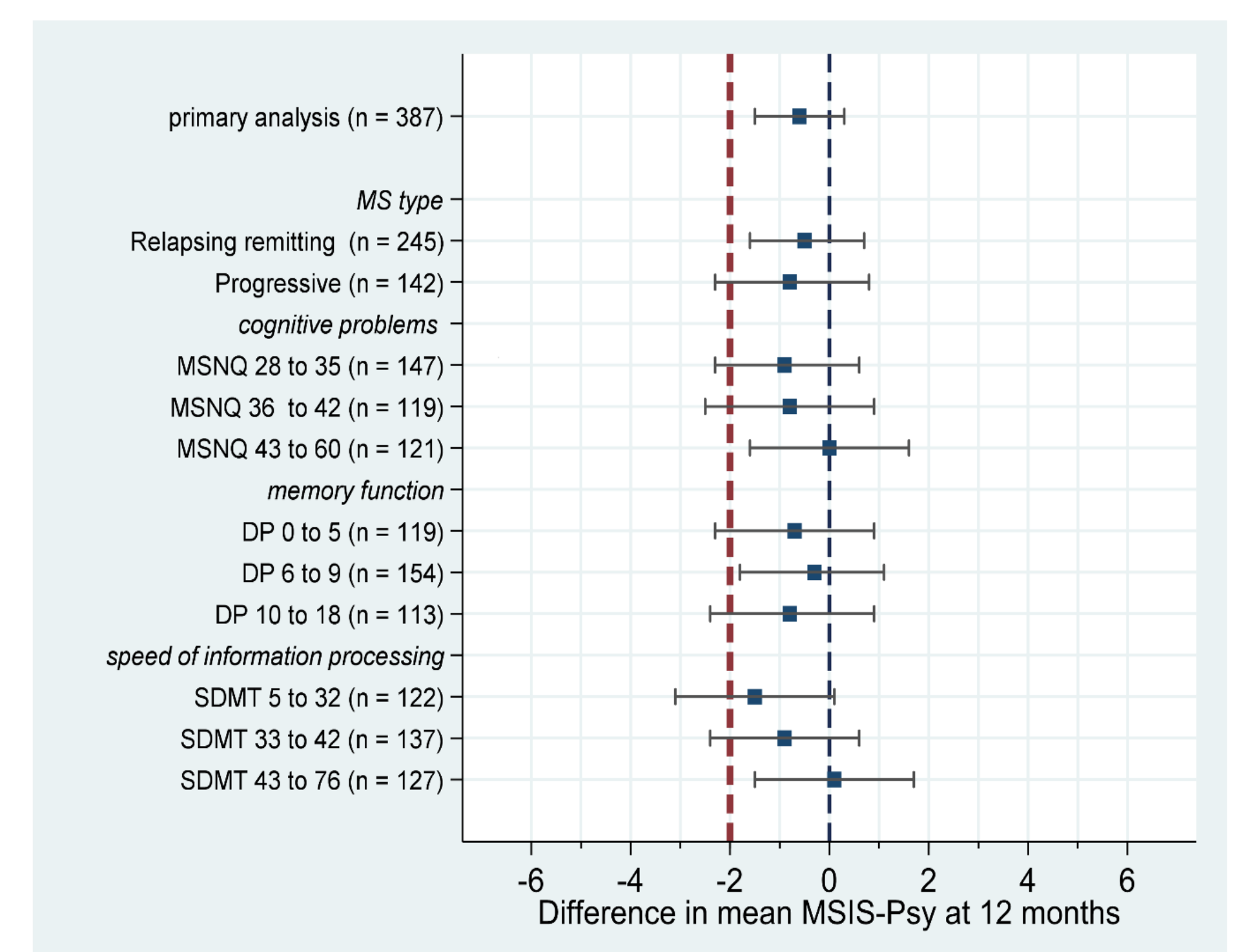
- Included:**
- 18 to 69 years.
  - MS diagnosed >3 months prior to recruitment.
  - Attention and memory problems.
  - Able to travel to attend group sessions.
  - English speaking.
  - Gave informed consent.
- Excluded:**
- Unable to complete cognitive assessments.
  - Concurrent severe medical or psychiatric conditions.
  - Involved in other psychological intervention trials.

## COGNITIVE REHABILITATION

- Manualised group programme.
- 10 sessions led by an Assistant Psychologist with 4-6 participants per group.
- Restitution strategies to retrain impaired attention and memory functions.
- Compensation strategies to enable participants to cope with cognitive problems.

## RESULTS

- 449 participants randomised (245 intervention, 204 control) from 5 sites.
- Mean age 49 years (SD 9.9), 73% were women, 96% were white.
- 387 participants included in the primary analysis (214 intervention, 173 control).
- No clinically important difference between the groups on the MSIS-Psy at 12-months (Intervention mean 22.2, SD 6.1, control mean 23.4, SD 6.0), adjusted difference in means -0.6 (95% CI -1.5 to 0.3, p=0.20).
- Although there was a trend to those with fewer cognitive problems showing greater benefit on the MSIS-Psy, there were no statistically significant differences in the effect of cognitive rehabilitation according to type of MS (interaction effect p=0.79), self-reported cognitive problems (interaction effect p=0.71), memory function (interaction effect p=0.92) or speed of information processing (interaction effect p=0.38).



## DISCUSSION

The results showed no significant differences in the effects of cognitive rehabilitation according to baseline self reported cognitive problems, memory and speed of information processing abilities. Further research should investigate who benefits most from cognitive rehabilitation in terms of the secondary outcomes, such as the frequency of self-reported memory problems and mood. This would enable intervention to be targeted at those who may show greater benefit.

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