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## Trends towards Drugless Therapy in Breast Cancer Patients with Yoga Techniques: A Mini Review

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### Abstract

**Introduction:** Cancer is a disease in which some of the body's cells grow uncontrollably and spread to other parts of the body. When cells grow old or become damaged, they die, and new cells take their place, but sometimes abnormal or damaged cells grow and multiply. These cells may form tumors, which are lumps of tissue. Tumors can be cancerous or not cancerous (benign). Cancerous tumors spread into nearby tissues and can travel to another body parts to form new tumors through a process called metastasis.

Yoga practices have shown beneficial effects on people suffering from side effects of breast cancer but its mechanism still remains unclear. Hence, the current review is carried out with the aim to evaluate and find the mechanism of effectivity of Yoga practices as complementary therapy for patients suffering from negative effects of modern treatment of breast cancer.

**Material and Methods:** The articles for this systematic review were obtained by searching through the PubMed, Google Scholar, Web of Science, Publon, Cochrane. The keywords yoga and cancer, cancer and stress, stress and yoga, yoga and breast cancer were used while accessing these databases. It was tried to get full paper related to the topic. If paper was not available online freely emailing request was sent to concerned author for the same to get that article.

**Result:** Out of 86 article 4 were selected for final review. Among these 1 is on cognitive problems related to breast cancer women immediately after treatment. Another one is on perceived stress, sleep, diurnal cortisol and natural killer (NK) cell count in patients with metastatic cancer. Two studies are on breast cancer patients in their II and III stage. The one article is a comparative study on self-reported depression scores in breast cancer patients undergoing conventional treatment. The other research is also focussed to know the effect of yoga on psychological distress, fatigue, insomnia, appetite, nausea, vomiting, dyspnoea and pain while patients were undergoing radiotherapy.

**Conclusion:** The current review showed that yogic practices are effective to manage breast cancer along with ongoing treatment. Yoga practices will help to overcome the stress born out of being confirmed with breast cancer. Yoga practices are also beneficial to improve the quality of life if practiced regularly. There are still lack of promising literature scientifically explored with clinical trials where breast cancer patients are given one aspect of Yoga techniques. Mechanism based research required with large number of samples with and without modern treatment therapy along with drugless therapy including Yoga.

**Keywords:** Yoga, stress, cancer, breast cancer, quality of life, drugless therapy

### Introduction

Human body is made up of trillions of cells which grows and multiply through a process called cell division. Cancer is a disease in which some of the body's cells grow uncontrollably and spread to other parts of the body [1]. When cells grow old or become damaged, they die, and new cells take their place, but sometimes abnormal or damaged cells grow and multiply. These cells may form tumors, which are lumps of tissue. Tumors can be cancerous or not cancerous (benign). Cancerous tumors spread into nearby tissues and can travel to another body parts to form new tumors through a process called metastasis. Cancerous tumors can also be called malignant tumors [2]. Benign tumors do not spread into nearby tissues. When benign tumors are removed, they

usually don't grow back, whereas cancerous tumors sometimes do. Benign tumors can sometimes be quite large, however. Some can cause serious symptoms or be life threatening, such as benign tumors in the brain. [1-3] There are more than 100 types of cancer. Types of cancer are usually named for the organs or tissues where the cancers form. For example, lung cancer starts in the lung, and brain cancer starts in the brain [3].

Though treatments such as surgery, radiation therapy, hormone therapy, chemotherapy, immunotherapy etc. has shown promising effects in survival rates of women with breast cancer [1], it can result in multiple physical and psychological side effects [4]. These side effects are because of many reasons which include concerns regarding physical

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conditions, post-operative recovery, hospital admission, anticipating painful procedures, image problems, worries about survival and recovery [5]. Waiting for surgery is also a distressing experience for many breast cancer patients [4]. These cancer-related symptoms could lead to a reduction of quality of life, reduction of treatment adherence, and even worse survival than in not-affected patients [6, 7]. Cancer and its treatment related symptoms includes fatigue [8], anxiety, depression [9], weight gain [10], and lymphedema [11]. Besides anxiety and depression, cancer-related fatigue is one of the most frequent symptoms in cancer patients [12]. More than 50% of the patients are affected by fatigue during or after their treatment [13]. It has been reported that breast cancer survivors experience a high level of psychosocial stress that persists across the disease trajectory [14]. It is also reported that women with breast cancer are among those cancer patients with the most severe psychological stress, where fear of disease progression is a primary stressor [15]. Women with breast cancer also report a high incidence of emotional dysfunction and changes in sexual relationships with partners [16].

