Research evidence for cognitive rehabilitation in MS

Presented by:

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RehabGroup Brain Injury services

Presentation overview

Presentation Overview

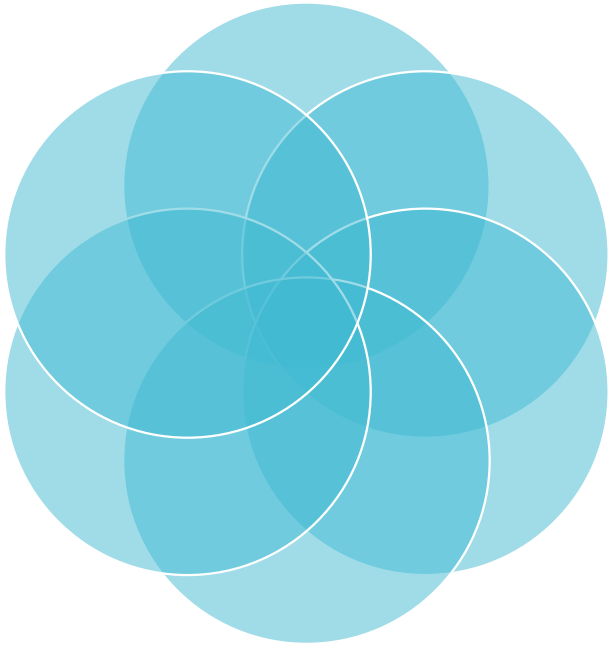
- Irish context – Neuro rehabilitation services
- MS and cognitive rehabilitation research
- Research project overview
- Findings
- Future research recommendations
- Framework for a first line intervention
- Case studies

Irish context – Neuro rehabilitation services

MS and cognition

MS and Cognition

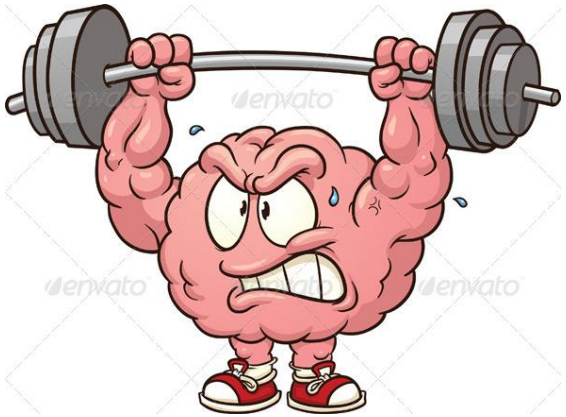
Attention/concentration



Memory

Information processing

MS and Cognitive Rehabilitation



Cognitive rehabilitation – what is it and how does it work

Plasticity, cognitive reserve etc.

What outcomes are “we” aiming for?!

