

# A Cross-sectional Survey to Assess Knowledge, Attitude, and Practice of Yoga among Cancer Patients at a Tertiary Care Hospital

## Abstract

**Background:** Cancer incidence and mortality are rapidly growing worldwide. Cancer affects the overall quality of life of cancer patients. Yoga has its origin in the ancient times. This ancient practice has been used for holistic well-being for ages. Yoga as an alternative therapy might be beneficial for cancer patients too. This study was conducted to assess knowledge, attitudes, and yoga practices among cancer patients. **Materials and Methods:** For this cross-sectional survey, a self-designed questionnaire was validated and distributed among 25 cancer patients for a pilot study. Then, a full-fledged study was conducted based on the interviews of 1000 cancer patients at a tertiary care oncology unit and the data were analyzed using R 3.6. **Results:** A total of 1000 participants were enrolled in this cross-sectional survey. Out of 1000 participants, 91 were excluded as they responded that they were not familiar with the term “Yoga” in the first question of the questionnaire. Of 919 participants, 238 strongly agreed and 395 agreed with the question that people who practice yoga are less prone to diseases, showing that 68.87% of cancer patients have a positive attitude toward yoga. However, only 145 (15.77%) of the participants practice yoga regularly. Lack of time was the most common reason for not practicing yoga, and the other reasons were the lack of interest and insufficient facilities. **Conclusion:** The present study on 1000 patients from the yoga capital of the world, Rishikesh, highlights the fact that the majority of cancer patients are aware of yoga practice’s benefits and if given the opportunity to learn appropriate techniques, yoga can further improve the outcome in such patients. There is a need to design the effective yoga programs for cancer patients to promote suitable yoga practices in this population.

**Keywords:** Awareness, cancer, knowledge, attitude, and practice, oncology, survey, yoga

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## Introduction

According to the most recent estimates of global mortality data (2019), 3 out of every 10 people who die prematurely (30–70 years) of noncommunicable diseases die from cancer.<sup>[1]</sup> Unfortunately, more than 10 million people died of cancer in 2019 alone, approximately twice the number in 1990.<sup>[2]</sup> Cancer incidence and mortality are rapidly growing worldwide. According to the International Agency for Research on Cancer (by WHO), the incidence of new cases of cancer in India in 2018 was 1,157,294, and 784,821 cancer patients died.<sup>[3]</sup> In 2016, Uttarakhand state had a death rate of 66.6 and an incidence rate of 92.9 for every 1000 people screened for cancer.<sup>[4]</sup>

It is well established that cancer is a global health problem affecting people of all ages, genders, faiths, cultures, and socioeconomic classes.<sup>[5]</sup>

With its holistic approach to health, yoga is recognized as a complementary and alternative medicine by the National Institute of Health.<sup>[6]</sup> Yoga has been an ancient practice being used for holistic well-being for ages. In the Yoga Sutra, Sage Patanjali illustrated the eight limbs of Yoga. These are a progressive series of steps – Yamas (restraints), Niyamas (observances), Asanas (postures), Pranayams (regulation of breath), Pratyahara (drawing the senses inward to still the mind), Dharna (concentration), Dhyana (meditation), and Samadhi (super-consciousness), which purify the body and mind.<sup>[7]</sup> Today, many people identify yoga as asana only, but asana is just one step of the series. Yoga as a mind-body intervention is being practiced worldwide.

Previous literature has reported that yoga is a promising alternative therapy for

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cancer patients' treatment tolerance and quality of life.<sup>[8-10]</sup> Possible reasons to consider yoga for cancer patients may include some beneficial effects such as improving mood disturbances and sleep quality and reducing depression, anxiety, and stress.<sup>[11]</sup> Different yogic practices such as asanas, pranayama, and meditation help to improve functional capacity, post-treatment fatigue, and quality of life.<sup>[12,13]</sup> Demand for yoga as supportive therapy in oncological care is increasing. "Society for Integrative Oncology" also recommends yoga for cancer survivors during and after treatments.<sup>[10]</sup>

