

## SHORT COMMUNICATION

# Virtual Yoga as an Innovative Approach to Cancer Patient Care: Evidence and Opportunities

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### ABSTRACT

**Introduction:** Virtual yoga has gained attention as an accessible intervention to support cancer patients in managing symptoms, such as pain, fatigue, anxiety, and depression. However, its efficacy and feasibility compared to in-person sessions remain unclear.

**Methods:** A literature review was conducted using PubMed, the Cochrane Library, Scopus, and Google Scholar. Studies from 2000 to 2024 that investigated the effects of virtual yoga interventions on patients with cancer were included in the study. The outcomes assessed were symptom burden, QoL, pain, fatigue, and patient adherence.

**Results:** Four studies were identified that showed that virtual yoga led to moderate improvements in sleep disturbance, pain intensity, anxiety, depression, and fatigue among cancer patients. These studies also demonstrated the feasibility of virtual yoga, although adherence and access to technology posed challenges for some participants.

**Discussion:** The results indicate that virtual yoga is a promising tool for improving physical and psychological outcomes in patients with cancer. However, challenges, such as the digital divide and patient engagement, need to be addressed. Further research, including large-scale trials, is required to confirm its efficacy and to integrate virtual yoga into standard cancer care protocols.

**Conclusion:** Virtual yoga presents a promising tool for supporting cancer patients by offering a flexible and accessible means to manage symptoms and improve quality of life.

## 1. INTRODUCTION

Patients with cancer frequently experience significant physical and psychological symptoms, including pain, fatigue, anxiety, and depression. Traditional in-person yoga has demonstrated efficacy in alleviating these symptoms, thereby improving overall well-being.<sup>[1-3]</sup> However, access to in-person yoga classes may be limited due to mobility issues, treatment side effects, geographical barriers, or public health concerns such as the COVID-19 pandemic. The delivery of virtual yoga through online platforms is a potentially viable alternative. This short review reexamines the efficacy of virtual yoga in cancer patients, drawing on recent studies and empirical evidence.

## 2. METHODS

A systematic literature review was conducted on studies from 2000 to 2024 investigating virtual yoga programs for patients with cancer. The review examined studies that assessed psychological and physical outcomes, including symptom burden, quality of life, pain, fatigue, and self-reported adherence. The inclusion criteria stipulated that studies involve virtual yoga interventions lasting a minimum of 8 weeks, focus on cancer patients, and report measurable outcomes. A comprehensive search was performed utilizing PubMed, Cochrane Library, Scopus, and Google Scholar databases, employing the following keywords: “virtual yoga,” “cancer patients,” “symptom management,” and “digital health interventions.”

## 3. RESULTS

Four studies were identified that evaluated the impact of virtual yoga interventions on patients with cancer. Each study examined various physical and psychological outcomes, including symptom burden,

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quality of life, and feasibility of virtual yoga delivery. Collectively, these studies provide insights into the potential benefits of virtual yoga as a supportive care option for cancer patients.

### 3.1. Improvement in Symptom Burden

A randomized pilot trial involving patients with myeloproliferative neoplasms (MPN) found that a 12-week online yoga intervention led to small-to-moderate improvements in sleep disturbance, pain intensity, anxiety, and depression. Notably, there was a significant reduction in the inflammatory biomarker TNF- $\alpha$  among participants, indicating potential benefits in managing inflammation, a common issue in patients with cancer.<sup>[4]</sup>

### 3.2. Cancer-Related Fatigue

Another randomized trial comparing home-based yoga with strengthening exercises for breast cancer survivors with cancer-related fatigue reported significant improvements in multiple fatigue domains and quality of life measures within both groups. The virtual yoga format demonstrated feasibility, with reasonable uptake and adherence, suggesting it may be a viable option for addressing fatigue in cancer survivors.<sup>[5]</sup>

### 3.3. Young Adult Cancer Patients

An 8-week pilot study delivered through videoconference to young adults affected by cancer showed improvements in flexibility, functional mobility, quality of life, and psychological outcomes, such as mindfulness and perceived stress. This study also reported high retention rates and minimal adverse events, indicating the feasibility and acceptability of virtual yoga in this population.<sup>[6]</sup>

