



Effects of aerobic exercise and massage with yogic training on cancer related pain and cancer related fatigue among women breast cancer survivors

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Abstract

The purpose of the study was to determine the effects of aerobic exercise and massage with yogic training on cancer related pain and cancer related fatigue among women breast cancer survivors. To achieve the purpose, forty women breast cancer survivors were randomly selected as subjects. They were divided into two equal groups namely experimental group and control group. Experimental group underwent aerobic exercise, massage and yogic training and control group was not given any specific programme. They were assessed before and after the training periods of twelve weeks. The following variables were chosen namely cancer-related pain and cancer-related fatigue. The 't' ratio statistical tool was applied to analyze the data. The study revealed that the cancer related pain and cancer related fatigue was significantly improved due to the influence of the aerobic exercise, massage with yogic training. The exercise should be structured programme for cancer survivors.

Keywords : Aerobic exercise, yogic training, breast cancer, massage and women

Introduction

Good health is a treasure. There are several reasons that affect health. Environment too plays a vital role in causing diseases like diabetes, hypertension, heart disease, cancer and so on. As a result it affects man's health to a great extent. Cancer is a leading cause of death worldwide. Among the leading causes of cancer deaths in women, breast cancer remains a medical and social challenge, as well as a major public health problem. There is a trend of increasing breast cancer incidence almost everywhere, partly due to increases in risk factors such as decreased childbearing and breast-feeding, increased exogenous hormone exposure and detrimental dietary and lifestyle changes, such as obesity and reduced physical activity. This being a lifestyle disease, it could be remedied through a change in

man's lifestyle through yoga and other physical exercises.

Pain of women after breast cancer

Pain is an unpleasant sensory and emotional experience in association with actual or potential tissue damage, or described in terms of such damage. Pain is a sensation that hurts, and it has both physical and emotional aspects to consider. Pain, which can be caused by the disease itself or by treatments, is common in people with cancer, although not all people with cancer will experience pain. Approximately 30% to 50% of people with cancer experience pain while undergoing treatment, and 70% to 90% of people with advanced cancer experience pain (Lesage and Portenoy, 1999). Increased mobility can sometimes reduce pain. Physical therapists can provide exercise programs to restore strength, increase range of motion, and improve endurance.

Other physical exercises, such as walking programs and programs provided in fitness centers, have also been shown to be beneficial.

Fatigue of women after breast cancer

Cancer-related fatigue

Fatigue is the symptom that has, by far, the largest impact on limiting function and overall quality of life in breast cancer patients. It is a problem that affects 70% to 100% of cancer patients and has been exacerbated by the increased use of fatigue-inducing multimodal treatments and of dose-dense, dose-intense protocols. Months or even years after treatment has ended, people living with cancer report that fatigue is a disruptive symptom (National Comprehensive Cancer Network, 2005). Patients with cancer commonly report a lack of energy during the course of their disease and treatment. Fatigue may be a sign of the cancer itself or a side effect from cancer therapy. Besides tiredness, symptoms of fatigue can include nausea, stress, depression, anxiety, change in activity level or rest patterns, loss of appetite, and weight changes. Exercise has helped many combat their fatigue (Susan and Komen, 1997).

Aerobic Exercise

Aerobic exercise also known as cardio is physical exercise of relatively low intensity that depends primarily on the aerobic energy-generating process (Sharon *et al.*, 2007). Aerobic activities strengthen the heart and lungs, making them more efficient and durable, improving quality and quantity of life. Exercise not only extends our life, but also gives us more energy to live it to the fullest.

Massage

Massage is a systematic therapeutic friction, stroking or kneading of the body. The application of diverse manual techniques of touch and stroking to muscles and soft tissue to achieve relaxation and to improve the client's well-being (Jonas, 2005). Breast cancer patients receiving

massage therapy showed improved blood pressure, respiration, and heart rate measurements (Cassileth *et al.*, 2008). Massage therapy relaxes the patient, reducing pain, anxiety and gastrointestinal symptoms of chemotherapy and radiation side effects. For breast cancer patients undergoing radiation, massage therapy reduces side effects of treatment itself and can help dissolve radiation-induced fibrosis months and years after treatment has finished (MacDonald and Gayle, 2001).

Yoga

Yoga interventions for cancer patients shown positive effects on a variety of outcomes, including sleep quality, mood, stress, cancer-related distress, cancer related symptoms, and overall quality of life, as well as functional and physiological measures (Julienne, 2005). Yoga, which is designed to be a calming exercise, strengthens and tones the body without raising the heart rate (Betsy, 2008).

