Physical activity (PA) promotion and sedentary behavior reduction among cancer survivors is a national priority1 and the number of PA-based behavioral interventions has expanded considerably in recent years.2

There have been relatively few trials focused on reduction of sedentary time among cancer survivors due in part to past limitations related to precise quantitative measurement of sedentary behaviors.3

Many PA interventions rely on clinic-based coaching which is both time-intensive and unrealistic for many clinics.4

The purpose of this study was to investigate the feasibility and effects of a home-based 6 week sedentary time intervention (RSTI) in breast cancer survivors who had completed primary treatment.

ClinicalTrials.gov NCT02969291

METHODS

- Phase 1 proof-of-concept/feasibility trial
- One Group Pre/Post-test Design

ELIGIBILITY CRITERIA

Inclusion Criteria:
- Less than 150 min/week moderate to vigorous exercise
- Stage I-III breast cancer survivors age 20-80 who have completed primary treatment greater than 6 months but less than 5 years.

Exclusion Criteria:
- Patients may be on adjuvant hormonal therapy.
- Adverse events related to the trial.
- BMI > 35 or < 18.5
- Impaired cognition
- Known or suspected metastatic disease
- Presence of any concomitant medical conditions that would preclude full participation in the study

Figure 1. Study Flow (PA=Physical Activity, SB=Sedentary Behavior)

RESULTS

In Table 1, the participant demographics are shown. The total number of participants was 16. The majority of the participants were white (87.5%) and female (100%).

In Table 2, the sedentary & activity outcomes are presented. The total daily energy expenditure/day (kcal) was compared between pre-intervention and post-intervention. The percentage change was calculated as (Post - Pre) / Pre * 100.

CONCLUSION

Results indicate that similar home-based RSTIs are safe, acceptable to survivors, and feasible to implement by cancer center staff. Further research with larger samples and possible monitoring of interruptions in total sedentary time may be needed to establish efficacy and effect sizes for the intervention.

A larger dose or addition of behavior-activating components (use of daily activity trackers, text messages, or coaching) may be necessary to realize clinically-meaningful changes in sedentaryism, daily activity, metabolism, and behavior change. These preliminary results suggest provision of educational material/one-time feedback is likely insufficient to meet PA guidelines & reduce sedentary time.

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Mean ± SD. HDL- High density lipoprotein, LDL- Low density lipoprotein, IGI- Insulinogenic index; DI- Disposition index.

Table 2. Sedentary & Activity Outcomes

<table>
<thead>
<tr>
<th>Variable</th>
<th>Average (SD)</th>
<th>T-Test (P-value)</th>
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</thead>
<tbody>
<tr>
<td>Total daily steps</td>
<td>1016.0 ± 208 (2062.23)</td>
<td>0.76</td>
</tr>
<tr>
<td>Total energy expenditure/day</td>
<td>33.05 ± 15.60 (77.98.43)</td>
<td>0.74</td>
</tr>
<tr>
<td>% of hourly time spent in uninterrupted sedentary behavior (hrs/8pm)</td>
<td>20% (10%)</td>
<td>0.63</td>
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