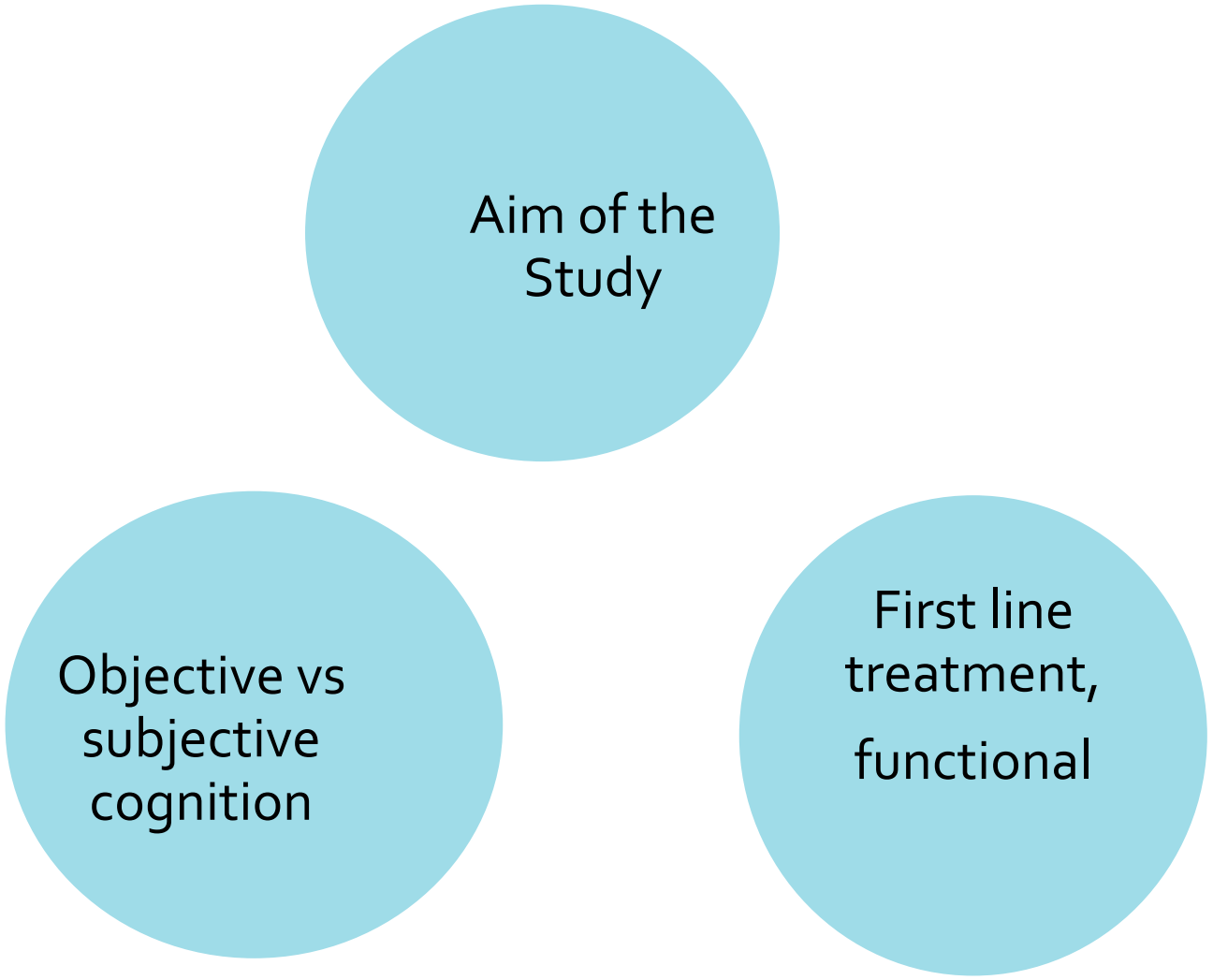
Project – aim for automaticity of strategy use

Functional and transferable/generalisable (how is this achieved)

