



Adherence to and Acceptability of a 12-week Online Resistance Training Programme for Community-Dwelling Older Adults Receiving Home Care and At Risk of Sarcopenia

Avril McCormack ¹, Clare Corish ^{1,2}, Catherine Fallon ^{1,2}

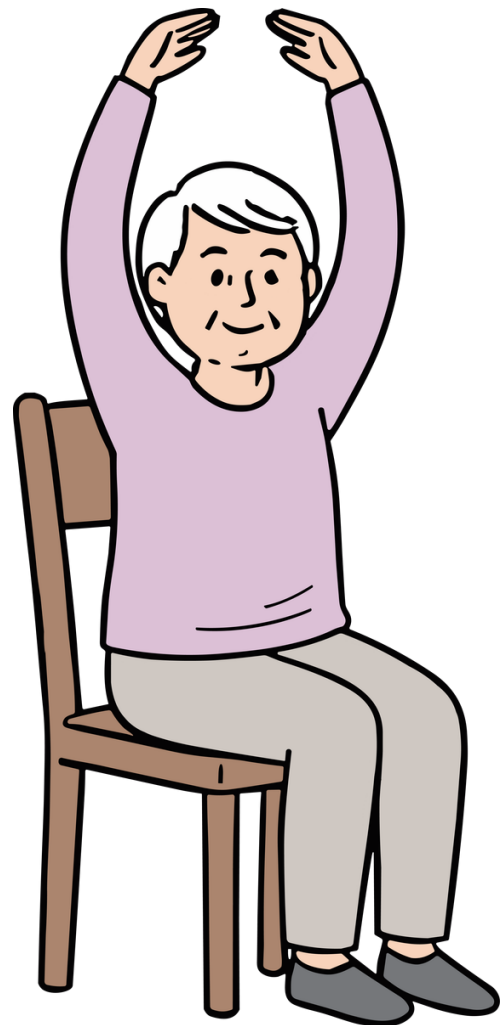
¹UCD School of Public Health, Physiotherapy and Sports Science, University College Dublin, Belfield, Dublin 4, Ireland. ²UCD Institute of Food and Health, University College Dublin, Belfield, Dublin 4, Ireland.

Introduction

Resistance training (RT) is a widely implemented intervention for maintaining and gaining muscle mass and strength in older adults with or at risk of sarcopenia^{1,2}. However, lack of knowledge about exercise, social support, facilities and transport can act as barriers to participation in RT.

The aim of this study was to investigate the adherence to and acceptability of an online RT programme, delivered on Zoom for older adults receiving home care, within a randomised controlled trial (RCT).

The POWER RCT investigated the effects of RT in combination with a whey-based oral nutritional supplement combined with an online RT programme (ONS + RT) (n=23) compared to the online RT programme alone (RT) (n=23) on physical function and nutritional status³.



Methodology

Adherence to the programme was assessed in both groups (ONS + RT and RT) at baseline and post-intervention using:

- Percentage of classes attended
- Sets completed
- Repetitions completed
- Weights used
- Rating of perceived exertion (RPE)

Acceptability of the RT programme was assessed using a bespoke study questionnaire provided to the participants post-intervention. It consisted of seven statements to which each participant provided their agreement using a 5-point Likert scale. Space was allocated for free text comments on all questionnaires.

Results

Overall Adherence

- 85% (n=39) of participants adhered to the programme (≥75% classes attended).

Within-group analysis first – last session

- Sets, repetitions and weights used significantly increased from the first to last session for sit-to-stands, shoulder press, calf raises and bicep curls in both groups.
- RPE remained consistent with the exception of an increase during calf raises for the RT group at the last session.

Between-group analysis at first and last session

- Baseline sets, repetitions, weights and RPE were similar between the ONS+RT and RT groups with the exception of RPE for calf raises (p=0.029), higher in the RT group.
- The RT group used significantly more weight at the last session than the ONS+RT group for calf raise (p=0.033) and recorded higher RPE (p=0.023) (Figure 1).

