

Effect of a Structured Yoga Program on Fatigue, Depression, Cardiorespiratory Fitness, and Quality of Life in a Postmenopausal Breast Cancer Survivor

Abstract

A 52-year-old postmenopausal female diagnosed with duct carcinoma of the left breast underwent modified radical mastectomy 2 years ago. She had completed six cycles of chemotherapy postsurgery and complained of significant fatigue and depression. Her fatigue score on Piper Fatigue Scale was 4.1 and depression score on Beck's Depression Inventory was 22. She had a poor 6-min walking distance and a reduced quality of life. She was given a structured yoga program for 40 min five times a week for 4 weeks. Results showed a marked reduction in fatigue and depression scores and improvement in cardiorespiratory fitness. Her quality of life also showed improvement after the structured yoga therapy. This case report highlights the benefits of yoga for reducing fatigue, depression, and improving the cardiorespiratory fitness and overall quality of life in a breast cancer survivor.

Keywords: Breast cancer, depression, fatigue, yoga

Introduction

Breast cancer is the most common cause of cancer-related deaths in India^[1] accounting for more than a fifth of all female cancer mortality. According to the National Cancer Registry, 1.5 lakh new cases of breast cancer have been reported in 2016. With advances in detection and treatment, the number of survivors has increased significantly in recent years. Better understanding and management of cancer-related symptoms is critical for reducing suffering in cancer survivors.

Fatigue is the most common and disabling cancer-related symptom among women successfully treated for breast cancer.^[2] A recent study indicated that breast cancer survivors had a 22% lower compared to their age-matched healthy, noncancer peers, indicating a lower cardiorespiratory fitness.^[3] Depression and anxiety are the common negative emotions provoked by the diagnosis and management of breast cancer. These symptoms can lower treatment compliance and further increase complications which, in turn, can aggravate symptom burden and seriously affect health-related quality of

life.^[4] There is growing evidence that behavioral interventions may be effective in reducing these symptoms among cancer patients undergoing treatment.

Yoga therapy is a promising alternative treatment for cancer survivors with persistent fatigue and depression. An increasing number of yoga interventions have demonstrated positive effects on cancer-related symptoms and quality of life.^[5] In this case report, we describe the treatment of a breast cancer survivor using a structured yoga program.^[6]

Case Report

The present study included a postmenopausal patient diagnosed with duct carcinoma of the left breast. Sociodemographic details of the patient are provided in Table 1.

The patient underwent modified radical mastectomy and completed six cycles of chemotherapy postsurgery. She complained of extreme fatigue and depression which prevented her from doing her daily household activities and she was unable to go back to her job which created a huge financial drain for her.

**Ashwini A Dangi,
Sheetal K
Aurangabadkar¹,
Medha V Deo²**

*Departments of Cardiovascular and Pulmonary Physiotherapy,
¹Community Physiotherapy,
²Musculoskeletal Physiotherapy,
Terna Physiotherapy College,
Navi Mumbai, Maharashtra,
India*

Address for correspondence:

*Dr. A Ashwini Dangi,
Terna Physiotherapy
College, Sector 12,
Nerul West, Mumbai - 400 706,
Maharashtra, India.
E-mail: ashwinidangi@
rediffmail.com*

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Table 1: Sociodemographic details

Gender	Socioeconomic status	Age (years)	Duration of illness	Profession	Education (years)
Female	Lower middle	52	2	Attendant	12

Table 2: Comparison of outcome measures before and after the yoga intervention

Parameters	Preintervention	Postintervention
Fatigue score	4.1	2.6
Depression score	22	15
6-min walk distance (m)	390	450
Quality of life score	77	64

Written informed consent was obtained from the patient before the commencement of the study. Revised Piper Fatigue Scale was used to evaluate her fatigue level.^[7] Her total score was found to be 4.1 indicating moderate fatigue. Depression was assessed by Beck's Depression Inventory.^[8] The patient was found to have moderate depression with a total score of 22. She was then subjected to the 6-min walk test which is a submaximal exercise test that entails the measurement of distance walked over a span of 6 min. This test is a marker of cardiorespiratory fitness and provides information regarding functional capacity. According to the American Thoracic Society guidelines, the patient was instructed to walk at her own pace over a 30-m corridor, with the boundaries marked by colored cones, for a total period of 6 min. The vital parameters were assessed before and immediately after the test completion. The distance covered at the end of the test was recorded. She covered a total distance of 390 m, which was reduced as compared to her predicted walking distance. Her quality of life was evaluated using Functional Assessment of Cancer Therapy Questionnaire for Breast Cancer [FACT-B + 4 (Version 4)].^[9] The patient's total score in all four domains was found to be 77.