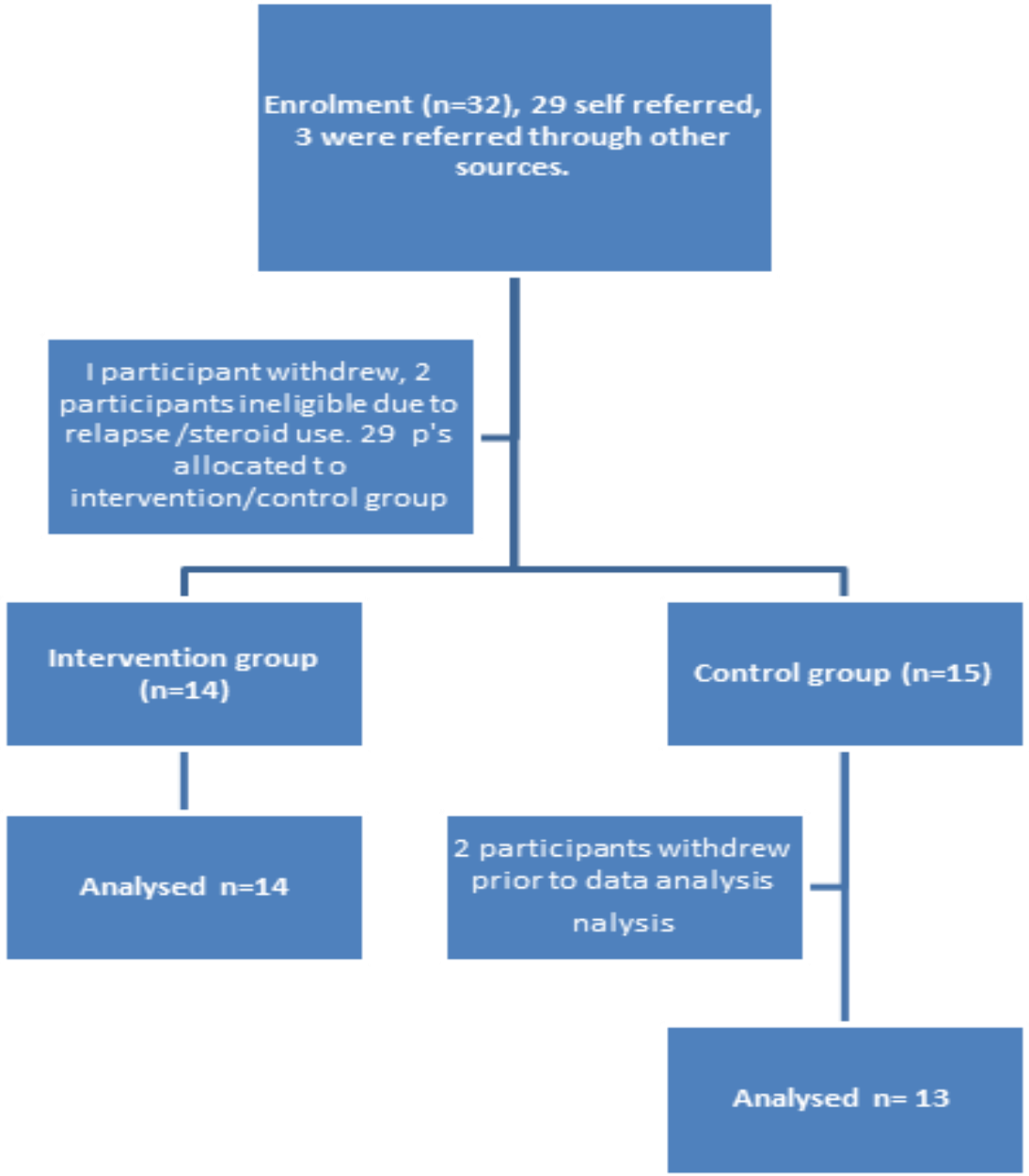
MS and cognitive rehabilitation research

- Key overarching studies
- Lack of evidence or flawed research?
- What areas do we have evidence for?
- What do we need to do differently?

MS and cognitive rehabilitation research study



Research over view- Participants



Research over view- Participants

Characteristic	Intervention group (n=14) n, (%)	Control group (n=13) n, (%)	Total (n=27) n, (%)
Age –			
Range	33-63	31-66	31-66
Mean	45.57 (SD 7.55)	47.77 (SD 11.58)	46.63 (SD 9.5762)
Gender-			
Male	2 (14%)	3 (23%)	5 (19%)
Female	12 (86%)	10 (77%)	22 (81%)
Education -			
Second level	7 (50%)	8 (62%)	15 (56%)
Third level	7 (50%)	5 (38%)	12 (44%)
MS Subtype-			
RRMS	10 (71%)	10 (77%)	20 (74%)
SPMS	4 (29%)	3 (23%)	7 (26%)
No. Years diagnosed			
Mean	10.714 (SD 6.67)	11.384 (SD 9.88)	11.03 (SD 8.21)
Range	3-23	1-28	1-28

