

Adherence to Prescribed Exercise Dose in Cancer Survivors and their Partners

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Abstract

New ACSM guidelines recommend the integration of exercise as an evidence-based strategy to offset the adverse effects of cancer treatments on quality of life into standard care. The exercise prescriptions were derived from trial method reports which may not reflect the actual dose of exercise in relation to study outcomes. It is possible, therefore, that the dose of exercise necessary to evoke a particular benefit may differ from published recommendations. **Purpose** To report exercise adherence by comparing the prescribed exercise dose to the achieved dose of exercise in an ongoing exercise trial in cancer survivors and their partners. **Methods** Data from 25 participants enrolled in the EXERCISING TOGETHER® trial (NCT03630354), including breast cancer survivors (n=13) and their partners (n=12), was used for this analysis. Participants completed strength training sessions twice weekly for 6 months in one of two study arms: partnered group or separate survivor/partner group exercise. We examined the prescribed volume for two exercises, chair stands and step-ups, and compared to self-reported volume, collected in participant exercise logs. Prescribed training volume and received training volume was calculated (sets x repetitions x load in kg). Here, we report adherence of prescribed training volume and received training volume in the overall sample as well as adherence based on role (survivor/partner), and study arm. Comparisons between role and study arm were completed using two sample t-tests. **Results** Within person adherence to prescribed dose averaged 72.6% of classes for chair stand and 70.5% of classes for step-ups. There was not a significant difference in adherence between survivors and partners. Stratified analysis suggests survivor adherence improves and partner adherence decreases when in class together, but the study was underpowered to see significant differences between study arms. **Conclusion** Preliminary results suggest that breast cancer survivors may benefit when partners are involved in exercise, but that, in turn, may reduce the partners own benefit from exercise. Future analysis can examine achieved dose of exercise in relation to participant benefits to determine the full implications of these observations.

Introduction

- Resistance training is increasingly recognized as a behavioral strategy that can negate the adverse effects of cancer treatment. The effective dose of resistance exercise has been extracted from prescribed exercise volume reported in trial methods, but this may differ from the dose of exercise actually received during an intervention.
- Traditional metrics defines adherence to a program as attendance to prescribed sessions but this measure does not necessarily reflect the intensity and duration of training performed during a session.
- We aim to report exercise adherence by comparing the prescribed exercise dose to the achieved dose of exercise in an ongoing exercise trial in cancer survivors and their partners.

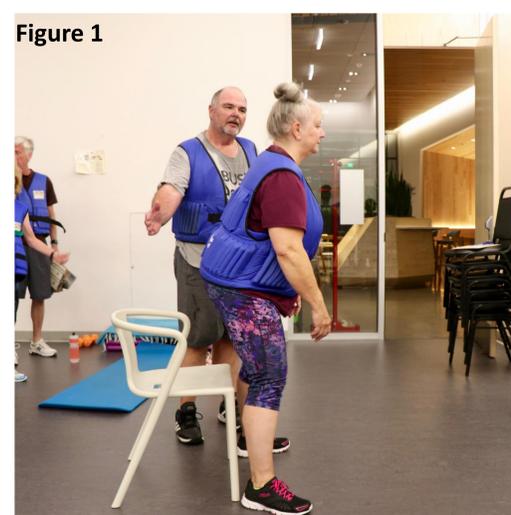
Methods

- Data from 25 participants enrolled in the EXERCISING TOGETHER® trial (NCT03630354), including breast cancer survivors (n=13) and their partners (n=12), was used for this analysis.
- Participants completed strength training sessions twice weekly for 6 months and were randomized into one of two study arms: partnered group (Partnered) or separate survivor/partner group (Separate) exercise.
- We examined the prescribed volume for two exercises, chair stands and step-ups, and compared to self-reported volume, collected in participant exercise logs.
- The prescribed training volume and received training volume was calculated (sets x repetitions x load in kg). Adherence to the program was calculated by comparing the prescribed training dose and received dose per session attended.
- We reported adherence of prescribed training volume and received training volume in the overall sample as well as adherence based on role (survivor vs. partner), and study arm (Partnered vs. Separate). Adherence is the percent of total exercise sessions where the received dose was equal to or greater than the prescribed dose. If an exercise session was missed, the received dose was recorded as less than the prescribed dose. Comparisons between role and study arm were completed using two sample t-tests.

Table 1. Baseline characteristics, data presented as median (range) or % of sample for categorical data.

Characteristic	All (n = 25)	Survivors (n = 13)	Partners (n=12)
Age (years)	65 (50-79)	62 (50-78)	62 (53-79)
Gender			
Female	56%	100%	8.33%
Male	44%	-	91.67%
Race			
White	96%	100%	91.67%
Native Hawaiian/ Pacific Islander	4%	-	8.33%

Figure 1-2. Couple in the Exercising Together® trial Partnered group complete chair stands (1) and step-ups (2)



Results

Table 2. Chair stand prescribed training dose compared to received training dose based on role and study arm.

	Prescribed Dose (kg)	Received Dose (kg)	Adherence (%)
All	2726 ± 493	6766 ± 5456	72.6
Survivor (n=13)			
Partnered (n=6)	2580 ± 244	5085 ± 1557	71.8
Separate (n=7)	2824 ± 623	4682 ± 2326	63.2
Partner (n=12)			
Partnered (n=6)	2749 ± 292	6333 ± 829	73.8
Separate (n=6)	2733 ± 718	11309 ± 10176	83.1

Table 3. Step-up prescribed training dose compared to received training dose based on role and study arm.

	Prescribed Dose (kg)	Received Dose (kg)	Adherence (%)
All	2726 ± 472	5796 ± 3001	70.5
Survivor (n=13)			
Partnered (n=6)	2551 ± 232	4557 ± 1679	67.3
Separate (n=7)	2570 ± 640	4109 ± 2042	61.6
Partner (n=12)			
Partnered (n=6)	2729 ± 327	5981 ± 970	75.3
Separate (n=6)	2868 ± 596	8817 ± 4200	79.4

Conclusion

- Breast cancer survivors may achieve higher doses of exercise when partners are involved compared to when they exercise in an unpartnered program with other survivors.
- When exercising separately, partners more frequently meet or exceed prescribed doses compared to partners who exercise with survivors.
- These findings suggest that partners exhibit altruistic behavior when exercising with the survivors.

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