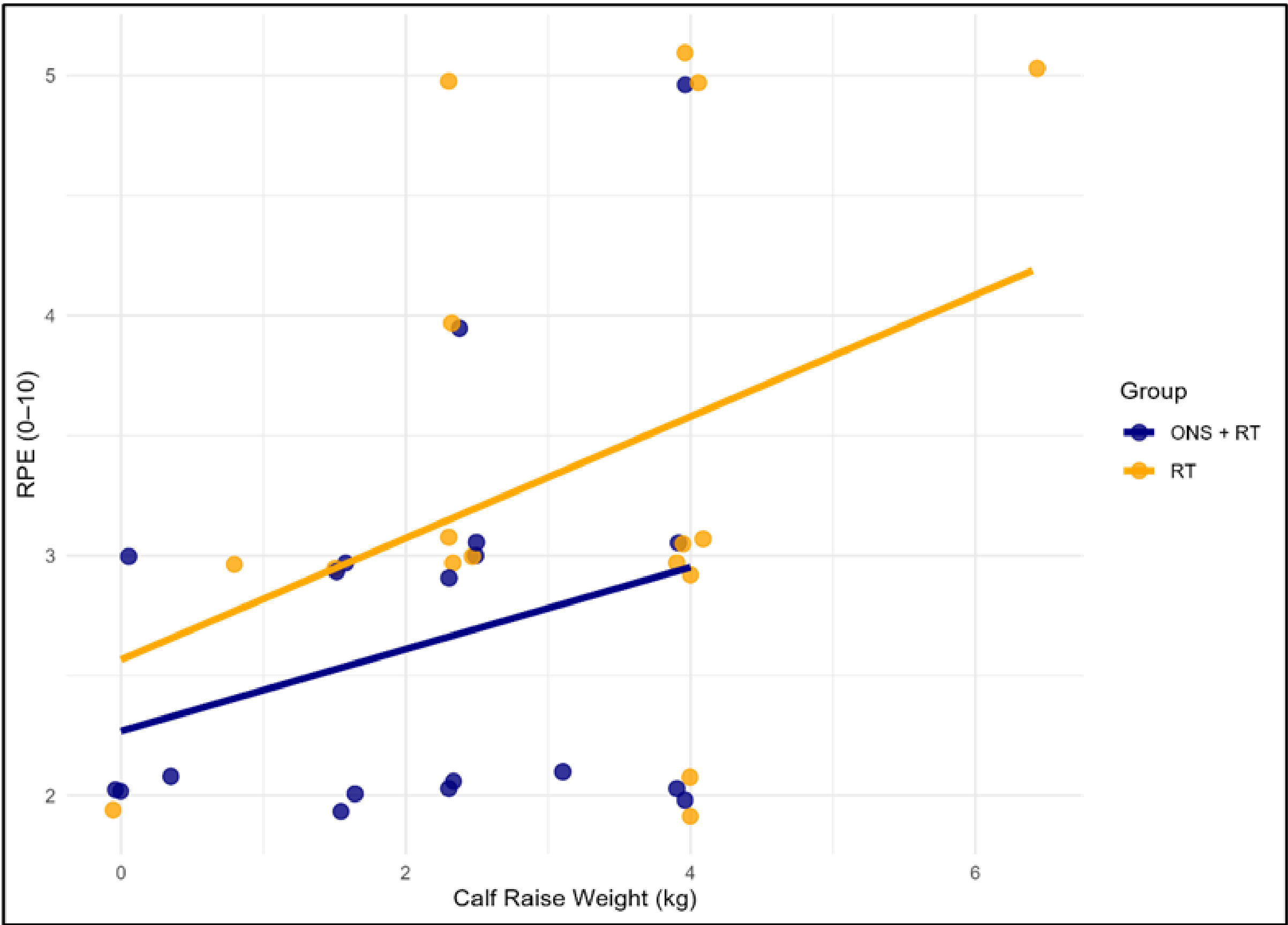


Figure 1. Calf raises at last session: weight vs RPE by group.

Acceptability

Participants found the online RT programme acceptable (Table 1).

Table 1. Acceptability of the RT programme (Likert scale responses)(n=39) (Cronbach's alpha = 0.6).

Question	Strongly disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly agree n (%)	Mean (SD)	Median (IQR)
Q1. I find Zoom easy to use	3 (8)	2 (5)	2 (5)	5 (13)	27 (69)	4.3 (1.3)	5 (1)
Q2. I find the equipment easy to use	0	3 (8)	2 (5)	11 (28)	23 (59)	4.4 (0.9)	5 (1)
Q3. I can hear the instructor clearly during the exercise class	0	0	0	0	39 (100)	5 (0)	5 (0)
Q4. I can see the instructor clearly during the exercise sessions	0	0	0	0	39 (100)	5 (0)	5 (0)
Q5. I find the exercise class easy to follow	0	0	0	1 (3)	38 (97)	5 (0.2)	5 (0)
Q6. The variety of exercises is right for me	0	2 (5)	0	3 (8)	34 (87)	4.8 (0.7)	5 (0)
Q7. The difficulty of the exercise is right for me	0	1 (3)	0	4 (10)	34 (87)	4.8 (0.6)	5 (0)

Abbreviations: SD, Standard deviation, IQR, Interquartile range

Qualitative themes and subthemes identified:

Acceptability of the Online RT Programme

- Instructor clarity and encouragement
- Social connectivity and motivation
- Acceptability of class structure and pace
- Acceptability of online delivery

Feasibility of Using Zoom for an Online RT Programme

- Familiarity of technology
- Need for technology support

Perceived Physical Benefits

- Improved physical function
- Pain management
- Confidence in physical abilities

Usability of Exercise Equipment

- Ankle weights

Conclusions

The study was shown to have high adherence and high acceptability. Participants strongly engaged with the online RT programme and followed the class consistently. Social connectivity, clarity of instruction and convenience of online delivery were key facilitators of participation, while perceived improvements in physical function further supported motivation.

References:
1. Dent E, Morley JE, Cruz-Jentoft AJ, Arai H, Kritchevsky SB, Guralnik J, et al. International Clinical Practice Guidelines for Sarcopenia (ICFSR): Screening, Diagnosis and Management. J Nutr Health Aging. 2018;22(10):1148–61. doi:10.1007/s12603-018-1139-9 PubMed PMID: 30498820.
2. Hurst C, Robinson SM, Witham MD, Dodds RM, Granic A, Buckland C, et al. Resistance exercise as a treatment for sarcopenia: prescription and delivery. Age Ageing. 2022 Feb 1;51(2):afac003. doi:10.1093/ageing/afac003
3. Fallon CM, Cunningham CG, Horner K, Corish CA. Oral nutritional supplement combined with an online resistance training programme to improve physical function and nutritional status in older adults receiving home care and at risk of sarcopenia: protocol for the randomised controlled POWER trial [Internet]. HRB Open Research; 2025 [cited 2025 Oct 10]. Available from: <https://hrbopenresearch.org/articles/8-41> doi:10.12688/hrbopenres.14086.1