Research over view- *Measures*

RBANS

MSQOL

PDQ

EMQ

GAS

Research overview –

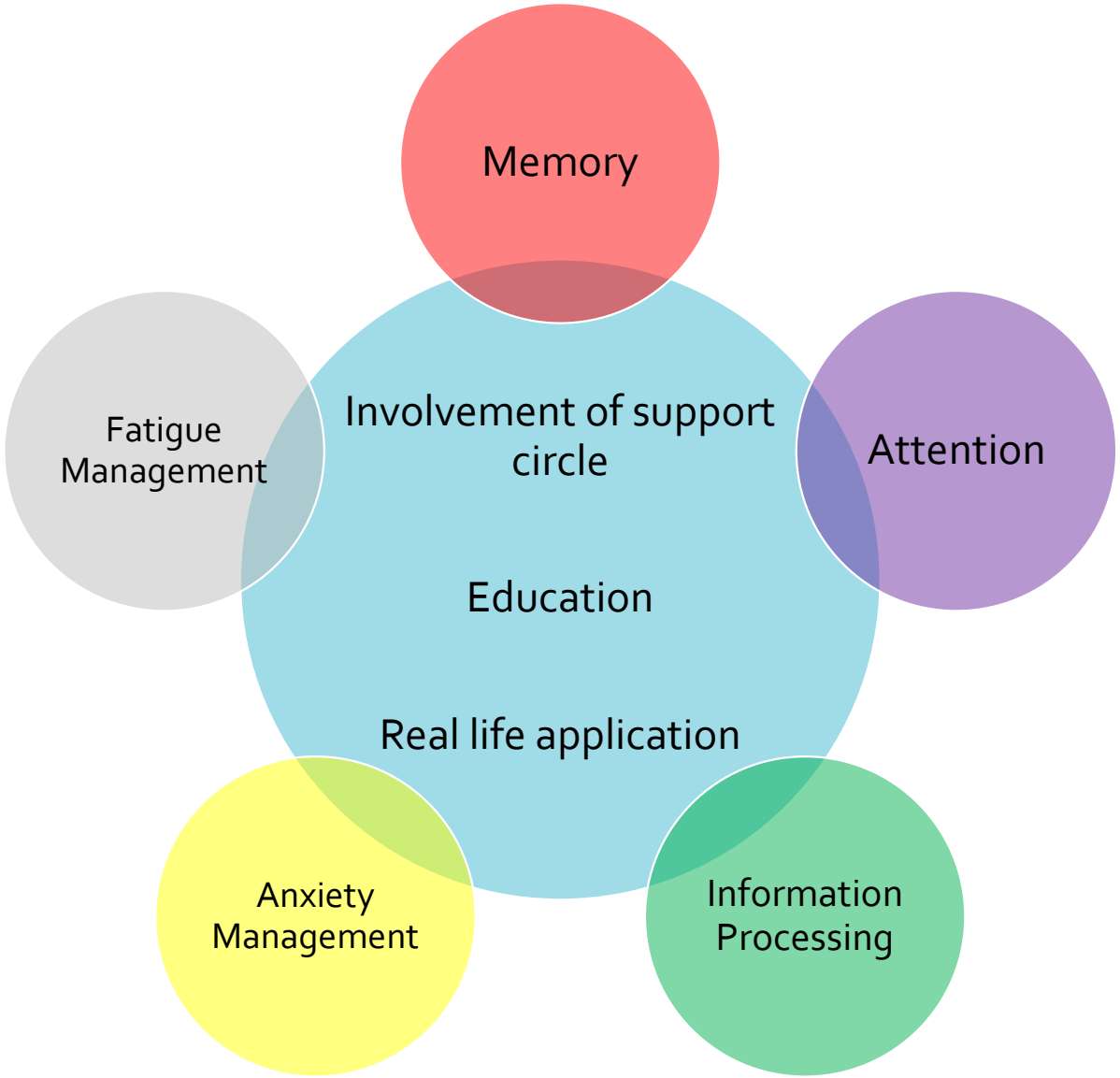
Pre intervention assessment (control and intervention group)

Intervention –

8 weekly sessions, 1-1, memory, attention, info processing, fatigue, anxiety management

Post intervention assessment (control and intervention group)

