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The Role of Yoga in Cancer Care: Enhancing Quality of Life and Managing Symptoms

Krishan PC[1] and Dr. Vikesh Kamra[2]

Research Scholar, Department of Yoga[1]

Professor, Department of Yoga[2]

Sunrise University, Alwar, Rajasthan, India

Abstract: *Cancer diagnosis and treatment cause significant psychological distress, lowering functional quality of life. While cancer medicines only remove tumors, measures to reduce treatment-related anxiety and improve quality of life are desperately needed. Yoga is a growing mind-body therapy for cancer sufferers. Yoga has been found to improve emotional states, symptoms, stress, and quality of life, as well as host characteristics that affect cancer patient survival, during the last 20 years. However, some metaanalyses and research show unclear yoga benefits. This study will analyze the expectations, benefits, and drawbacks of yoga therapy for cancer patients and the principles of designing yoga interventions for this group. Findings: Yoga research shows several types of yoga treatments, including duration, exposure, practices, and indications. It also specifies the context in which benefits may be received and recommends against utilizing it otherwise. There are several studies and bibliometric evaluations on yoga's advantages, but most have not included the underlying theories behind using these practices in cancer patients. This review covers yoga basics for cancer patients.*

Keywords: Yoga, dangers, clinical usefulness, meditation and cancer

I. INTRODUCTION

Both diagnosis and treatment may cause physical and mental adverse effects in cancer patients. Ongoing multimodal treatment for cancer patients might cause cumulative morbidity. Cancer therapy may cause physical changes, infertility, sexual dysfunction, hair loss, exhaustion, nausea, vomiting, infections, and low blood counts, which can significantly impact QOL. Fear and anxiety from invasive treatment procedures, sexual dysfunction after surgery and radiation, difficulties from protracted hospital stays, and rigorous medical therapy are common treatment-related adverse effects in cancer patients. Due to cancer screening and treatment advances, most malignancies have improved survival rates and patients live longer. However, living with cancer requires regular reminders, fear about its progression and recurrence, and imminent death. When paired with therapeutic side effects, this might cause intrusive thoughts, worry, helplessness, despair, and acute psychological distress. Vasomotor, anxiety/stress, and pain sensations worsen the patient's ability to withstand pain and symptoms. Cancer patients' daily worries and demands reduce their tolerance for these symptoms, accelerating this process. This increases medication use and negative effects. This open access article is published under the Creative Commons Attribution Noncommercial Share Alike 3.0 License, which allows people to remix, change, and build on the work without compensation as long as the author is acknowledged and the resulting works are licensed under the same conditions.

Some cancer patients may experience treatment-related distress that manifests as anxiety or depressive disorders, which can worsen feelings of helplessness and hopelessness, a lack of will to live, a sense of losing control over one's life, a shift in perspective about cancer and survival, a lower pain threshold, and low self-esteem Studies have connected this mental state to worse overall and disease-free survival, early relapse/recurrence, aberrant cortisol cycles, poor antitumor immune response, sleep problems, and increased discomfort. Patients must change their lives to handle these concerns and seek supportive care since the agony is both a treatment-related side effect and a severe short- and long-term stressor.

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Oncologists and other medical professionals know that these people must be treated to break the cycle of uncomfortable symptoms and further problems. Psychosocial and psycho educational programs may aid cancer patients as adjuvant therapy, according to growing evidence. These therapies provide patients a feeling of control, reduce the stigma of having a "psychiatric problem" or cancer, and allow them to communicate their concerns.

Psychosocial therapy help patients build proactive coping methods, reduce anxiety and depression, and increase self-esteem. Additionally, these regimens improve QOL, immunological health, and perhaps lifespan.

Progressive muscular relaxation, diaphragmatic breathing, guided visualization, and social support reduce stress. Pre-treatment interventions help patients tolerate therapy with fewer side effects. Yoga is intriguing because it combines stress-reduction tactics with fundamental breathing, stretching, and relaxation exercises that may aid cancer patients. Yoga may have benefits, according to growing study. Ancient literature describe yoga's physical and mental health benefits. Despite millennia of usage in India, it is just now gaining worldwide popularity.