Several studies have reported abnormalities in circadian rhythm and flattened cortisol diurnal slope (linear regression of cortisol concentration over time) in women with breast cancer [17]. Though there is evidence that shows that interventions that alter appraisal, coping and/or mood may also modulate immune and endocrine function, thereby enhancing surgical recovery [18, 19]. For this reason, lifestyle interventions involving yoga can be a potential way to help breast cancer survivors manage lingering pain and treatment side-effects. Researchers say general effects of yoga in promoting health are due to its ability to establish stable autonomic balance. A significant decrease in stress and/or anxiety symptoms when a yoga regimen was implemented [20]. Another study suggests that Meditation and *pranayama*, along with relaxing asanas, can help individuals deal with the emotional aspects of chronic pain, reduce anxiety and depression effectively and improve the quality of life perceived [21]. In a research it was found a stronger reduction of general fatigue, physical fatigue, and depression as well as a stronger increase in QoL [22]. Research has shown the positive effects of yoga on increasing emotional self-regulation, self-esteem, self-awareness, and the quality of well-being and decrease in anxiety, depression, stress, anger, etc. [23]. So based on above findings we can say that yogic practices can be found effective for women dealing with traumatic effects of breast cancer and its treatment.

In spite of the fact that some studies have reported that Yoga practices have shown beneficial effects on people suffering from side effects of breast cancer treatment, its definite effectiveness remains unclear. Hence, the current review is carried out to evaluate and find the mechanism of effectivity of Yoga practices as complementary therapy for patients suffering from negative effects of modern treatment of breast cancer.

## Material and Methods

The articles for this systematic review were obtained by searching through the PubMed, Google Scholar, Web of Science, Publon, and Cochrane. The keywords yoga and cancer, cancer and stress, stress and yoga, yoga and breast cancer were used while accessing these databases. It was tried to get full paper related to the topic. If paper was not available online freely emailing request was sent to concerned author for the same to get that article. A waiting period of 10 days

was fixed, if response was not received within 10days from the corresponding author, abstracts were looked through to verify if they had enough information.

Inclusion criteria selected for this review were: the study should be written in English and published in peer reviewed journals; articles only with breast cancer and yoga, article with cancer and adverse effect of its treatment. Those which were published before 2015 were excluded. Also, articles with other complementary treatment like naturopathy and alternate medicine along with Yoga were excluded. Incomplete articles were also excluded from the study.

## Data Abstraction and Quality Assessment

Using the technique as shown in Schematic Presentation Table 1. 86 studies were selected and considered for initial evaluation. 8 studies were removed because they were not on cancer and also, they didn't used yoga as supportive treatment, 5 studies were removed as they were mix in nature, 8 studies were excluded because they were older than 2015. So, out of 86 studies 19 were excluded as they didn't meet our inclusion criteria. Out of remaining 67 studies, 15 studies were repeated so they are excluded, 14 studies were only on cancer and didn't used yoga as their supportive treatment, 14 were not full article so those were also excluded, and 21 studies were review or systematic review so those were excluded too. A total of 4 studies met the criteria of final review.