Research overview – *Evidence base for Intervention elements*

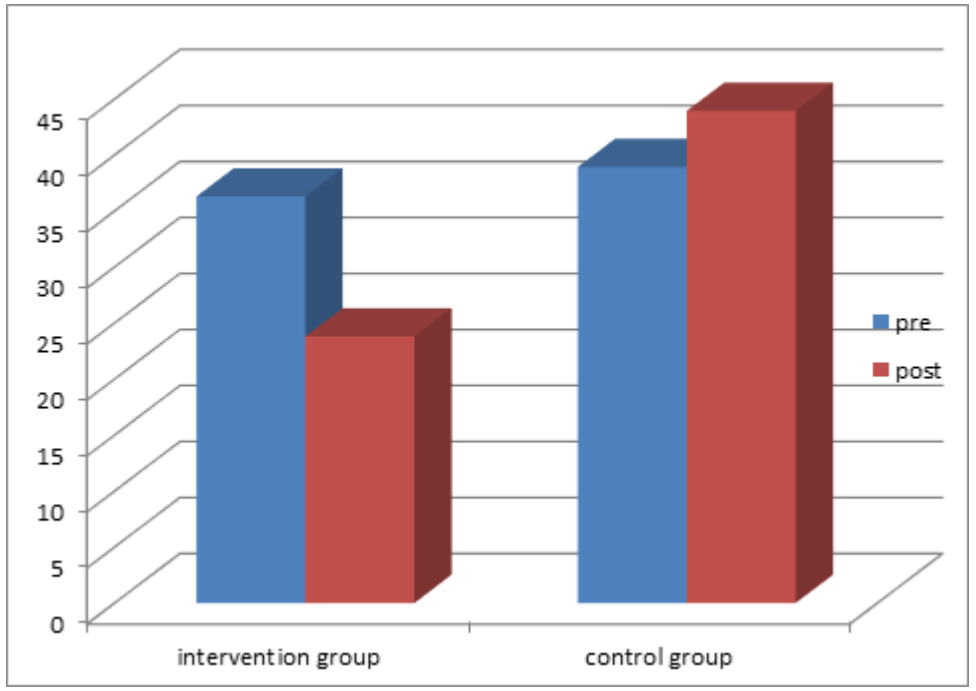


Research over view- *Results*

- Participants in the intervention group showed statistically significant improvement in both **global and domain specific areas of subjective cognitive impairment** following the intervention.

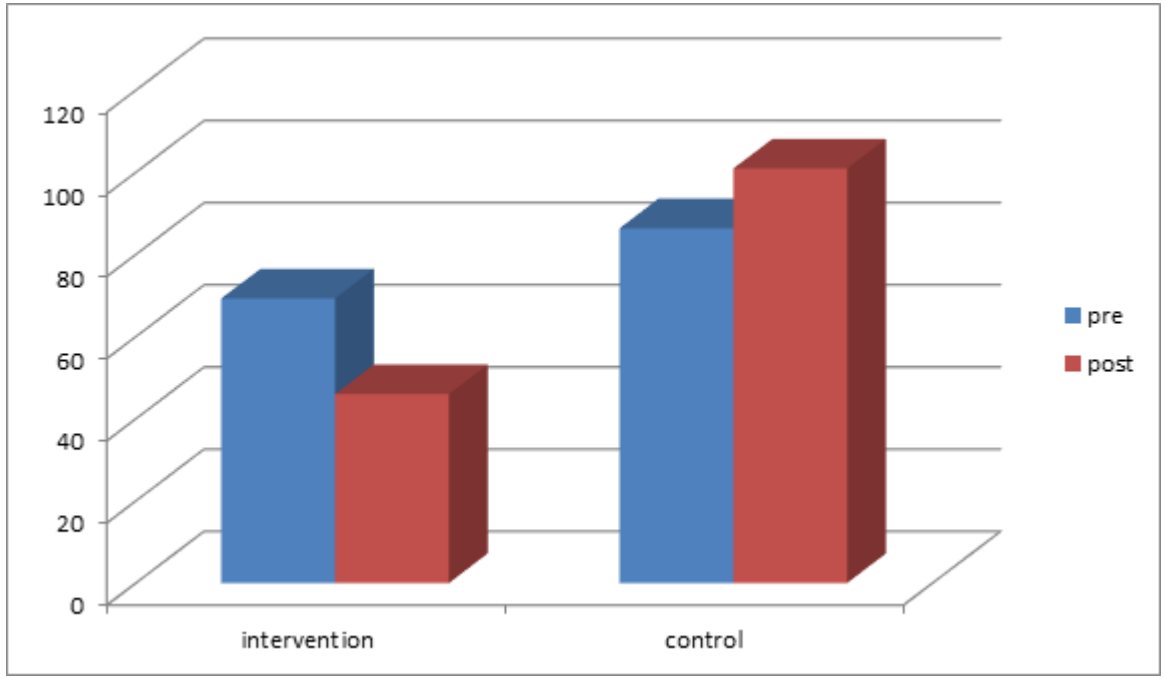
	Difference in mean scores pre and post (rounded to 2 decimal places)	F score Significance (*p<0.05)
RBANS		F= 0.296 *P*=0.59
Intervention	+12.86	
Control	+0.61	
PDQ		F= 7.22 *P*=0.013*
Intervention	-12.5	
Control	+4.99	
EMQ		F= 7.42 *P*=0.012*
Intervention	-23.29	
Control	+14.54	
MSQOL		F= 0.17 *P*=0.687
Intervention	+16.45	
Control	-3.37	