Yoga is an ancient science and one of six main Indian philosophies. Yoga helps achieve spiritual super conscious realms beyond sensory awareness and comprehension. It covers moral, spiritual, mental, and physical health. Yoga is mentioned in the Vedas, ancient Indian writings. The "Yoga Sutras" by Patanjali, written about 900 B.C., has 196 aphorisms that explain this practice and many ideas. Aphorisms have shaped yoga today. His proverbs define yoga as "citta vrtti nirodhah," or "controlling the mind," employing Astanga Yoga's eight steps. If performed regularly, the eight levels of yoga in this practical explanation may sublimate all mental fluctuations in the mind and super consciousness (Samadhi). Systematic yoga techniques include the Yamas (moral precepts), Niyamas (disciplines), Asanas (postures), Pranayama (controlled breathing through the nose), Pratyahara (introspection/distraction of the mind from external sensory stimuli), Dharana (concentration), Dhyana (meditation), and Samadhi (absorption). A meditative absorptive mood is considered to provide delight to mind and body. Buddhist writings often compare these yoga approaches to mindful exercises. MBSR is another name for this curriculum. Many people use "Asana" and "Pranayama," the third and fourth limbs of yoga, interchangeably, despite the belief that they are interrelated. Each of these strategies is distinct, much as interpersonal, cognitive behavioral, and psychodynamic therapies employ numerous psychotherapy modalities.

Asana, Dharana (concentration), Pratyahara (sensory control), and Dhyana (meditation) are internal practices supported by the first four limbs, Yama, Niyama, Asana, and Pranayama outer purification activities. Some traditional yoga styles, including hatha yoga, include purification Kriyas. These cleansing exercises must be done before asanas and pranayama to ensure proper digestion, circulation, and metabolic imbalances that affect prana flow .Pranayama helps prana flow through these channels, while asanas strengthen and stretch them. Asanas and pranayama quiet the mind, prepare it to absorb sensory information, reduce thoughts by promoting focus and attention, and lead to peaceful, meditative states that enhance well-being and relaxation. Despite yoga's various spiritual emancipation and upliftment benefits, we only discuss those that enhance cancer patients' health.

However, ancient Indian yoga writings claim that each of these eight limbs (steps) affects various health aspects. The Panchakosa idea of existential states in the Upanishads matches Western psychology's psychosomatic disease theory. Therefore, the Upanishads have presented a comprehensive view of health, stating that each individual has five existential states. The mind, includes Raghavendra, the gross physical body, Annamaya kosa, with its organs and systems, and the subtle functional body, Pranamaya kosa, which controls all physiological functions: Yoga against cancer reviews the three kosas: intellect or reasoning (Vignanamaya), emotions and ideas (Manomaya), and natural happy states of awareness (Anandamaya). Changing perception and ignorance in Vignanamaya Kosa causes mental turmoil or stress in Manomaya Kosa, which leads to physiological changes in Pranamaya Kosa and organic changes in the physical body, or Annamayakosa, explaining psychosomatic disease. Yoga practices that work at all five levels may correct imbalances in these kosas and restore bodily equilibrium. We may experience deeper joy by employing asanas and kriyas at the Annamaya kosa level, pranayama at Pranamaya, relaxation and meditation at Manomaya, and counseling at Vignanamaya. Finally, increasing internal awareness of these levels and relaxing triggers a relaxation response that restores balance.

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Many studies have employed yoga styles and schools that stress one or more of the above activities. Iyengar, Hatha, Vinyasa, Sudarshan Kriya, Integrated Approach to Yoga Therapy, and Tibetian Yoga are examples. Western meditation, such as transcendental meditation and MBSR, differs from Eastern yoga.

Cancer patients are increasingly embracing various yoga traditions to improve QOL and reduce stress, mood swings, and symptom pain. We explain how yoga treatments operate and their psychological benefits and symptom-reduction effects.

Mental Anxiety and Emotions Yoga reduces sadness, anxiety, and trait decrease in cancer patients and survivors following cancer-directed treatment, according to several studies. Yoga may affect anxiety, melancholy, and psychologic discomfort, according to several review publications. Yoga reduces anxiety via pranayama and relaxation, but hyperventilation breathing techniques like Bhastrika, Kapalabhati, and Ujjayi have antidepressant benefits. Some asanas have anxiolytic and antidepressant qualities and reduce psychological stress. Most research suggests that a yoga program should last four to twelve weeks, with at least two supervised classes per week and home practice on the remaining days. A Cochrane research found that yoga reduces depression, anxiety, and fatigue on par with psychosocial and educational interventions.Another research found moderate to significant psychological benefits from yoga. However, another examination indicated no substantial changes in anxiety, despair, pain, or sleep. Meditation like yoga, tai chi, and Qi Gong improves health-related quality of life in cancer patients.