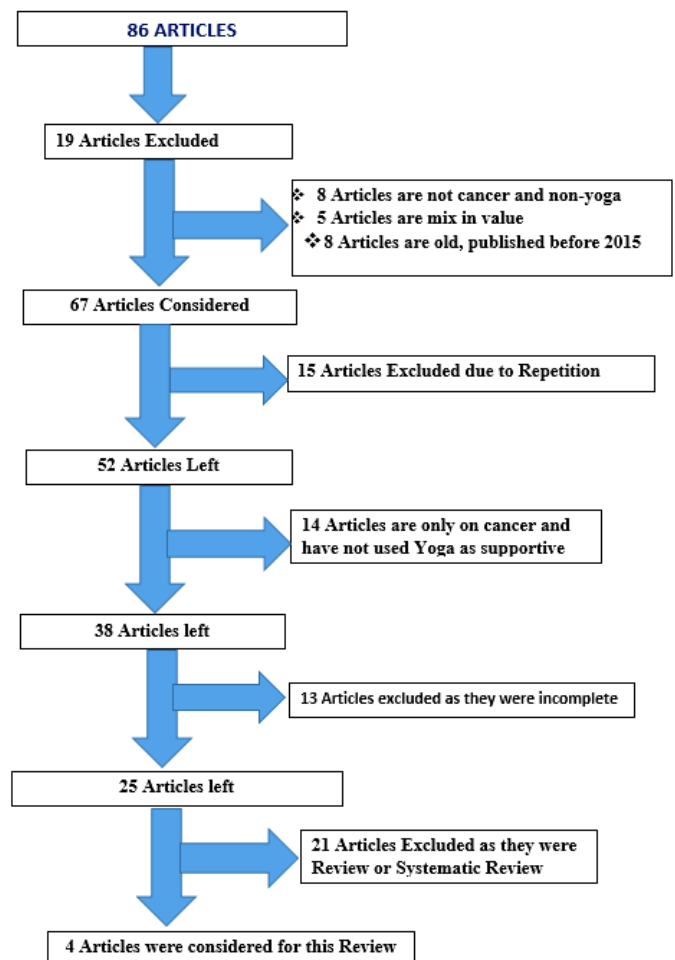


Fig 1: Schematic Presentation of Literature Review Table 1

## Result

Out of 86 article 4 were selected for final review. Among these 1 is on cognitive problems related to breast cancer

women immediately after treatment. Another one is on perceived stress, sleep, diurnal cortisol and natural killer (NK) cell count in patients with metastatic cancer. Two studies are on breast cancer patients in their II and III stage. The one article is a comparative study on self-reported depression scores in breast cancer patients undergoing conventional treatment (surgery, radiotherapy, chemotherapy). The other research is also focussed to know the effect of yoga on psychological distress, fatigue, insomnia, appetite, nausea, vomiting, dyspnoea and pain while patients were undergoing radiotherapy.

Breast cancer survivors post treatment at the beginning stage were introduced with hath yoga intervention for 12 weeks twice a week. Initially there were no significant change in cognitive problems of these women. But after 3 months follow-up, significant decrease in such problems were noticed. Also, those who practiced yoga more frequently reported significantly fewer cognitive problems at 3-month follow-up in comparison to those who practiced less frequently. A significant decrease in symptom distress and morning waking cortisol was found in metastatic breast cancer patients. Along with this there was improvement in quality of sleep and natural killer cell percentage. A significant decrease in depression score was found in patients undergoing conventional treatment in their II and III stage of cancer. A significant negative correlation was tried to establish among activity level, fatigue, nausea, vomiting, pain, dyspnoea, and insomnia and appetite loss.

## Discussion

The current attempt is made to see the impact of Yoga practices on the cancer in one way and on breast cancer in another way. There were some studies which showed that if Yogic techniques were used to see the effect on cancer patients. In the current scenario, the Increasing number of breast cancer cases are matter of concern all over the world. The most common in 2020 (in terms of new cases of cancer) is breast cancer (2.26 million cases). Though there are lots of treatment available to combat breast cancer and simultaneously a lots of side effect also seen such as depression, anxiety, cognitive problems, fatigue, insomnia etc [24].

Yogic practices like asanas, pranayama, meditation, yogic counselling has proved its effectiveness in case of patients with breast cancer at every stage of problem. Earlier research has already proved that yogic practices lead to decreased activity of sympathetic nervous system or bring about balance between sympathetic and parasympathetic nervous system which could lead to decrease stress. [25] Decrease in stress could lead to decreased inflammation resulting in decreased pain and better quality of life. Also, research has proved that practice of yoga decreases the activity of vagus nerve and decrease in vagal activity leads to parasympathetic stimulation which again leads to decreased stress. [26] Physical activity or yogic asanas and pranayama has always been seen to improve physical and emotional stamina, this can be the reason to improve fatigue, depression and anxiety in patients suffering from breast cancer and their survivors. [24]