Very few survey-based cross-sectional studies have focused on the knowledge, attitude, and practice (KAP) of yoga. A cross-sectional survey-based study was carried out to explore the overall awareness regarding yoga among patients suffering from cardiovascular and neurological disorders. The study results revealed that the patients had awareness, adequate knowledge, and a positive attitude toward yoga, but the frequency of practice of yoga was low.<sup>[14]</sup> Another online survey was conducted on oncologists to explore their knowledge, attitudes, beliefs, and current referral practises concerning yoga in adult cancer. Based on the study results, few oncologists recommended yoga to patients to improve health-related wellness, such as improving physical activity, managing fatigue, insomnia, stress reduction, and muscle or joint stiffness.<sup>[15]</sup> One cross-sectional study was conducted on pregnant women to assess the KAP toward transcendental meditation (TM). Study results illustrated that pregnant women had less awareness about TM and a low frequency of practice.<sup>[16]</sup> Another cross-sectional study was conducted to understand the KAP associated with meditation among people with melanoma. As per study results, most participants were aware of the benefits of meditation, but almost half of the participants had little knowledge about meditation, and very few participants maintained consistent levels of practice. The gap between people's knowledge of meditation and their perception of understanding meditation may be the leading cause of low participation in the practise and negative attitudes.<sup>[17]</sup> A nationwide door-to-door cluster sample survey was carried out to determine Yoga's KAP gaps. Based on the study results, 11.8% of the Indian population practices yoga. The highest number of yoga practitioners was found in the north zone and 91.5% of participants believed in the health benefits of yoga. The study results revealed a substantial knowledge-practice gap in India.<sup>[18]</sup> A study was conducted to determine interest and barriers related to yoga among cancer survivors. Out of a total of 857 patients, more than 70% never practiced yoga and 52.3% of cancer survivors were interested in practicing yoga. In practicing yoga, barriers were not being aware of yoga benefits (36.3%), difficulty motivating (28.7%), experiencing symptoms (22.9%), and not having enough time (22%).<sup>[19]</sup>

Although scientific literature reveals different beneficial effects of yoga, there is a lack of data regarding

cancer patients' knowledge of yoga in general or as a complementary and alternative therapy. Hence, in this study, we aim to assess the knowledge, attitude, and practice of yoga in cancer patients coming to the tertiary care hospital in a hilly state in India.

This survey was designed to gather the information about the lacunae in Yoga KAP at a tertiary care center. This shall not only give an overview of the data on KAP of yoga among cancer patients in the region but also help develop and/implement protocols on the use of yoga interventions for cancer and aid in policy-making in the long run.

## Materials and Methods

This cross-sectional study was conducted among patients diagnosed with cancer (age > 18) undergoing treatment for cancer of any stage or receiving follow-up care at outpatient departments (OPDs).

Based on our study aims, the questionnaire was designed and developed to assess KAP of yoga among cancer patients through the collaborative efforts of the study team members. The questionnaire was sent to seven experts from different fields for validation purposes and was validated by the expert consensus. Out of the seven expert panelists, two are specialists in Yoga, and the others are from community medicine, medical oncology, surgical oncology, radiation oncology, and public health. All the experts provided scores based on a Likert scale of 1–4, depicting 1 - not relevant, 2 - somewhat relevant, 3 - relevant, and 4 - very relevant. Then, permission from the Institutional Ethics Committee was obtained. After that, we initially conducted a pilot survey to assess the feasibility of the questionnaire on 25 participants. Recorded responses were of appropriate quality, and the data collected was accurate. Then, a full-fledged study was conducted for the next few months, up to 1000 sample size.