A structured group exercises programme during adjuvant treatment is a safe, well tolerated and effective way of providing physical, physiological and psychological health benefits to people during treatment and also appropriately powered analyses of some variables of exercise create interest and favoured relatively economical for people after breast cancer (Campbell *et al.*, 2004). A Structured exercise intervention undertaken by breast cancer patients undergoing chemotherapy can lead to reduction in treatment-related symptoms (Andersen *et al.*, 2006).

Objective

To find out the effects of aerobic exercise and massage with yogic training on cancer related pain and cancer related fatigue among women breast cancer survivors.

Hypotheses

1. It was hypothesized that the aerobic exercise and massage with yogic training would have

significant effects on cancer related pain and cancer related fatigue among women breast cancer survivors in Experimental group.

2. It was hypothesized that there is no significant difference between pre-test and post-test of women breast cancer survivor in Control group in cancer related pain and cancer related fatigue.

Methodology

Experimental design was adopted for the study. Forty women mastectomies (who have undergone surgical removal of the breast) were randomly selected at Breast club from G. Kuppuswamy Naidu Memorial Hospital, Coimbatore, Tamilnadu. Their age ranged between thirty five to forty five years. They were divided into two equal groups namely experimental group and control group each consisting of twenty women mastectomies.

Pre-test was conducted for Experimental group and Control group to measure cancer related pain and cancer related fatigue. After conducting pre-test, Experimental group underwent aerobic exercise and massage with yogic training for six days per week for twelve weeks and control group was not given any specific programme. After the treatment period, Post-test was conducted for both the groups.

Cancer related pain and cancer related fatigue were selected as criterion variables.

1. Pain discomfort Scale (PDS) by Jensen and Karoly,
2. Pain discomfort Scale (PDS) by Jensen and Karoly, 1991 was used to measure cancer related pain and
3. Piper Fatigue Scale (PFS) by Piper et al., 1998 was used to measure cancer related fatigue.

Statistical analysis

't' test was used to find out the effectiveness of aerobic exercise and massage with yoga training.

Result and Discussion

The table - 1 shows that the obtained 't'-ratio values of pre test and post test mean values of Cancer related pain and Cancer related fatigue of experimental group and control group among women breast cancer survivors. The obtained 't' - ratios were 18.52 for Cancer related pain, 2.39 for Cancer related fatigue for experimental group and 0.68 for Cancer related pain, 1.80 for cancer related fatigue for Control group (Table - 2).

The obtained 't' - ratios on selected treatment related symptoms were greater than the critical value of 2.09 it was found to be statistically significant at 0.05 level of confidence for df 19 for experimental group. Hence it was observed that the twelve weeks practice of aerobic exercise and massage with yoga training showed significant improvement in Cancer related pain and Cancer related fatigue of experimental group.

The obtained 't' - ratios on Cancer related pain and Cancer related fatigue were lesser than the critical value of 2.09 it was found to be statistically insignificant at 0.05 level of confidence for degrees of freedom 19 for Control group. It was observed that control group did not show any significant improvement in Cancer related pain and Cancer-related fatigue.

The aerobic exercise and massage with yogic training programme has produced a significant improvement on cancer related pain and cancer related fatigue. The control group has not produced a significant improvement on cancer cancer related pain and cancer related fatigue among the women breast cancer survivors. Therefore it is concluded that after attending aerobic exercise and massage with yogic training programme there was a significant reduction in their pain level and fatigue level. It was observed that the aerobic exercise and massage with yoga training group produced significant development effect on cancer related pain and cancer related

Table - 1. Difference between pre-test and post-test of Experimental group in cancer related pain and cancer related fatigue

Variables	Pre-test	Post-test	Diff	SE	t-ratio
Cancer related pain	22.75 ±1.77	19.35±1.50	3.40	0.18	18.52*
Cancer related fatigue	8.15 ± 0.99	7.25 ± 1.25	0.90	0.37	2.39*

*Significant at 0.05 level of confidence

Table - 2. Difference between pre-test and post-test of Control group in cancer related pain and cancer related fatigue

Variables	Pre-test	Post-test	Diff	SE	t-ratio
Cancer related pain	22.70 ± 1.81	22.95 ± 1.96	0.25	0.37	0.68
Cancer related fatigue	8.20 ± 0.950	8.60 ± 0.50	0.40	0.22	1.80

fatigue variables used in the study whereas in the case of control group it was found to be insignificant.

In testing the significance of mean difference on pre-test between the two groups namely aerobic exercise and massage with yoga training group and control group the result indicates that the mean differences on cancer related pain and cancer related fatigue variables used in the study before the respective treatment was insignificant. Thus, this analyses confirms that the random assignment of subjects into two groups were successful.

Conclusion

In the present study the effects of Aerobic exercise and massage with yogic training has produced significant improvement on the criterion variables among women breast cancer survivors. Thus the logical combination of this method of trainings will be useful to women breast cancer survivors in developing their physical health and mental health.

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