

# Complementary and Alternative Medicine in Cancer Patients and the Causes of Tendency to Use Such Treatments in Isfahan, Iran

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## Abstract

**Background and Aim:** The current study aimed to, first, investigate the frequency of cancer patients who receive complementary and alternative medicine (CAM), separated by the type of the disease, and second, to study their incentives and causes of use.

**Materials and Methods:** Following a cross-sectional design, cancer cases referred to referral centers of cancer in Isfahan province were studied. Data were collected using a researcher-developed checklist that included type of the disease, complementary medicine, and causes of a tendency to use CAM.

**Results:** A total of 256 patients were studied. One hundred and sixty-three patients (63.7%) had a history of receiving CAM. Sixty-five percent of the patients were satisfied with their CAM treatment. Patients with breast cancer had the highest prevalence of CAM use (72.2%), which was more than other types of cancers ( $P = 0.046$ ). There was no significant association between the frequency of CAM use and the patient characteristics such as age, level of education, marital status, and gender ( $P > 0.05$ ).

**Conclusion:** It is evident that the majority of patients with cancer are using CAM modulates and are satisfied with it. They want to try every possible way to cure. Physicians should consider the likelihood that their patient is taking CAM and adopt appropriate strategies to address the issue.

**Keywords:** Alternative therapy, cancer, complementary therapy

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## INTRODUCTION

Nowadays, cancer is a major medical challenge that its prevalence is soaring with population aging. According to the literature, there is no doubt that the global burden of cancer will continue its rise.<sup>[1,2]</sup>

In conventional medicine, several treatment options are available for cancer patients, including surgery, radiation therapy, and systemic therapies, such as chemotherapy, targeted therapy, hormone therapy, and immunotherapy, which can

be applied alone or in combination.<sup>[3]</sup> Cancer treatment has always coexisted with therapies offered outside of conventional centers and based on theories not found in biomedicine.<sup>[4]</sup>

The term “complementary and alternative medicine” (CAM) is used to describe a medical product or practice that is used together with complementary or instead of alternative standard medical care.<sup>[5]</sup> The majority of patients with cancer use CAM modalities concurrently with their cancer treatment.<sup>[6-8]</sup> Even

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today, there is an increasing tendency toward CAM, which can be attributed to various economic, sociological, and technological factors.<sup>[9-12]</sup>

Although CAM is routinely used by patients with diseases other than cancer, those suffering from cancer are more likely to use CAM at some point in their disease history.<sup>[4]</sup> Mostly, cancer patients usually ask for a faster recovery, strengthening the immune system, minimum side effects, and most appropriate disease management.<sup>[9,10]</sup> There is evidence indicating that the cultural and religious backgrounds affect the tendency toward using complementary medicine so that, in some communities, it is a part of patients' beliefs.<sup>[11,13]</sup> However, little scientific and reliable information is available about the efficacy of these treatments. According to studies, the strongest predictors of using complementary medicine are younger age, female gender, higher education level, and nonmetastatic diseases.<sup>[7,9]</sup> Providing an overview of some issues surrounding the expanding use of CAM in cancer patients will be of value to government policymakers, regulators, researchers and health-care practitioners. To the best of our knowledge, no similar study is conducted in Isfahan province, particularly regarding its sample size and comprehensiveness. Hence, the current study aimed to, first, investigate the frequency of cancer patients who receive complementary medicine, separated by the type of the disease and the received method, and second, to study their incentives and causes of use.

## MATERIALS AND METHODS

Following a cross-sectional design, this study was performed on patients with cancer referred to healthcare centers affiliated to the Isfahan University of Medical Sciences (IUMS) in 2019–2020. The study is approved by the Deputy for Research Affairs of the IUMS and Its Ethics Committee (code: IR.MUI.MED.REC.1398.465).

The sample size was calculated 256, using the estimation formula of the ratio of a qualitative trait, with a prevalence of 0.5 (because of the maximum of sample size) and a  $d$  (maximum error level) of 0.06 with 95% confidence level.

Participants were selected using the convenience sampling technique. Inclusion criteria were participants aged 15–70 years and willingness to participate in cancer-related research projects.

Data were collected using a researcher-developed checklist that comprised two sections. The first part consisted of demographic information, and the second part included clinical information such as type of cancer, duration of cancer, information about the treatments, and familiarity with complementary medicine and the causes of the tendency toward such treatments. The checklist also contained information on reasons for the tendency toward using complementary medicine and its type (alternative medicine, spiritual therapy, Iranian traditional medicine, biology, and energy therapy). Before initiating data collection, necessary coordination was made. Patients'

satisfaction and other information related to complementary treatment were also collected.

