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Background

- Multiple Sclerosis Best Evidence-Based Strategies and Treatment/Therapies for Rehabilitation (MSBEST) was initiated by a North American team of researchers and clinicians with expertise in MS rehabilitation
- MSBEST aims to develop comprehensive, systemic reviews in MS rehabilitation care
- Review topics are shared as modules on the MSBEST platform:



Neurogenic Bowel



Bone Health



Team-Based Rehabilitation



Spasticity

Purpose

- Cognitive impairment is common in individuals with MS
- Cognitive impairment may greatly impact quality of life and lead to early leave from employment
- **Aim:** Conduct a systematic review of interventions addressing cognitive impairment in MS to inform evidenced based care and future directions

MSBEST

MULTIPLE SCLEROSIS BEST EVIDENCE-BASED STRATEGIES AND TREATMENT/THERAPIES FOR REHABILITATION

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Methods

- Following PRISMA guidelines data bases CINAHL, EMBASE, MEDLINE, PubMed, Scopus were searched
- Inclusion criteria:
 - English Language
 - Published between January 1970 and July 2020
 - Report at least one objective cognitive outcome
 - ≥ 3 adults with MS in the study
 - $\geq 50\%$ participants with MS or stratified by disorder
- Case studies, reviews, abstracts and qualitative studies were excluded
- Quality of RCTs was assessed using the PEDro tool
- The Modified Sackett Scale was applied to summarize the levels of evidence for each type of intervention studied

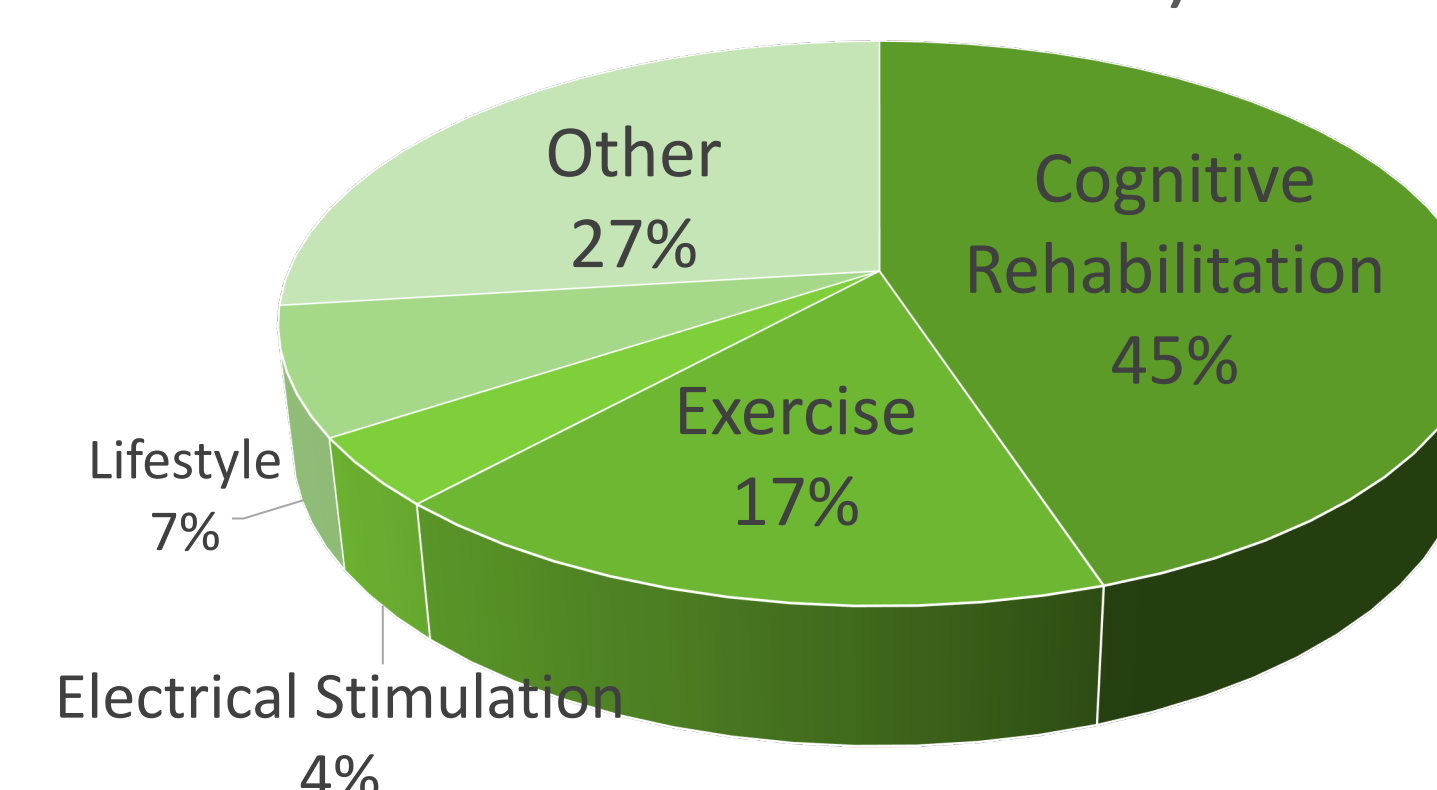
Results

- **Pharmacological interventions:** 93 articles met inclusion criteria after full text review
 - Lower level evidence (1b) supported a benefit on cognition on one or more cognitive outcomes for:
 - MS disease modifying therapies
 - Amphetamine products
 - Simvastatin
 - Tryptophan
 - Achillea millefolium (a flavonoid extract from a plant)
 - *There were no pharmacological interventions for the treatment or prevention of cognitive impairment in MS supported by high level evidence (1a)*

Results

- **Non-pharmacological interventions:** 178 articles met inclusion criteria after preliminary screening
- A large variety of interventions have been studied

Percent distribution of articles by type of intervention (n=178 articles total)



- Preliminary analysis of some of the interventions in the *other* category support emerging evidence for a benefit in at least one cognitive domain with mental imagery, story memory and video game interventions
- Further results for the non-pharmacological interventions will be reported on the platform MSBEST.ca

Discussion

- A rapidly growing literature exists addressing cognitive impairment in MS
- There is no high-level evidence supporting the benefit of pharmacological approaches

Future directions

Future directions: impact on real-world cognitive functioning, long-term outcomes and of combining pharmacological and non-pharmacological approaches

QR code to MSBEST Website