The questionnaire is divided into four sections: The first is about knowledge, the second is about attitude, the third is about practices, and the last is about yoga practice barriers. The team met with the population of interest by visiting them in person at Oncology OPD of All India Institute of Medical Sciences (AIIMS), Rishikesh. Individuals of both male and female gender, above 18 years of age, having a histopathological diagnosis of cancer (all stages), and currently undergoing treatment at AIIMS Rishikesh were considered eligible for the survey. Those not willing to participate in the study, not willing to provide a written informed consent, or critically ill patients unable to do yoga were all excluded. Those willing to participate were screened for eligibility, and a written consent was taken from them before distributing questionnaires. The study team members personally met and interacted with the participants one-to-one during OPD working hours, i.e., 9:00 am to 5:00 pm, and individually explained the need, scope, and procedures of the survey to every participant.

Literate participants understanding either Hindi or English were asked to fill up the pro forma by themselves while providing explanations if needed or when asked for. For participants who were unable to read, questions were explained to them verbally and the assessor recorded responses.

**Statistical analysis**

The statistical analysis of the data was conducted on R 3.6 environment. The descriptive analysis of the demographic data and the answers to questionnaire questions were summarize in the numbers and percentage. We analyzed cancer patient’s knowledge of yoga, attitude toward yoga, and how often they practice yoga. The bivariate analysis was done to understand the knowledge, attitude, and yogic kriya practice behavior among the different subgroups of the cancer patients. The Chi-square test was used to compare the sociodemographic characteristics of cancer patients with their knowledge, attitude, and yoga practice behavior. Multivariate logistic regression analysis was done to identify the independent predictors of knowledge, attitude, and practice of yoga among cancer patients.

**Results**

A total of 1000 participants were enrolled in this cross-section survey from October 29, 2021, to April 22, 2022 [Table 1]. There were 490 males (49%) and 510 females (51%). Seven hundred and ninety-two individuals (79.2%) were above 40 years of age, and 208 (20.8%) were under 40 years of age; 380 (38%) participants were from rural areas, and 620 (62%) from urban areas; 838 (83.8%) were Hindu, and the rest of them, 162 (16.2%) were non-Hindus. Among cancer types, mentioned in Figure 1a, 231 (23.1%) patients were diagnosed with breast cancer, 154 (15.4%) with head-and-neck cancer, 90 (9%) with carcinoma of the lung, 69 (6.9%) had ovarian cancer, 48 (4.8%) had cervix cancer, and 408 (40.8%) had other malignancies. According to their education status, as mentioned in Figure 1a, 23% of population was unable to read and write, 12% of population was primary educated, 12% of population was 8<sup>th</sup> pass, 14% of population was 10<sup>th</sup> pass, 19% of population was 12<sup>th</sup> pass, 20% was graduate and 1% population was post-Graduate.

**Bivariant analysis**

*Knowledge of Yoga*

Out of the 1000 respondents, mentioned in Figure 1b, 91.9% of the study population were familiar with the word “yoga,” wherea the remaining 8.1% were unfamiliar and excluded. 52.34% of participants had heard of yogic practices other than asana. Only a trivial proportion of patients (19.47%) knew that yoga had been accepted as an alternative therapy worldwide. Worldwide, June 21 is celebrated as “International Yoga Day,” known to about 59.3% of participants [Table 2]. According to the Chi-square test, the knowledge of yoga was associated with age ( $P < 0.001$ ), religion ( $P < 0.001$ ),

residential area ( $P = 0.05$ ), education ( $P < 0.001$ ), and gender ( $P < 0.01$ ).

*Attitude towards Yoga*

Mentioned in Figure 2b, among the participants who were aware of yoga, 25.89% strongly agreed, 42.98% agreed, 25.78% confused, 3.69% disagreed, and 1.63% strongly disagreed that people who practice yoga are less prone to diseases. Could yoga heal disease? High percent 54.8% of respondent were confused, but only 2.5% participants were strongly agreed. Mentioned in Figure 2b, 57.5% of respondents agreed that yoga can be practiced by any religion people. 57.6% patients agreed that yoga is beneficial for the mental health [Table 3]. Significant association of attitude toward yoga was found with age ( $P < 0.01$ ), gender ( $P < 0.01$ ), education ( $P < 0.01$ ), and religion ( $P < 0.01$ ).

