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Does a home based, physical activity (PA) intervention improve fitness and wellbeing in sedentary women with early stage breast cancer?

METHODS

Design: randomised controlled trial.
Allocation: (concealed) *
Blinding: (unblinded).*
Follow up period: 12 weeks.
Setting: Rhode Island, USA.

Patients: 86 women who were ≥18 years of age (mean age 53 y) and had been diagnosed with stage 0-II breast cancer in the previous 5 years; had completed surgery, chemotherapy, or radiation; were able to walk 1 mile without assistive devices; and were sedentary (exercised <1 time per wk for 20 min at vigorous intensity or <2 times per wk for 30 min at moderate intensity for the past 6 mo). Women with previous cancer (except non-melanoma skin cancer) or a medical or psychiatric illness that would make PA compliance difficult or dangerous were excluded.

Intervention: 43 women were allocated to home based PA, which comprised in-person instruction on exercising at a moderate intensity, heart rate monitoring, and “warming up” before and “cooling down” after exercise; encouragement to gradually increase moderate intensity activities (55–65% maximum heart rate) such as brisk walking or swimming from ≥10 minutes on ≥2 days per week to 30 minutes accumulated PA per day for ≥5 days per week; activity counselling based on stage of readiness delivered by research staff in weekly telephone calls over 12 weeks; monthly phone calls for 3 months thereafter to reinforce regular PA; weekly PA and cancer survivorship tip sheets; and a feedback letter summarising participants’ progress. 43 women were allocated to a control intervention, which involved no change in current level of activity, weekly phone calls (matched in frequency to those of the home based PA group) to monitor problems that could affect usual activities of daily life (eg, headaches), and weekly cancer survivorship tip sheets.

Outcomes: included PA (Seven-Day Physical Activity Recall [7-Day PAR] and 3 day Caltrac accelerometer readings); fitness (Rockport 1 mile walk test); Stage of Motivational Readiness for PA; and psychological outcomes (Profile of Mood States [POMS] and a linear analogue scale for fatigue).

Patient follow up: 95% (intention to treat analysis).

MAIN RESULTS

At 12 weeks, women in the home PA group engaged in more total minutes of PA per week (202.4 v 78.4; mean change 124.0 v 4.5, p = 0.001) and walked 1 mile in fewer minutes (16.3 v 17.9; mean change −1.1 v 0.2, p = 0.001) than those in the control group. More women in the home PA group progressed in motivational readiness for PA (84% v 35%, p = 0.001). The home PA group had more vigour (POMS vigour score 20.6 v 15.8; mean change 2.7 v 0.5, p = 0.001) and less fatigue (27.1 v 42.3; mean change −15.4 v 0.6, p = 0.001) but did not differ from the control group for overall mood disturbance (POMS total mood disturbance score 8.0 v 16.5; mean change −3.8 v −4.6, p<0.07).

CONCLUSION

A home based physical activity intervention increased physical activity, fitness, and vigour and reduced fatigue in sedentary women with early stage breast cancer.

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Commentary

The study by Pinto et al on the effectiveness of home based PA for sedentary women with early stage breast cancer matched women’s readiness to exercise with the level of exercise prescribed, thereby increasing the likelihood of adherence and benefit. The choice of setting is important. Although some home based studies have been done, this approach requires further development. Home based exercise is of particular interest in this context because it is easier for people with cancer to manage than supervised exercise in a fitness facility.1

The control condition (telephone calls) may be viewed as an intervention in its own right, and the study would have benefited from adding a true “no treatment” control group. Furthermore, no sample size calculation was given, and the sample seems somewhat small for an RCT with so many outcomes; thus, both false positive and false negative results are possible. The fidelity of the intervention was reported in terms of the percentage of intended phone calls made to participants. Information on participants’ adherence rates (ie, exercise that was actually performed) would have also been helpful for interpreting the outcomes. It is not surprising that the groups differed for self reported PA but not objective measures, as self report bias is common with PA questionnaires. Programme length is also a consideration. The between-group difference on the walk test, but not in body composition, is consistent with findings that exercise may improve fitness more quickly than other physical outcomes that are rooted in metabolic change, such as body composition and lipid profiles.2 3 Research has begun to show the beneficial effects of exercise on cancer survival and recurrence4 in addition to well established short term benefits. Further development of this PA programme may contribute to our understanding of the relationship between exercise and cancer.

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