### 3.4. Feasibility and Acceptability

A pilot study exploring virtual yoga for cancer survivors with chronic chemotherapy induced peripheral neuropathy (CIPN) pain found that participants experienced significant improvements in patient-reported outcomes, including pain severity, fatigue, and depression. The virtual format was feasible, with a substantial proportion of participants adhering to the protocol, demonstrating that virtual yoga could be an effective non-pharmacological option for managing CIPN.<sup>[7]</sup>

During the COVID-19 pandemic, numerous cancer centers have transitioned from in-person to virtual integrative oncology interventions. At the Dana-Farber Cancer Institute, virtual yoga sessions observed a significant increase in patient participation, highlighting the potential efficacy and feasibility of virtual yoga as part of cancer care during periods of restricted mobility or social distancing.<sup>[8]</sup>

## 4. DISCUSSION

The reviewed studies highlight the potential of virtual yoga to improve physical symptoms, psychological well-being, and overall quality of life in patients with cancer. These findings are consistent with those of research on in-person yoga for cancer care, suggesting that virtual delivery may be a viable alternative. However, challenges, such as the digital divide and maintenance of patient engagement, must be addressed to optimize the effectiveness of virtual interventions.

### 4.1. Digital Divide

A key challenge identified is the “digital divide.” Access to the necessary technology (smartphones, tablets, and computers) and stable internet connections may prevent some cancer patients from

participating in virtual yoga. Older adults and individuals from lower socioeconomic backgrounds may also lack the digital literacy required to navigate virtual platforms effectively. Efforts to bridge this gap, such as providing technology access and digital literacy training through healthcare providers or community organizations, are critical to ensuring equitable participation in virtual yoga interventions.

### 4.2. Lack of Personalized Interaction

The absence of in-person contact might diminish the therapeutic relationship between instructor and patient, potentially reducing the efficacy of yoga practice. This also restricts the instructor’s capacity to provide physical adjustments and modifications to ensure safety.

### 4.3. Engagement and Adherence

Maintaining consistent engagement and adherence in a virtual format presents challenges without the direct motivation and accountability offered by in-person group settings. Regular follow-up, personalized feedback, and increased opportunities for interaction may contribute to improved patient adherence. Future directions and research need.

### 4.4. Developing Tailored Programs

Subsequent programs should prioritize the development of personalized yoga interventions for diverse cancer types, stages, and patient preferences to optimize engagement and efficacy. Integration of mindfulness and meditation may enhance the holistic benefits of virtual yoga.

### 4.5. Expanding Access

Efforts should be directed toward bridging the digital divide, potentially through the provision of technology access and digital literacy training to cancer patients. Collaborations with healthcare providers and community organizations can facilitate an expanded reach.

### 4.6. Conducting Robust Research

Additional large-scale randomized controlled trials are necessary to determine the efficacy and safety of virtual yoga in cancer care, focusing on its impact on specific symptoms, quality of life, and survival outcomes. Comparative studies on virtual and in-person yoga can yield valuable insights into their respective advantages and limitations.

### 4.7. Integrating Virtual Yoga into Cancer Care

Virtual yoga can be incorporated into standard cancer care protocols, particularly in palliative care or survivorship programs centered on symptom management and quality of life. Training health care providers to recommend and facilitate virtual yoga sessions can further enhance their acceptance and utilization.

## 5. CONCLUSION

Virtual yoga presents a promising tool for supporting cancer patients by offering a flexible and accessible means to manage symptoms and improve quality of life. While there are challenges related to access and engagement, the potential of virtual yoga in cancer care is substantial. Further large-scale studies are needed to confirm its efficacy and guide its integration into standard care protocols, particularly for palliative and survivorship care.

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## 8. ETHICAL APPROVALS

Ethical approval was not required for this study, as it is a short communication whose data were obtained through a literature search.

## 9. CONFLICTS OF INTEREST

Nil.

## 10. DATA AVAILABILITY

This is an original manuscript and all data are available for only review purposes from principal investigators.

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