*Practice of Yoga*

The study participants who were aware of yoga, only 43.41% had practiced it previously, 15.77% were regular with their yoga practices. Mentioned in Figure 1b, 22.19% had practiced under the guidance of a yoga instructor, and 37.54% felt energized after the practice sessions [Table 4]. Yoga practice was associated with age ( $P < 0.001$ ), religion ( $P < 0.001$ ), and residential area ( $P < 0.001$ ), but not with gender ( $P = 0.3$ ). Mentioned in Figure 2a, the main barriers for not practicing yoga among the study participants were insufficient facilities (128/919, i.e., 13.92%); lack of time (239/919, i.e., 26%); lack of interest (221/919, i.e., 24.04%); lack of motivation (24/919, i.e., 2.61%); lack of company (31/919, i.e., 3.37%); not feeling its need (131/919, i.e., 14.25%); and not applicable as practicing regularly (145/919, i.e., 15.77%).

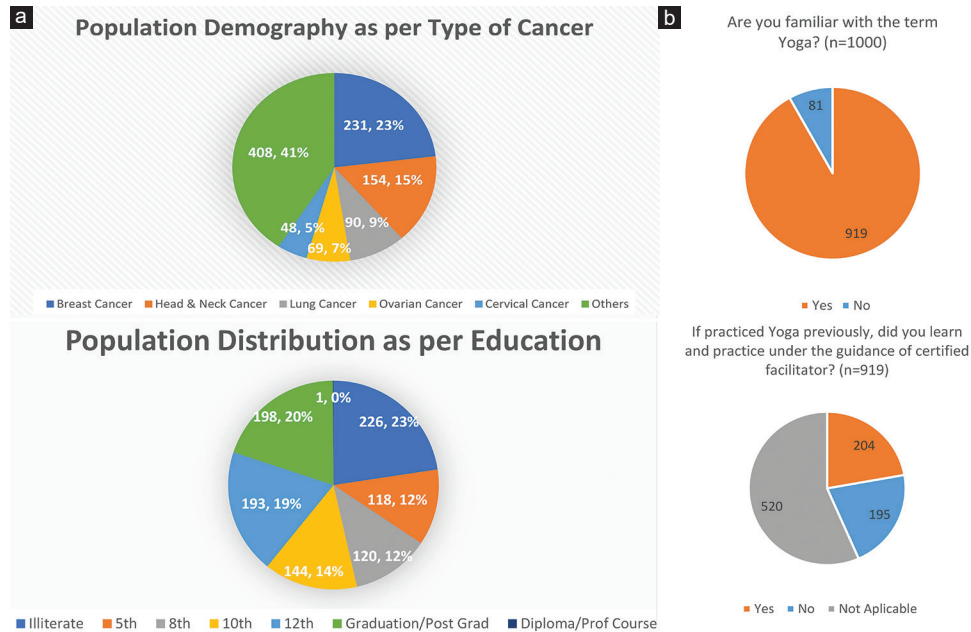
**Table 1: Population Distribution**

| Patient demographics                              |   |            |
|---|---|------------|
| Variables   | Categories                              | n (%)      |
| Gender  | Female                                  | 510 (51)   |
|   | Male                                    | 490 (49)   |
| Age   | Younger (<40)                           | 208 (20.8) |
|   | Elder (>40)                             | 792 (79.2) |
| Area  | Rural                                   | 380 (38)   |
|   | Urban                                   | 620 (62)   |
| Diet  | Vegetarian                              | 576 (57.6) |
|   | Mix diet                                | 424 (42.4) |
| Religion  | Hindu                                   | 838 (83.8) |
|   | Non-Hindu                               | 162 (16.2) |
| Patient distribution as per diagnosis/cancer type |   |            |
| Type of cancer                                    | Number of patients (out of 1000), n (%) |            |
| Breast cancer                                     | 231 (23.1)                              |            |
| Head and neck cancer                              | 154 (15.4)                              |            |
| Lung cancer                                       | 90 (9)                                  |            |
| Ovarian cancer                                    | 69 (6.9)                                |            |
| Cervical cancer                                   | 48 (4.8)                                |            |
| Others  | 408 (40.8)                              |            |