Symptom Management

Yoga has been used to alleviate tiredness, sleeplessness, appetite loss, CINV, and cancer discomfort. Yoga intervention had moderate to significant effects in these trials. Along with Pavanamuktasana and Uttana padasana, cooling pranayama like Sheetali, Sheetakari, and Sadanta assist cure CINV. Yogasanas, mild stretches, Sudarshan kriya, and relaxation practises have been demonstrated to relieve fatigue, discomfort, and sleeplessness. Movement meditation and cycle meditation, which combine postures with relaxation techniques, improve sleep and stress. Mind-sound resonance, which involves chanting and concentrating on "a," "u," and "m," as well as mantras, has been demonstrated to reduce anxiety and induce serenity. Other yoga schools that employ props for stretching and relaxation have improved cancer patients' fatigue and discomfort. According to the Pancha Prana theory, prana flow determines symptom-management asanas. CINV treatment requires correcting Samana vayu, which is in the stomach and intestines. Slow vayu may cause abdominal discomfort and enhance Udana vayu, or upward force, which can cause vomiting. Antiemetics block Udana and Apana vayu (downward force), causing nausea and gastroparesis. Operating on the abdomen speeds up the sluggish Apana vayu, increasing appetite and reducing nausea. Slow Samana vayu and vyana blockage cause myalgia and fatigue. Yoga programs tailored to cancer sufferers may help. Table 1 shows selected modules for various symptoms.

Yoga Intervention Mechanism Yoga reduces stress, alters stress responses, and increases control over events in addition to its physical benefits. These effects include HPA axis regulation, relaxation response, lower stress hormones, and improved parasympathetic function. Cancer patients who see their condition as dangerous and worry constantly can benefit from this. Depression-induced irregular diurnal cortisol surges may impair immune function and cause insomnia. Depression symptoms diminish with less intrusive thoughts, perceptions, and responses.

ensuing inflammation. Yoga is known to modify the psychoneuroendocrine and psychoneuroimmune axis, lowering allostatic stress and restoring homeostasis. Yoga has been proven to increase natural killer cells, decrease cortisol, and reduce inflammatory cytokines .These changes lessen distress and improve patients' quality of life.

Yoga Intervention Contraindications Yoga is good for both healthy and sick people, but cancer patients should be careful since they are unwell and at danger of damage. Yoga has no negative impact on cancer patients in previous study. If lengthy bone metastases are present, several asanas increase fracture risk, especially in elderly people. Second, hyperventilation may cause pneumothorax , and radiation-treated lung cancer or metastases patients are more likely to acquire it. Yoga, pranayama, and slow, deep breathing benefit abdominal surgery, pleural effusion, ascites, etc. patients. Patient health and performance are important while selecting yoga therapy.

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Table 1: List of Yoga practices for the management of Cancer Related Symptoms

	Fatigue	CINV	Constipation	Head and neck	General Stress/QoI	Myofascial pain (Upper extremity)	Myofascial pain (Lower extremity)	Pre Surgery/ Post Surgery	Headache
Loosening exercise- Upper extremity	✓	×	×	✓	✓	✓	×	✓	✓
Loosening exercise lower extremity	✓	×	✓	×	✓	×	✓	✓	✓
Breathing exercises	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hand and shoulder stretch Breathing	✓	×	×	✓	✓	✓	×	✓	✓
Ardhakatichakrasana	✓	✓	✓	✓	✓	✓	✓	✓	✓
Padahastasana	✓	×	✓	×	✓	✓	×	✓	✓
ArdhaChakrasana	✓	×	✓	✓	✓	✓	✓	✓	✓
Trikonasana	✓	×	×	×	✓	✓	✓	✓	✓
Uttanapadasana	×	×	✓	×	×	×	✓	×	✓
Pavanamuktasana	×	×	✓	×	×	×	✓	✓	✓
Sethubandasana	×	×	✓	×	×	×	✓	×	×
Bhujangasana	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ardhashalabhasana	✓	✓	✓		✓	✓	✓	✓	✓
Shashankasana+m Kara chanting	✓	✓	✓	✓	✓	✓	✓	✓	✓
Yogic breathing	✓	✓	✓	✓	✓	✓	✓	✓	✓
Relaxation techniques*	✓	✓	✓	✓	✓	✓	✓	✓	✓
Slow pranayama*	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cooling Pranayama*	✓	✓	×	✓	✓	✓	✓	✓	✓
Pranayama *	✓	✓	✓	✓	✓	✓	✓	✓	✓

Mind-body interventions like yoga may help in cancer treatment. However, yoga and meditation therapies have mostly been studied in breast cancer patients. These medicines must be tested in patients with head and neck, lung, cervical, and other solid tumors, which make up a large fraction of cancer cases. We must evaluate this technique in diverse therapy settings. Yoga improves cancer patients' quality of life and reduces symptoms. However, cost-effectiveness studies are needed.

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