Protocol for a mixed method study: inspiratory muscle training for people with Parkinson's Disease

Mendonca, J. F.B.,[1] Preston, E.,[1] Flynn, A.,[1] Strickland K.,[2] Bissett, B.[1]
[1] Department of Physiotherapy, University of Canberra, ACT, Australia, [2] School of Nursing and Midwifery, Edith Cowan University, WA, Australia

Introduction

In people with Parkinson's Disease, up to 40% experience dyspnoea, which can limit physical activity and quality of life.

Inspiratory muscle weakness is a known consequence of Parkinson's disease and a potential contributor to dyspnoea.

Inspiratory muscle training (IMT) is feasible and acceptable to patients with Parkinson's' Disease, and appears to be associated with reduced dyspnoea and increased exercise capacity. However, there are very few good quality randomised trials exploring how IMT affects dyspnoea, quality of life outcomes or functional outcomes in people with Parkinson's Disease.

Past research that examined IMT in Parkinson's Disease has not incorporated participants' personal experiences and views when testing outcomes of an intervention. Therefore, a mixed quantitative and qualitative approach is needed.

Aims

Primary

To investigate the effect of IMT on inspiratory muscle strength in people with Parkinson's Disease.

Secondary

To determine whether improvements in inspiratory muscle strength translate into improvements in dyspnoea, quality of life, and exercise tolerance in people with Parkinson's disease.

To explore the participants' experience of taking part in the IMT program.

Method

Trial Registration Number ACTRN12622000097741

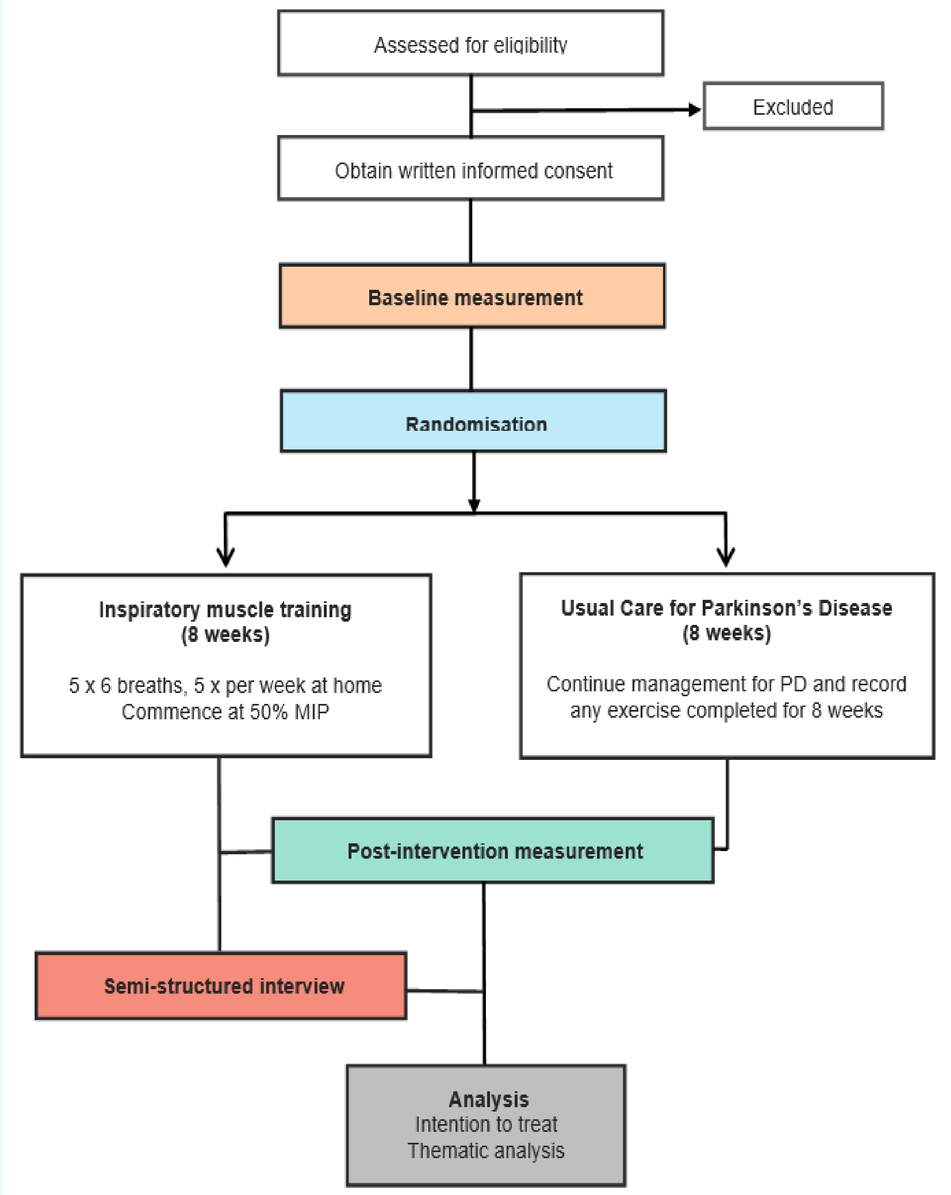
Explanatory sequential, mixed method study. The quantitative arm is a single centre randomised controlled trial with two groups.

Inclusion Criteria

- Idiopathic Parkinson's disease
- Living in the community
- Stable medication
- Answering 'yes' to having ever had trouble with their breathing.
- Able to walk independently with or without walking aid.

Exclusion Criteria

- Significant cognitive impairment MMSE < 24
- A medical condition which will interfere with assessments or the IMT program.
- Completing any type of breathing training in the last six months.



Intervention

- Five times per week for 8 weeks
- Commence at 50% maximal inspiratory pressure (MIP)
- 5 sets of 6 breaths
- Home-based
- Weekly phone call
- Record additional physical activity in addition to IMT

After completed 8-week IMT, eligible participants will take part in individual semi-structured interviews within one month of completing the intervention. Stratified purposive sampling will be used.

References

1. Baille G, Chenivesse C, Perez T, Machuron F, Dujardin K, Devos D, et al. Dyspnea: An underestimated symptom in Parkinson's disease. Parkinsonism Relat Disord. 2019;60:162-6.
2. Baille G, Perez T, Devos D, Deken V, Defebvre L, Moreau C. Early occurrence of inspiratory muscle weakness in Parkinson's disease. PLoS One. 2018;13(1):e0190400-e.

u3220564@canberra.edu.au
@FbmJuliana