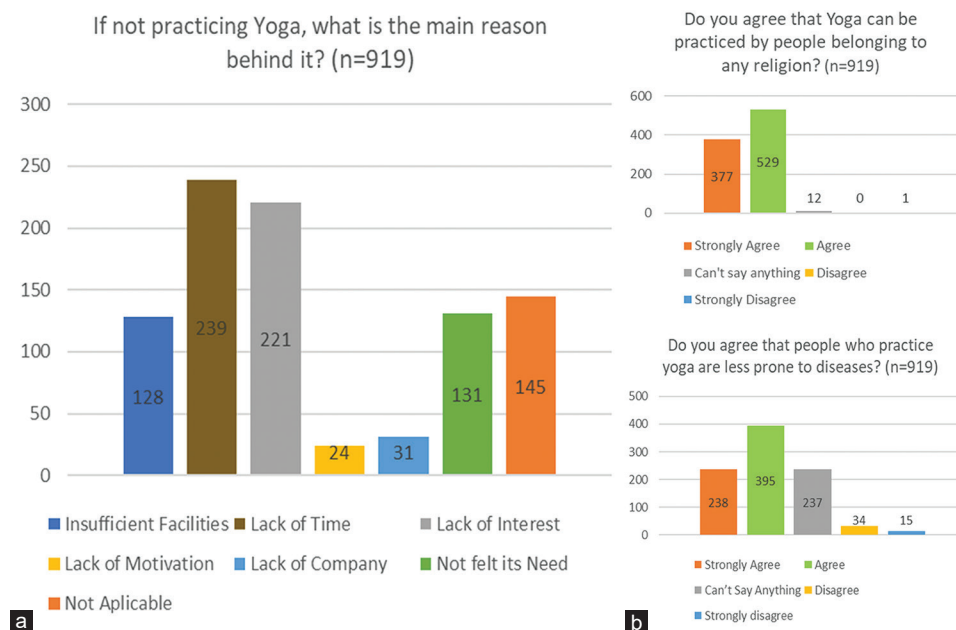
**Multivariate analysis**

We created a logistic multivariate regression model to identify the independent determinants for knowledge of yoga, attitude toward yoga, practice, and barriers to practicing yoga among cancer patients. Predictors analyzed were age, gender, education, area, and religion. Religion, age, and education were significantly associated with the knowledge of yoga. Older (age > 40 years) had more information of yoga than younger patients (age < 40 years) (odds ratio [OR] = 0.24, 95% confidence interval [CI] = 0.08–0.65, *P* = 0.005). Non-Hindus were

more aware of yoga benefits than Hindus (OR = 3.3, 95% CI = 1.9–5.8, *P* = 0.0001); population having less than primary education were well versed about yoga than others. Cancer patients’ belief that the practice of yoga avoids diseases was significantly associated with gender and education. Males had a more positive attitude toward yoga practices than females (OR = 0.7, 95% CI = 0.57–0.97, *P* = 0.03); those having less than primary education (<5<sup>th</sup> grade) believed more in yogic practices than participants with higher education (OR = 0.28, 95% CI = 0.19–0.4, *P* = 0.001).