Research over view- *Results*



PDQ group mean scores at baseline (pre), and at 8 weeks (post).
Lower PDQ scores represent lower levels of experienced cognitive problems

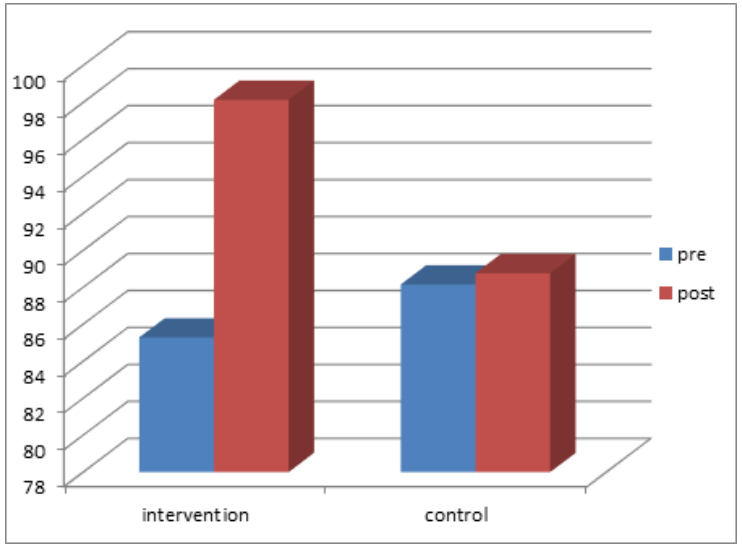
Research over view- *Results*

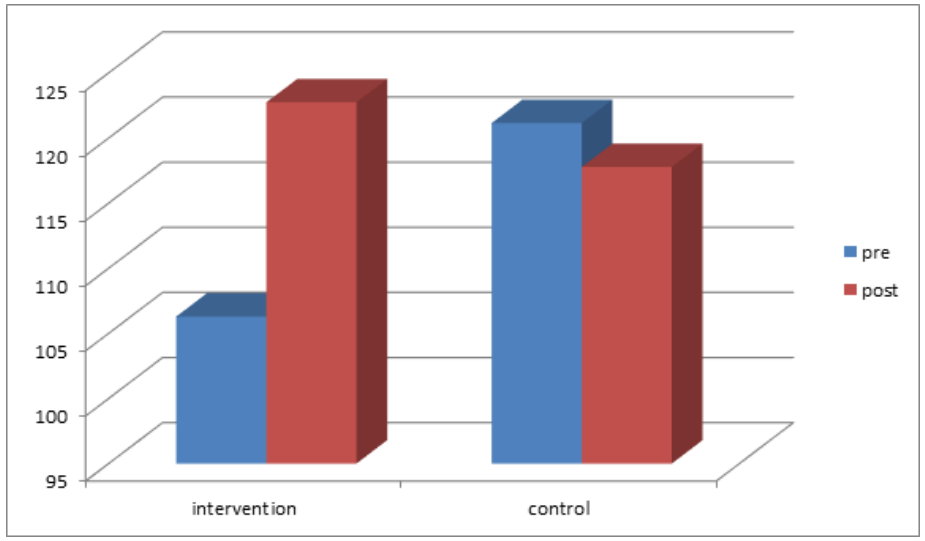


EMQ group mean scores at baseline (pre), and at 8 weeks (post).
Lower EMQ scores represent lower levels of experienced memory problems

Research over view- *Results*

- The intervention group showed greater gains than the control group in relation to objectively measured cognitive impairment, and quality of life scores, but these results were not statistically significant.