She was given a structured yoga program for 4 weeks. In this study, the style of yoga used was a modified version of Hatha yoga called yoga therapy. The patient received the structured yoga therapy as a one-on-one session with the therapist. The class was held over 60 min in a quiet and dimly lit room, according to the following schedule: 15 min of Pranayama (gentle breathing techniques) in the supine position. The pelvis was in a neutral position, and the arms abducted with palms facing toward the ceiling. This was followed by 30 min of a series of nine modified yoga asanas which comprised of gentle stretching and strengthening exercises specifically targeting the upper body. Each asana was maintained for 5–10 breaths and repeated for five times. The session concluded with 15 min of Shavasana. The patient attended three supervised sessions per week for 4 weeks with self-practice on the remaining days. She exhibited a high adherence to the designed yoga program as it was flexible and tailored according to the physical condition of the patient. In addition, a video demonstration

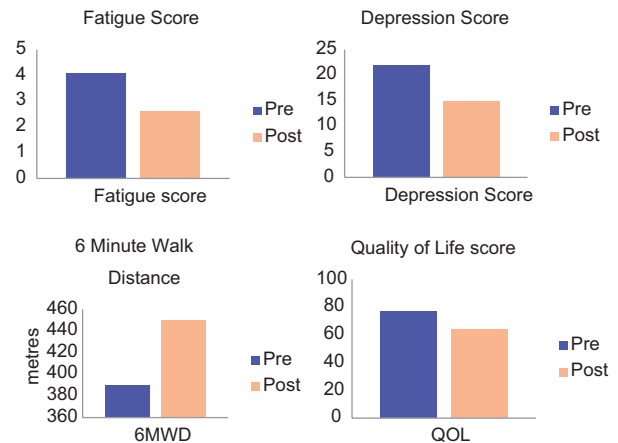


Figure 1: Graphical representation of the outcome measures before and after Yoga intervention shows a reduction in fatigue, depression and quality of life scores and increase in 6 – min walking distance

was given which made it easier for her to understand and practice yoga.

Results

Fatigue, depression, 6-min walking distance, and quality of life scores were reassessed after 4 weeks and results presented in Table 2 and Figure 1.

There was a reduction of fatigue score from 4.1 to 2.6, while depression score reduced from 22 to 15. The patient's walking distance increased from 390 to 450 m. Her quality of life also showed an improvement in all the four domains with a total score reduced from 77 to 64.

Discussion

This case report provided preliminary evidence that the structured Yoga program had a positive psychological impact on the breast cancer survivor. Following could be the possible reasons: (1) physical activity in yoga creates a sense of peace both in mind and body exerting a positive effect on the mental health of cancer survivors; (2) breathing practice in yoga helps the patient focus on her present feeling and divert attention from disease suffering, thereby reducing psychological distress; (3) yoga could reduce DNA damage, decrease salivary cortisol secretion, correct hypothalamic–pituitary–adrenal axis disturbances in breast cancer survivors, and improve immune responses on changes in lymphocyte subpopulations, which all may precede stress responses;^[10] (4) yoga exerts a positive effect on body image and self-esteem, which could improve psychological well-being and increase the coping mechanism of breast cancer. Previous literature has suggested that exercises in breast cancer survivors improved

cardiorespiratory fitness and physical function. This could be attributed to an improvement in depression and fatigue levels with yoga therapy leading to an improvement in the overall quality of life.

Conclusion

Our structured yoga therapy showed beneficial findings in improving fatigue, depression, functional capacity, and quality of life in a postmenopausal breast cancer survivor. Thus, yoga can be used as a possible adjuvant therapy for breast cancer patients. However, further investigation needs to be undertaken into this promising approach regarding the commencement and duration of yoga during cancer treatment.

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Conflicts of interest

There are no conflicts of interest.

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