**Figure 1: (a) Population characteristics as per disease and demography (b) participants' knowledge and practice of yoga**



**Figure 2: (a) Barriers in regular practice of yoga among participants (b) participants' attitude towards Yoga**

**Table 2: Population response for “Knowledge of Yoga”**

| Questions regarding knowledge of Yoga   | Total respondents | Responded “Yes”  | Responded for “No” |
|---|-------------------|------------------|--------------------|
| Are you familiar with the term Yoga?  | 1000              | 91.9% (919/1000) | 8.1% (81/1000)     |
| Have you heard of any yogic practices other than Asana?                             | 919               | 52.3% (481/919)  | 47.7% (438/919)    |
| Do you know that Yoga has been accepted as an alternative therapy around the world? | 919               | 19.5% (179/919)  | 80.5% (740/919)    |
| Do you know that June 21 is celebrated as “International Yoga Day?”                 | 919               | 59.3% (545/919)  | 40.7% (374/919)    |

**Table 3: Population response for “Attitude toward Yoga”**

| Questions regarding attitude toward yoga                                     | Responded “Strongly Agree” | Responded “Agree” | Responded “Can’t say” | Responded “Disagree” | Responded “Strongly disagree” |
|--|----------------------------|-------------------|-----------------------|----------------------|-------------------------------|
| Do you agree that people who practice yoga are less prone to diseases?       | 25.9% (238/919)            | 43% (395/919)     | 25.8% (237/919)       | 3.7% (34/919)        | 1.6% (15/919)                 |
| Do you agree that yoga can heal a diseased individual?                       | 2.5% (23/919)              | 17.3% (159/919)   | 54.8% (504/919)       | 19.8% (182/919)      | 5.5% (51/919)                 |
| Do you agree that yoga can be practiced by people belonging to any religion? | 41% (377/919)              | 57.6% (529/919)   | 1.3% (12/919)         | 0                    | 0.1% (1/919)                  |
| Do you agree that yoga can be practiced by a married individual?             | 41.7% (383/919)            | 57.1% (525/919)   | 1.2% (11/919)         | 0                    | 0                             |
| Do you agree that yoga is also beneficial for maintaining mental health?     | 56.7% (521/919)            | 36.9% (339/919)   | 6.3% (58/919)         | 0.1% (1/919)         | 0                             |

**Table 4: Population response for “Practice of Yoga”**

| Questions regarding practice of yoga  | Responded “Yes” | Responded “No”  | Not applicable   |
|---|-----------------|-----------------|------------------|
| Have you ever practiced any form of yogic technique?  | 43.4% (399/919) | 56.6% (520/919) | 0                |
| If practiced yoga previously, did you use to practice regularly?                                      | 15.8% (145/919) | 27.6% (254/919) | 56.6% (520/919)2 |
| If practiced yoga previously, did you learn and practice under the guidance of certified facilitator? | 22.2% (204/919) | 21.2% (195/919) | 56.6% (520/919)  |
| If practiced yoga previously, did you feel energized after the practice sessions?                     | 37.5% (345/919) | 5.9% (54/919)   | 56.6% (520/919)  |

**Table 5: Multivariant model of factors associated with the knowledge, attitude, and practice of Yoga**

| Component             | Population characteristics | Type          | OR        | 95% CI    | P     |
|-----------------------|----------------------------|---------------|-----------|-----------|-------|
| Knowledge of Yoga     | Religion                   | Hindu         | 1         | 1.8–5.8   | <0.01 |
|                       |                            | Non-Hindu     | 3.3       |           |       |
|                       | Age                        | Elder (>40)   | 1         | 0.08–0.65 | <0.01 |
|                       |                            | Younger (≤40) | 0.2       |           |       |
| Education             | Illiterate                 | 1             | 0.02–0.09 | <0.01     |       |
|                       | Literate*                  | 0.05          |           |           |       |
| Attitude towards Yoga | Gender                     | Female        | 1         | 0.5–0.9   | 0.03  |
|                       |                            | Male          | 0.7       |           |       |
| Education             | Illiterate                 | 1             | 0.19–0.42 | <0.01     |       |
|                       | Literate*                  | 0.28          |           |           |       |
| Practice              | Area                       | Rural         | 1         | 1.7–2.9   | <0.01 |
|                       |                            | Urban         | 2.2       |           |       |
|                       | Gender                     | Female        | 1         | 0.58–0.96 | 0.02  |
|                       |                            | Male          | 0.7       |           |       |
|                       | Religion                   | Hindu         | 1         | 0.4–0.89  | 0.01  |
|                       |                            | Non-Hindu     | 0.62      |           |       |
|                       | Age                        | Elder (>40)   | 1         | 1.05–1.94 | 0.02  |
|                       |                            | Younger (≤40) | 1.4       |           |       |

