Randomized Trial of Yoga in Women with Breast Cancer Undergoing Radiation Treatment

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Introduction

- Research suggests that stress-reduction programs tailored to the cancer setting may help patients cope with the acute effects of treatment and improve QOL after treatment.
- Stress management and other types of psychosocial interventions have been found to be a useful adjunct to conventional medical treatment and may affect treatment response and survival.
- The reported studies that incorporate yoga as a treatment for medical conditions provide some evidence for treatment efficacy, but there have been few randomized, controlled research studies with cancer patients reported in the literature.

Objectives

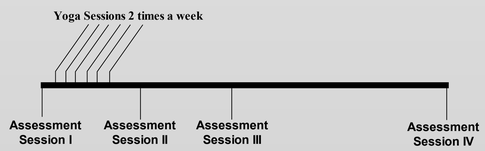
- To determine acceptability and feasibility of teaching yoga to breast cancer patients undergoing radiation therapy
- To conduct an initial evaluation of whether participation in the yoga program improves quality of life and objective physiological outcomes
- To determine feasibility of obtaining blood and saliva samples

Procedures

- 61 breast cancer patients beginning radiation therapy were recruited.
- Participants completed a baseline assessment where they completed the informed consent, questionnaires, and other physiological assessments.
- Patients were randomized to the intervention or waitlist control group.
- Participant characteristics used for group assignment were: age, stage of disease, time since diagnosis, anxiety, sleep disturbance, preceding surgery, type of surgery, chemotherapy, and previous radiation.
- Participants in the treatment group attended two weekly yoga sessions at M. D. Anderson during their radiation treatment.
- Participants completed follow-up assessments 1 week and 1 and 3 months after the last session.

Program

- Twice weekly schedule of yoga for the duration of the patient's radiation treatment.
- Program Components:
  - Breathing and loosening exercises
  - Postures
  - Deep Relaxation
  - Alternate nostril breathing
  - Meditation



Controls were assessed at corresponding time points relative to the initial assessment.

Measures

- Brief Fatigue Inventory (BFI).
- Centers for Epidemiologic Studies - Depression (CES-D).
- Impact of Events Scale (IES) - Total Score.
- Pittsburgh Sleep Quality Index (PSQI) - Sleep disturbances.
- Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36) – subscales
- Blood samples – immune function
- Saliva samples – cortisol levels
- Spirometry – lung function
- Physiotherapeutic measures

Results

- 63% of the participants found the program "useful" or "very useful" and 37% found the program "somewhat useful."
- More than 90% of the participants practiced at least once a week.
- For the individual components being practiced once a week or more:
  - 74% - Postures
  - 59% - Meditation
  - 82% - DRT
  - 74% - Breathing

Results

	Yoga	Control
BFI - baseline	2.1 (1.7)	1.8 (1.2)
1-week	2.0 (2.1)	3.1 (2.5)
CES-D - baseline	9.2 (7.5)	10.2 (6.8)
1-week	6.6 (8.4)	7.9 (7.2)
IES - baseline	14.6 (9.8)	14.4 (11.7)
1-week	12.1 (12.0)	12.1 (10.3)
PSQI - baseline	6.7 (3.3)	7.0 (4.1)
1-week	6.1 (2.8)	6.9 (4.1)
SF-36 Phys Function - baseline	72.2 (20.0)	74.8 (24.8)
1-week	82.1 (15.6)	69.8 (21.5)
SF-26 Mental Health - baseline	80.4 (11.3)	76.7 (16.0)
1-week	85.0 (11.5)	81.2 (12.5)
SF-36 Vitality - baseline	55.0 (18.3)	49.9 (16.5)
1-week	61.2 (17.5)	54.8 (21.6)
SF-36 Role-Physical - baseline	34.5 (39.9)	29.2 (38.1)
1-week	53.6 (43.5)	42.7 (44.5)
SF-36 Bodily Pain - baseline	64.6 (24.6)	60.7 (27.0)
1-week	73.6 (22.3)	63.2 (24.5)
SF-36 General Health - baseline	67.9 (19.5)	72.1 (17.0)
1-week	77.3 (18.6)	69.8 (22.2)
SF-36 Social Function - baseline	69.0 (26.1)	68.2 (24.2)
1-week	83.9 (22.8)	76.0 (19.8)
SF-36 Role-Emotional - baseline	73.0 (38.9)	56.9 (43.4)
1-week	77.8 (33.9)	73.6 (38.0)