Following providing information about the objectives of the study, informed written consent was obtained from all participants. Then, they were asked to fill the checklist. The researcher attended cancer treatment centers such as Omid, Milad, and Mofid Clinics. Checklists that did not contain at least 20% of items were removed. Data analyses were administered by SPSS version 24 (IBM Company, New York City, America) using Chi-square, independent *t*-test, and Fisher's exact test. Mean and standard deviation (SD) were used to describe quantitative data, and frequency and percentage were used to describe qualitative data. Statistical significance was considered when  $P < 0.05$ .

## RESULTS

The current study aimed to investigate the frequency of using CAM in cancer patients referred to healthcare centers affiliated to the IUMS and the causes of their tendency toward using such treatments in 2020. A total of 256 patients were investigated, with a mean age of 49.9 years (SD = 13.9). Breast cancer and prostate cancer had the highest (28.1%) and the lowest (1.6%) frequencies, respectively. The frequency of colon, leukemia, and lung cancers was 10.2%, 9.8%, and 7.8%, respectively; while for the rest of cancers, it was 42.5%. Demographic characteristics of participants are provided in Table 1.

Investigating the frequency of received treatments revealed that the highest and the lowest frequencies were related to chemotherapy ( $n = 244$ ; 95.3%) and hormone therapy ( $n = 18$ ; 7%), respectively. Surgery ( $n = 142$ ; 55.5%) and radiotherapy ( $n = 76$ ; 29.7%) also had a high prevalence. In addition, 163 patients (63.7%) had a history of using CAM.

The frequency of causes of the tendency to complementary therapy is provided in Table 2. The highest frequency (31.9%) was related to "to try every possible way to treat," while the

**Table 1: Demographic characteristics of participants**

Variable	Frequency (%)
Gender	
Male	108 (42.2)
Female	148 (57.8)
Marriage status	
Single	25 (9.8)
Married	207 (80.9)
Widow	19 (7.3)
Divorced	5 (2)
Education level	
Illiterate	12 (4.7)
Primary	71 (27.7)
High school	53 (20.7)
Diploma or university student	59 (23)
M.Sc. or higher	36 (14.1)
Unknown	25 (9.8)

lowest frequency (5.5%) was related to “not being satisfied with the main medical treatment.” Meanwhile, 104 patients (40.6%) discontinued at least one of their treatments because of using complementary medicine.

Analyzing the frequency of familiarity with the therapy showed that the highest frequency (57.1%) was related to the “family,” followed by “friends” (26.9%). On the other hand, the lowest frequency (6.1%) was related to “other patients” as well as “the press and the media.” Frequency distribution of the time of using complementary medicine showed that 81 (49.7%) patients had a history of using complementary therapy along with their main medical treatment. On the other hand, 17 (10.4%) patients had a history of using complementary treatment after initiating their medical treatment and 69 (42.3%) before the treatment.

As shown in Table 3, most patients (65.7%) with a history of using complementary therapy were satisfied or strongly satisfied. The frequency distribution of the reason for satisfaction with complementary therapy is provided in Table 3.

Further analysis showed that about 9 (5.5%) patients experienced complications of complementary treatments. Further, 47 (28.8%) consulted their physician before initiating complementary treatment and 109 (66.9%) suggested it to other patients. According to the results of the *t*-test, there was no significant difference between those with a history of using complementary medicine and those who did not concerning the variable of age ( $P = 0.28$ ). In addition, the Chi-square test showed that the frequency of complementary therapy was not significantly different between males and females ( $P = 0.64$ ). According to the Chi-square test, the frequency of complementary therapy was not significantly different between patients with different marital status ( $P = 0.59$ ). This result was also seen in the Mann–Whitney U-test, in relation to the level of the education in both user and nonuser groups ( $P = 0.47$ ).

The Chi-square test showed a significant association between the frequency of complementary therapy and type of cancer. The most frequent use of complementary therapy (72.2%) was in patients with breast cancer, while the lowest frequency was for those with prostate cancer (25%) [Table 4].

## DISCUSSION

This study describes CAM use and experiences of cancer patients in both curative and palliative stages in Isfahan province (Iran). About two-thirds (63.7%) of the participants had used CAM after diagnosis of cancer. Because surveys assessing prevalence of CAM use vary in terms of definitions of CAM, comparing prevalence is somewhat complicated. Nevertheless, CAM use is similar to rates of reported in some other studies of patients with cancer.<sup>[13-15]</sup> Various systematic reviews concluded that the use of CAM has been increasing from 25% of patients with cancer in 1990, 49% in 2000–2009, to 51% in 2009–2018.<sup>[17-9]</sup> The application of CAM varied

**Table 2: Causes of the tendency to complementary therapy**

Causes of tendency to complementary therapy	Frequency (%)
Not satisfied with the main medical treatment	9 (5.5)
Insistence of family and friends	32 (19.6)
Difficulties and complicity of the main medical treatment	21 (12.9)
To try every possible way to treat	52 (31.9)
High costs of main medical treatment	20 (12.3)
Repeated ad exposure	23 (14.1)
Chemically enhanced primary treatment	33 (20.2)