\*Literate are 5<sup>th</sup> pass, 8<sup>th</sup> pass, 10<sup>th</sup> pass, 12<sup>th</sup> pass, graduates/postgraduates and professionals. CI: Confidence interval, OR: Odds ratio

The practice of any of the yogic techniques by cancer patients was significantly associated with gender, religion, area, and age. Cancer patients from the urban areas practice yoga more than patients from rural India (OR = 2.2, 95%

CI = 1.7–2.9,  $P = 0.01$ ); male patients practice yoga less than female patients (OR = 0.7, 95% CI = 0.58–0.96,  $P = 0.02$ ). Hindu patients practice Yoga more than non-Hindus (OR = 0.6, 95% CI = 0.4–0.8,  $P = 0.01$ ); and the elderly (age > 40) practice yoga significantly more than younger cancer patients (OR = 1.4, 95% CI = 1–1.9,  $P = 0.02$ ) of any of the yogic techniques by cancer patients was significantly associated with gender, religion, area, and age. Cancer patients from the urSban areas practice yoga substantially more than patients from rural India (OR = 2.2, 95% CI = 1.7–2.9,  $P = 0.01$ ); cancer male patients practice yoga less than female patients (OR = 0.7, 95% CI = 0.58–0.96,  $P = 0.02$ ); Hindu patients practice yoga more than non-Hindus (OR = 0.6, 95% CI = 0.4–0.8,  $P = 0.01$ ); and the elderly (age > 40) practice yoga more than younger cancer patients (OR = 1.4, 95% CI = 1–1.9,  $P = 0.02$ ) [Table 5].

## Discussion

This is a first study of kind conducted on cancer patients to identify their knowledge attitude toward yoga. At AIIMS, Rishikesh population of patients coming for cancer treatment was found to have knowledge of yoga and had positive attitude toward yoga, but the use of yoga was limited.

This cross-sectional study was conducted among 1000 cancer patients. In our study, most cancer patients (91.9%) were aware of yoga. The study results illustrated that 68.88% of the participants (out of 919) believed that people who practice yoga are less prone to diseases and showed a positive attitude, but the pattern of yoga practice was found to be low (15.78%).

In our study, female participants were higher (51%) than male participants (49%). The same pattern is also reported in another study done in Australia, where a higher number of women suffering from cancer have been reported to practice meditation as compared to men.<sup>[17]</sup> More than half (79.2%) of the population who participated in the study was over 40 years of age, whereas 20.8% were under 40 years of age. 38% of the population represented rural areas and 62% represented urban areas. Participation of the Hindu population in the study was very high (83.8%) as compared to the non-Hindu (16.2%) population. The highest cancer patients (23.1%) were of breast cancer and 15.4% of head and neck cancer, 9% of lung cancer, 6.9% of ovarian cancer, and 4.8% of cervical cancer, and 40.8% of other types of cancer.

In the knowledge domain, 8.1% of the population was not familiar with “Yoga.” Most patients were familiar with yoga (91.9%) and 71.6% were over 40 years of age. For the question “Have you heard of any yogic practices other than asana?” 52.34% of the participants responded yes, while 47.66% responded no, which revealed that they recognized Yoga by asana only.

Yoga is accepted as a complementary and alternative therapy worldwide (6), but 80.52% of participants were unaware. On June 11, 2014, the United Nations proclaimed June 21 as the International Day of Yoga<sup>[20]</sup> since it is celebrated every year with full enthusiasm all around the world, while 59.30% of participants knew that June 21 is celebrated as “International Yoga Day” and 40.69% did not know about it.

