Adherence to Exercise Interventions for people with Multiple Sclerosis

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Background

- The effectiveness of exercise[1] interventions in people with multiple sclerosis (MS) is well established.[2]
- For benefits to be sustained it is important that people continue to exercise over the long term.
- Adherence can be defined as "the extent to which a person's behaviour; taking medication, following a diet, and/or executing lifestyle changes, corresponds with agreed recommendations from a health care provider".[3]
- In order to decide which exercise intervention may be most effective for an individual, it is important to have information about effectiveness in light of levels of adherence to it.

Aims

The aims of the systematic review were to:

1. Summarize reported adherence and drop out data from randomised controlled trials (RCTs) of exercise interventions both during the intervention and at follow up.
2. Identify moderators related to adherence and drop out during the exercise intervention and follow up.

Methods

- An electronic search of MEDLINE, EMBASE, CINAHL, AMED, PEDro, SPORTDiscus, PsycINFO, Web of Sciences and SCOPUS was conducted in October 2018.
- Search terms were "multiple sclerosis" OR MS AND exercise OR "physical activity" AND strength OR aerobic OR fitness OR training.
- Abstracts and full texts were independently screened by two reviewers and selected for inclusion using the Rayyan data management system.
- Included studies were assessed for methodological quality using the TESTEX rating scale[2].
- Data extraction was completed by one reviewer and 10% of papers were extracted by a second reviewer for the purpose of quality assurance.

Eligibility criteria

- Randomised controlled trials
- Adults over 18 years of age with a diagnosis of MS regardless of gender, disease duration, MS phenotype or level of disability.
- Exercise interventions of any modality (location, group/ individual structure, level of supervision, intervention duration, session duration, intensity, frequency) or content (aerobic, resistance, combined, other).
- With or without inclusion of a behavioural or home exercise component.
- With or without a follow up period.
- Studies reporting balance gaming interventions (such as the Wii Fit) and activities where the participant could be passive such as hippotherapy and robotic training were excluded.
- Control interventions could include non-training controls or active controls.
- Included studies had to report an objective and/ or self-report measure of strength, aerobic capacity, endurance, fatigue, walking capacity or physical activity.

Results

- Results of the searches are summarised in figure 1.
- 51% of included studies reported adherence.
- Meta-analysis of adherence data resulted in a mean adherence of 87% (figure 2).
- Only three studies (4%) reported adherence during a post intervention follow up period.
- Mean age, proportion of females and intervention duration were inversely associated with adherence

Figure 1: Prisma flow diagram

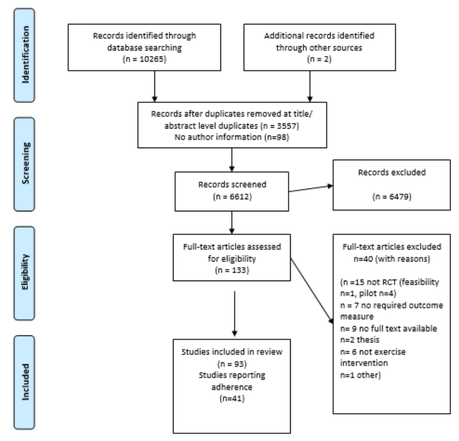
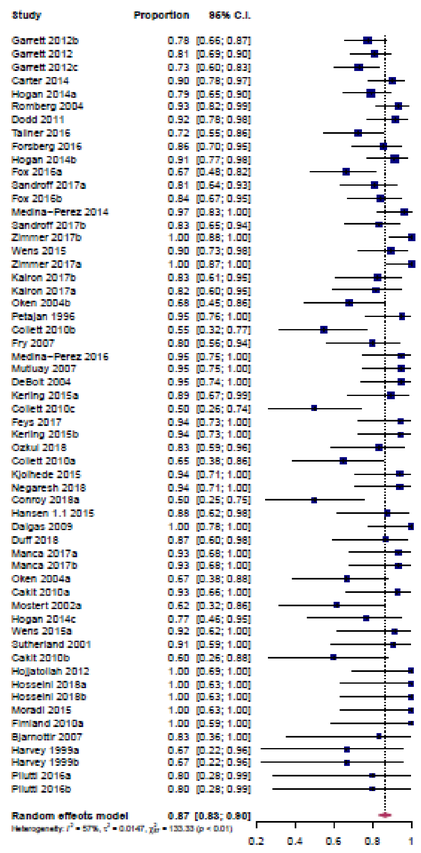


Figure 2: Meta-analysis of adherence data



Conclusions

- Methods of reporting adherence were not consistent and were generally not clear or transparent.
- Participants in exercise intervention studies are rarely followed up longer term.
- Systematic reviews are essential to inform clinical practice. Clear definitions and transparent reporting would better enable studies to be included in future reviews and more accurately inform clinicians regarding intervention effectiveness.

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