In the review carried out here, three studies included some warm-ups practices and some selected easy asanas, pranayama, meditation or breath awareness or relation with imagination in intervention. In one research finding, it was tried to see the range of motion and strength in breast cancer women with the intervention of Yoga practices. They found that yogic practices were very much beneficial making upper

extremities improved and strengthened in breast cancer patients. [27] In another clinical research, researcher found the similar impact of Iyengar yoga on people who practices having osteoarthritis including the benefits of reduction of pain and improvement in range of motion. [28] In the review done here showed that yoga practices are not only reducing the stress born out of breast cancer but also having very positive impact on the quality of life in patients with breast cancer. The review also exhibited that yoga practices are effective in reducing the side effects of modern treatment and that's why drugless modalities like Yoga and other systems are in more demand to be included in oncology treatments in present day [29].

## Strength of the Study

The current study aims to see the effectively of Yoga practices used in the management of cancer and its related comorbidity. The effort is made to find the impact of yoga modules as intervention on the ongoing treatment of cancer patients specially breast cancer. There was none of the review done to explore the area of breast cancer with Yoga intervention. The current study will help future researcher to see the effect of designed protocol of Yoga on cancer patient with ongoing modern treatment.

## Limitations

There were a smaller number of articles included in this review with breast cancer and Yoga due to unavailability online freely which accounts major limitation of the study. Also, there was only one study to know the effect of yoga on post treatment on breast cancer survivors and another research was on metastatic cancer.

## Conclusion

The current review showed that yogic practices are effective to manage breast cancer along with ongoing treatment. Yoga practices will help to overcome the stress born out of being confirmed with breast cancer. Yoga practices are also beneficial to improve the quality of life if practiced regularly. There are still lack of promising literature scientifically explored with clinical trials where breast cancer patients are given one aspect of Yoga techniques. Mechanism based research required with large number of samples with and without modern treatment therapy along with drugless therapy including Yoga.

## References

- Galantino M, Lou Desai K, Greene L, DeMichele A, Stricker CT, Mao JJ. Impact of Yoga on Functional Outcomes in Breast Cancer Survivors with Aromatase Inhibitor-Associated Arthralgias. *Integr Cancer Ther.* 2012; 11(4):313-20.
- De, ane KA DL. Information needs, uncertainty and anxiety in women who had a breast biopsy with benign outcome. *Cancer Nurs.* 1998; 21:117-26.
- Heisig SR, Shedden-Mora MC, von Blanckenburg P, Rief W, Witzel I, Albert U-S, *et al.* What do women with breast cancer expect from their treatment? Correlates of negative treatment expectations about endocrine therapy. *Psychooncology.* 2016; 25(12):1485-92.
- Deane KA, Degner LF. Information needs, uncertainty, and anxiety in women who had a breast biopsy with benign outcome. *Cancer Nurs.* 1998; 21(2):117-26.
- Impending surgery MJ. Google Sch. 1988.