Figure 1

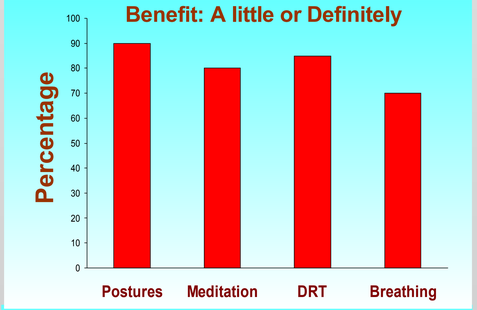


Figure 2

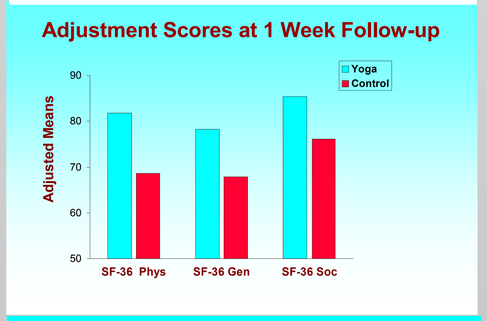


Figure 3

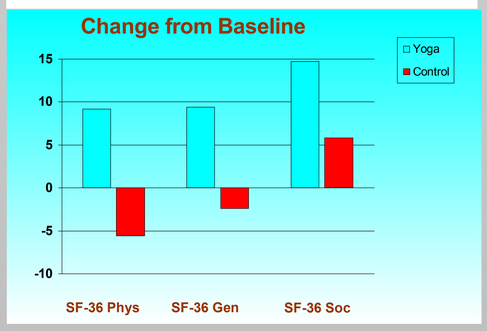


Figure 4

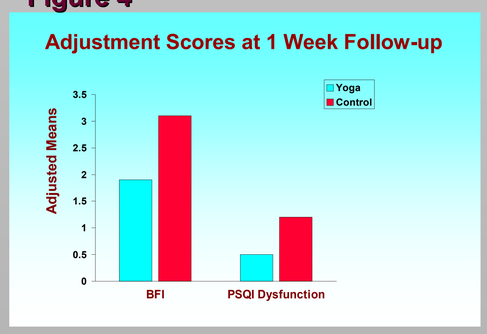
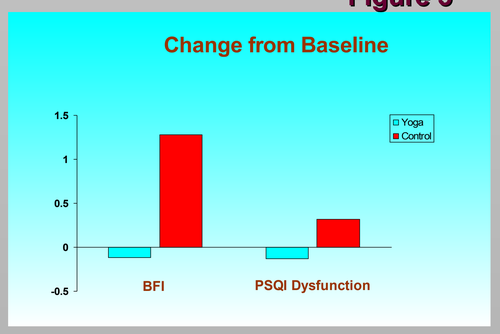


Figure 5



Individual Comments

- These exercises are helping me loosen up more, especially in my legs, and torso.
- I definitely feel more relaxed and sleep better after doing the relaxation techniques. Also, I have gained more range of motion in my right arm.
- I feel that yoga will benefit all breast cancer patients. Their range of motion in the arm will get better if they practice yoga. It is very relaxing and takes the stress out of having the disease.
- Due to breathing, deep relaxation, and posture exercises, I have experienced improvements in stamina, strength and overall well-being.
- The breathing exercises fascinate me. I find myself practicing the alternate breathing exercises when I'm watching TV or riding in the car.
- I continue to sleep well on the days I practice.

Conclusion

- This yoga program was feasible, and the participants found it useful.
- Most of the participants practiced the exercises at least once a week and many practiced the exercises more than twice a week.
- Improving sleep quality in a cancer population may be particularly salient as fatigue and sleep disturbances are common problems for patients with cancer.
- Participants in the yoga group had significantly better scores for physical health than the control group.
- Participants in the yoga group had significantly lower fatigue scores and sleep dysfunction after the end of the sessions.
- Improving physical functioning in this population given the high survival rate, is important.
- Differences in sleep quality and other outcomes suggest a larger randomized trial is warranted.