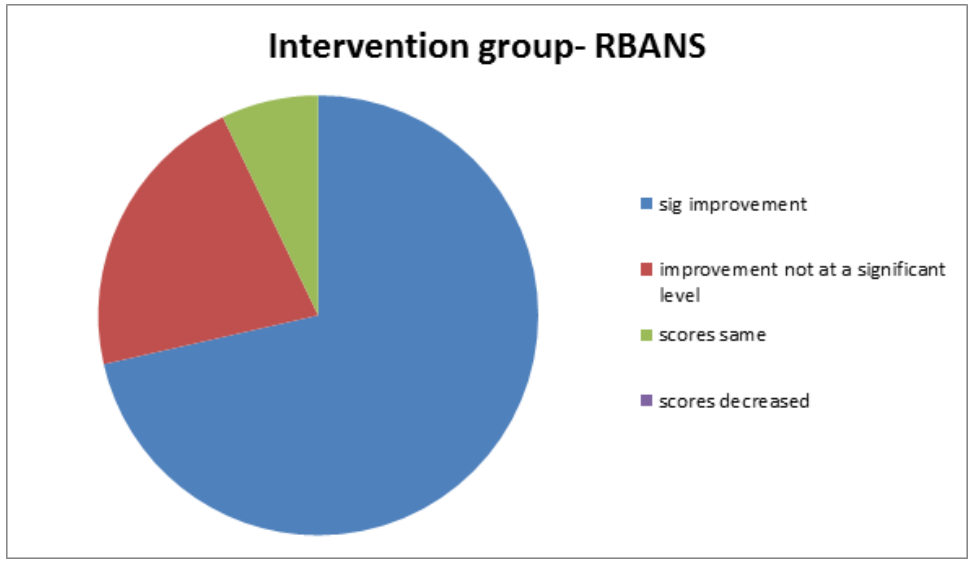


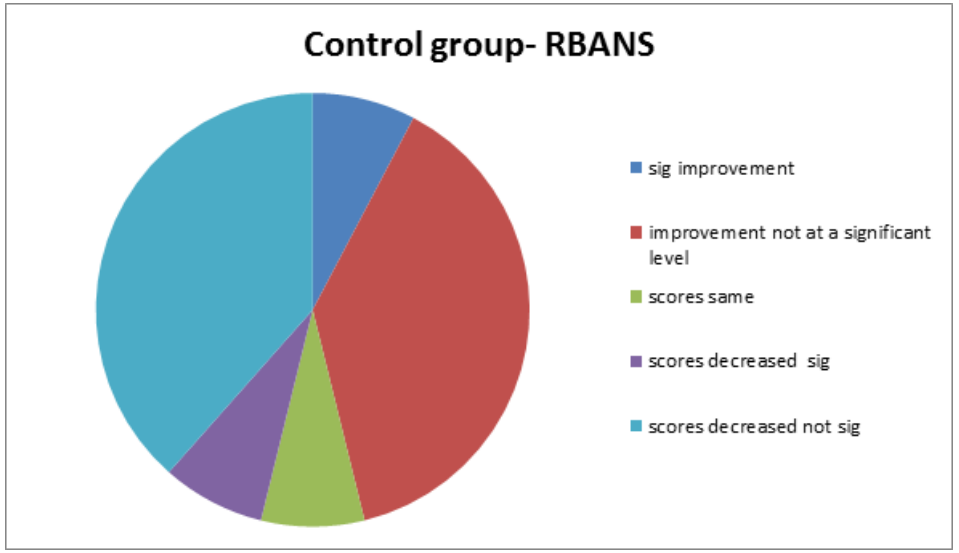


RBANS- group mean scores at baseline (pre), and at 8 weeks (post).
Higher RBANS scores indicate higher levels of cognitive functioning.