6. Di Matteo MR H-ZK. Impact of depression on treatment adherence and survival from cancer. *Depression and cancer*, Oxford, England: Oxford, England: Oxford, Englan, 2011, 101-124.
7. Curt GA. The Impact of Fatigue on Patients with Cancer: Overview of Fatigue 1 and 2. *Oncologist*. 2000; 5(S2):9-12.
8. Bower JE, Ganz PA, Desmond KA, Rowland JH, Meyerowitz BE, Belin TR. Fatigue in Breast Cancer Survivors: Occurrence, Correlates, and Impact on Quality of Life. *J Clin Oncol*. 2000; 18(4):743-743.
9. Burgess C, Cornelius V, Love S, Graham J *et al*. Depression and anxiety in women with early breast cancer: Five year observational cohort study. *BMJ*. 2005; (330):702.
10. Kroenke CH, Chen WY, Rosner B, Holmes MD. Weight, Weight Gain, and Survival after Breast Cancer Diagnosis. *J Clin Oncol*. 2005; 23(7):1370-8.
11. Erickson VS, Pearson ML, Ganz PA, Adams J, Kahn KL. Arm Edema in Breast Cancer Patients. *JNCI J Natl Cancer Inst*. 2001; 93(2):96-111.
12. Berger AM, Mooney K, Alvarez-Perez A, Breitbart WS, Carpenter KM, Cella D *et al*. Cancer-Related Fatigue, Version 2.2015. *J Natl Compr Cancer Netw*. 2015; 13(8):1012-39.
13. Mehnert A, Hartung TJ, Friedrich M, Vehling S, Brähler E, Härter M *et al*. One in two cancer patients is significantly distressed: Prevalence and indicators of distress. *Psycho-oncology*. 2018; 27(1):75-82.
14. Carlson LE, Angen M, Cullum J, Goodey E, Koopmans J, Lamont L *et al*. High levels of untreated distress and fatigue in cancer patients. *Br J Cancer*. 2004; 90(12):2297-304.
15. Herschbach P, Keller M, Knight L, Brandl T, Huber B, Henrich G *et al*. Psychological problems of cancer patients: A cancer distress screening with a cancer-specific questionnaire. *Br J Cancer*. 2004; 91(3):504-11.
16. Andersen BL, Anderson B, DeProse C. Controlled prospective longitudinal study of women with cancer: I. Sexual functioning outcomes. *J Consult Clin Psychol*. 1989; 57(6):683-91.
17. Abercrombie HC, Giese-Davis J, Sephton S, Epel ES, Turner-Cobb JM, Spiegel D. Flattened cortisol rhythms in metastatic breast cancer patients. *Psych neuroendocrinology*. 2004; 29(8):1082-92.
18. Manyande A, Berg S, Gettins D, Stanford SC, Mazhero S, Marks DF, *et al*. Preoperative Rehearsal of Active Coping Imagery Influences Subjective and Hormonal Responses to Abdominal Surgery. *Psychosom Med*. 1995; 57(2):177-82.
19. Kiecolt-Glaser JK, Glaser R. Psychoneuroimmunology: Can psychological interventions modulate immunity? *J Consult Clin Psychol*. 1992; 60(4):569-75.
20. Singh S, Malhotra V, Singh KP, Madhu SV TO. Role of yoga in modifying certain cardiovascular functions in type 2 diabetic patients. *J Assoc Physicians India*. 2004; 52:203-6.
21. Vallath N. Perspectives on Yoga inputs in the management of chronic pain. *Indian J Palliat Care*. 2010; 16(1):1.
22. Zetzl T, Renner A, Pittig A, Jentschke E, Roch C, van Oorschot B. Yoga effectively reduces fatigue and symptoms of depression in patients with different types of cancer. *Support Care Cancer*. 2021; 29(6):2973-82.
23. Janjhua Y, Chaudhary R, Sharma N, Kumar K. A study on effect of yoga on emotional regulation, self-esteem, and feelings of adolescents. *J Fam Med Prim Care*. 2020; 9(7):3381.
24. Bower JE, Woolery A, Sternlieb B, Garet D. Yoga for cancer patients and survivors. *Cancer Control*. 2005; 12(3):165-71.
25. Lim S-A, Cheong K-J. Regular Yoga Practice Improves Antioxidant Status, Immune Function, and Stress Hormone Releases in Young Healthy People: A Randomized, Double-Blind, Controlled Pilot Study. *J Altern Complement Med [Internet]*. 2015; 21(9):530-8. Available from: <http://www.liebertpub.com/doi/10.1089/acm.2014.0044>
26. C. McCall M. How might Yoga Work? An Overview of Potential Underlying Mechanisms. *J Yoga Phys Ther*. 2013; 03(01).
27. Odynets T, Briskin Y, Dolinsky B, Todorova V, Vindiuk P, Yefremova A, *et al*. The effect of hatha yoga on range of motion and strength in patients with breast cancer. *Physiother Q [Internet]*. 2021; 29(1):56-60. Available from: <https://www.termedia.pl/doi/10.5114/pq.2020.99755>
28. Garfinkel MS, Schumacher HR, Husain A, Levy M, Reshetar RA. Evaluation of a yoga based regimen for treatment of osteoarthritis of the hands. *J Rheumatol [Internet]*. 1994; 21(12):2341-3. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/7699639>
29. Agarwal RP, Maroko-Afek A. Yoga into Cancer Care: A Review of the Evidence-based Research. *Int J Yoga [Internet]*. 2018; 11(1):3-29. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/29343927%0Ahttp://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=PMC5769195>