**Table 3: Frequency distribution of satisfaction level and reason of satisfaction with complementary therapy**

Satisfaction level	Frequency (%)
Strongly satisfied	29 (17.8)
Satisfied	78 (47.9)
Average	33 (20.2)
Dissatisfied	6 (3.7)
Strongly dissatisfied	18 (11)
Satisfaction reason	
To alleviate symptoms	23 (14.1)
To reduce complications	25 (15.3)
To boost morale	70 (42.9)
To improve the disease	32 (19.6)

**Table 4: Frequency of complementary therapy, separated by type of cancer and education level**

Type of cancer	Total number	Using complementary medicine, n (%)	P
Colon	26	16 (61.5)	0.046
Prostate	4	1 (25)	
Lung	20	14 (70)	
Stomach	9	5 (55.6)	
Breast	72	52 (72.2)	
Leukemia	25	17 (68)	
Other	79	52 (68.5)	

greatly by country and the difference in the timeframes of CAM use.<sup>[7]</sup> Reported range was from 16.5%<sup>[16]</sup> to as high as 94.4%.<sup>[17]</sup> The variation can be partly explained by cultural and religious factors, socioeconomic status, regulations governing the use of CAM, accessibility of conventional and CAM therapies, and type of insurance refund.

The prevalence of CAM use among Iranian patients with cancer varied between 35% and 94.4%.<sup>[17-19]</sup> High prevalence rate among our patients might be explained by the traditional nature of our society and the Iranian cultural and religious beliefs and practices.

Further, in line with other studies,<sup>[14,20]</sup> patients in this study reported high satisfaction with CAM (65.7%) treatment modalities. They stated that the reason for their satisfaction

was the improvement of their morale. While many factors may contribute in perception of satisfaction, the high satisfaction rates among CAM users found in our study need to be considered by decision-makers in cancer care. Only 11% of cases using CAM were recommended by the physician; however, most patients (66.9) recommend this treatment to other patients. According to evidence, the autonomic use of CAM did not bring much benefit to the patient with cancer.<sup>[21]</sup> It is also clear that patient's conception of CAM therapies may be different from those of healthcare professionals and this can be a cause for concern.

In cancer patients, increased psychosocial stress and less promising prognosis are the main reasons for using this type of treatments.<sup>[9]</sup> In our study, the most frequent cause of tendency to use CAM was "to try every possible way to treat." Given that CAM is available outside of the conventional healthcare system, the use of these treatments can not only make a person feel empowered but also make them feel that they have tried every means possible.<sup>[7,22]</sup> About 20% of patients in our study are concerned about the chemical nature of their conventional treatment. In our society, in recent years, there has been a lot of publicity by some quacks about the chemical nature of medical drugs. This has fueled a false dichotomy between natural and chemical therapy.

In concordance to the literature,<sup>[9,15,23]</sup> majority of breast cancer patients in our study had used CAM. According to studies, it seemed that young women with higher education were more likely to use CAM.<sup>[7,9]</sup> However, in our study, there was no significant association between the frequency of CAM use and the patient characteristics such as age, level of education, marital status, and gender.

According to the findings, 40.6% of patients stopped at least one of their main medical treatments at some point in the treatment course due to the use of CAM. This is not consistent with other studies.<sup>[24,25]</sup> Present study took place in a clinical setting, which would suggest that attendance at least partially accepted conventional treatment, and therefore, this result is questionable. Patients may have difficulty in interpreting related question. Further studies can dispel this ambiguity.

According to the results, only 28.8% of the patients had consulted their doctor about CAM. As mentioned above, patients often consider CAM therapy as natural, absolutely safe, and highly effective. However, the limited available data on the effectiveness of various CAM therapies also highlight the necessity to be selective and careful (but open minded) about CAM therapies.<sup>[24]</sup> Physicians need to increase their knowledge in this area and ask their patients about their willingness to use CAM to guide them to safer and more efficient options.

One of our limitations was that our responders were carried out in cancer care clinics and hospitals. It would therefore be unlikely that these facilities would have representation of cancer patients who were using CAM as an alternative to conventional treatment.

## CONCLUSION

Irrespective of what physicians believe about CAM, it is evident that the majority of patients with cancer are using CAM modulates and are satisfied with it. This may be due to the unmet needs and demands of the participants regarding their health and well-being in conventional medicine. Most patients have not consulted their doctor about the use of CAM, so to encourage open communication, physicians should be aware of the most common CAM remedies and to be able to educate patients appropriately or at least be able to refer patients to credible resources.

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## Conflicts of interest

There are no conflicts of interest.

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