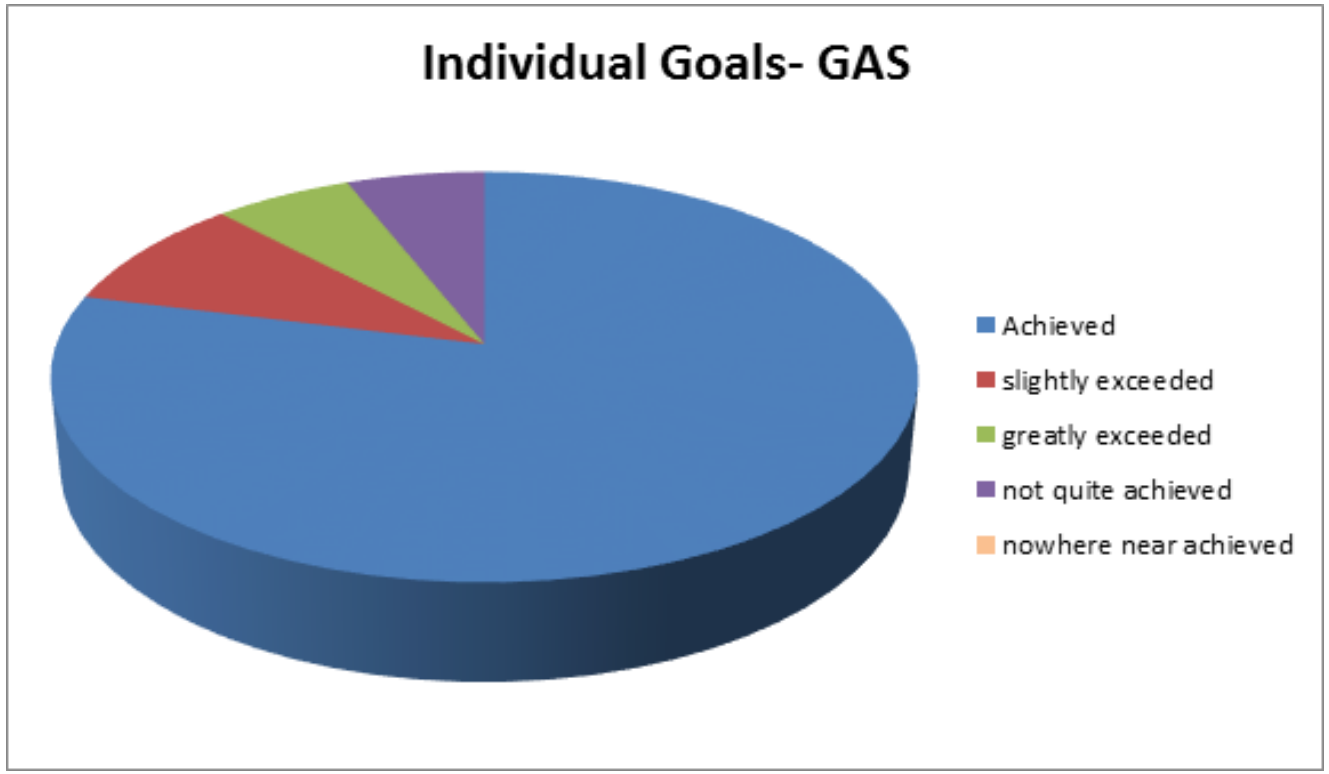
MSQOL- group mean scores at baseline (pre), and at 8 weeks (post).

Research over view- *Results*





Research over view- *Results*



Research over view- *individual functional goals*

Sample of individual cognitive goals
Increase attention by 15-20 minutes per task, and decrease fatigue to enable concentration with excel and word documents for work
Learn and utilise 1 internal strategy for remembering names
Improve STM, specifically names and remembering where things are in the house
Learn 2 strategies to help with the acquisition of new information, particularly the acquisition of new skills relating to a course
Implementation of external compensatory strategies for memory- to assist with identified household tasks
Internal memory strategies to assist with study techniques and retention for college course
Remember/retain verbal information and instructions in relation to childcare, and home based tasks
Increased ability to maintain attention in conversations
Decrease dependence on partner for one household task or social situation requiring memory. Implement strategies that can be used independently for this task, thus decreasing independence on partner.

Future Research suggestions

- Participants – Numbers, self referrals ,heterogenous group
- Study design – not RCT!
- Timeframe – 8 weeks?
- Specific domains vs multiple
- Group vs individual treatment
- Subjective vs objective cognitive functioning

Research

- Possible first line model of cognitive rehab for people with MS
- Provides the basis for further study

Case Studies

- (1) mild – university/work/kids
- (2) moderate – role development
- (3) severe-external compensatory approaches, decrease dependence on others as much as possible
- (4) severe- capacity, child protection

- Risk – working with families-

- The role of professionals

Information

- Logan-King, S. & Worthington, A. (2015), *Evaluation of a First line Model of Cognitive Rehabilitation for individuals with Multiple Sclerosis*. Unpublished Manuscript, University of Birmingham.

- This research was carried out as part of an MSc in Brain Injury Case Management, with the University of Birmingham. The project was part funded by the HSE (Irish Health service) and the Rehab Group.

- The author is an employee of the Rehab Group.

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