Regarding the attitude dimension, we found that 68.88% of participants agreed that those who practice yoga are less susceptible to disease, indicating a very positive attitude toward yoga therapy. People’s awareness of the positive effects of yoga, such as reducing fatigue, sadness, and anxiety, improving sleep disturbance, and enhancing quality of life, may be responsible for this attitude.<sup>[18]</sup> In our survey, just 19.80% of individuals regarded yoga to be useful for disease recovery, whereas 25.35% disagreed and more than half (54.84%) were unable to comment. We found 93.58% of respondents agreed that yoga is useful for sustaining mental health. This question under attitude section provides a base, by which it can be stated that there may be a dearth of knowledge about the physical health benefits of yoga compared to the mental health benefits among the general population. The percentage of respondents who agreed that people of all faiths can practice yoga was extremely high (98.58%) opposite to the myth that yoga is a religious practice. Nevertheless, this data cannot be generalized, given 83.8% of respondents were Hindus. Extremely low levels of engagement by adherents of other religions suggest the need for additional research into the causes of low levels of participation. The vast majority of patients (98.80%) believed that yoga is not exclusive to sanyasis or sages; married folks may also practice yoga. This response demonstrated that the general populace has no doubts about the generality of yoga practice, since they believe that married and single individuals, sadhus, and commoners may all practice yoga, contrary to the misconception that only sages practicing severe austerities, celibates, and renunciates can do so.

In terms of practice, our study found that only 15.78% of cancer patients regularly practice yoga. This shows a huge gap between one’s attitude toward yoga and its practice. Similar trends for poor practice were also observed in a hospital-based cross-sectional survey on yoga among patients attending cardiology and neurology clinics in northern India.<sup>[14]</sup> Those who practiced under the guidance of yoga instructors were 22.19% of the participants.

This survey puts light on the numerous barriers cancer patients experience to initiating or continuing yoga practice. Our study findings revealed that 26% of participants, which is higher, accepted lack of time as the key barrier that prevents cancer patients

from utilizing Yoga. Other barriers were lack of interest (24.04%), lack of motivation (2.61%), lack of company (3.37%), not needed (14.25%), regular practice not applicable (15.77%), and insufficient facilities around them for yoga practice (13.92%). Previous literature also reported a few other reasons, including travel burden, treatment schedules, symptom burden, and stress from the diagnosis,<sup>[19]</sup> which might contribute to lower participation in yoga programs.

Based on the preferences of cancer patients, the study highlights the need to develop measures to make yoga more accessible. Health-care providers can play an essential role by discussing the benefits of yoga with their patients and aiding them in making decisions regarding its use as an alternative and complementary therapy. Myths and misconceptions about yoga, such as the belief that it is a religious practice or that it can only be performed by “saints,” must be dispelled through psychoeducation. Further research could be conducted to determine the obstacles to yoga practice. Making yoga more accessible, resolving any financial obstacles, utilizing motivational interviewing, or applying other methods for behavior change are all necessary for removing barriers. Integrating yoga into medical settings and educating patients about the physical and mental health advantages of yoga would be useful if all budgetary issues were resolved. Online or offline yoga awareness campaigns addressing myths and facts about yoga may serve to increase active involvement and make participants aware that yoga may assist in overcoming treatment-related side effects, boosting immunity, and enhancing cancer care.

The limitations of our study include the urban setting of the study; therefore, the higher number of patients practicing yoga belongs to the urban area. This study relied on self-reported data, which might account for social desirability and recall bias. The survey questionnaire in use was validated by the expert consensus and can be further improved by getting face and content validation of the same. Our survey was a single-center study having a majority of the population belonging to a similar geographical area; moreover, our sample population considered 83.8% of Hindus, thus, our findings cannot be extrapolated or generalized to a broader scale.

### Ethical approval

The study was approved by the Institutional Ethics Committee of AIIMS Rishikesh (AIIMS/IEC/21/557) dated 22/10/2021.

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The abstract was accepted at the annual ASCO Congress 2022 for abstract publication.

### Conflicts of interest

There are no conflicts of interest.

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