Original Article

HEALTH SCIENCES
MEDICINE

DOI: 10.32322/jhsm.1646342

J Health Sci Med. 2025;8(3):424-429

Investigation of traditional and complementary medicine use among oncology patients: a cross-sectional analysis

Salih Karatlı[1], Safiye Kübra Çetindağ Karatlı[2], Engin Eren Kavak[1]

[1]Department of Medical Oncology, Ankara Etlik City Hospital, Ankara, Turkiye

[2]Department of Family Medicine, Gülhane Training and Research Hospital, University of Health Sciences, Ankara, Turkiye

Cite this article as: Karatlı S, Çetindağ Karatlı SK, Kavak EE. Investigation of traditional and complementary medicine use among oncology patients: a cross-sectional analysis. *J Health Sci Med.* 2025;8(3):424-429.

Received: 24.02.2025 ◆ **Accepted**: 18.04.2025 ◆ **Published**: 30.05.2025

ABSTRACT

Aims: The aim of this study was to determine the prevalence of traditional and complementary medicine (T&CM), sociodemographic characteristics, methods used, attitudes towards this medicine and the main factors affecting its use in oncology patients.

Methods: This cross-sectional study was conducted between June 1 and July 31, 2024, involving patients receiving treatment at the Medical Oncology Service of Ankara Etlik City Hospital who agreed to participate in the study. Data collection was carried out through a questionnaire, and statistical analysis was performed using the Chi-square test, with a significance level set at $p<0.05$.

Results: While 40.8% of the 179 patients used T&CM before cancer diagnosis, this rate decreased to 28.4% afterwards. While there was a significant correlation between education level and T&CM use ($p=0.03$), no correlation was found between gender and age. Phytotherapy was the most frequently used method (66.7%). T&CM was mostly used for cure (66.7%), but only 3.9% of patients reported complete benefit. It was observed that 76.5% of the patients did not consult their physician or ask for information about T&CM. The most common reason for this is lack of patient knowledge. Only 11.7% of patients reported receiving adequate information about T&CM from their physicians.

Conclusion: It was found that patients did not have enough information about T&CM and doctors did not provide enough information on the subject. Accurate information for patients can be provided by increasing the awareness of doctors about T&CM methods. In this way, patient-doctor communication can be strengthened, patients' reservations can be reduced and a more open exchange of information can be provided.

Keywords: Traditional and complementary medicine, phytotherapy, oncology

INTRODUCTION

The World Health Organization (WHO) describes traditional and complementary medicine (T&CM) as a body of knowledge, skills, and practices that are used across different cultures for the prevention, diagnosis, and treatment of both physical and mental conditions. These practices are based on cultural beliefs, experiences, and theories, some of which may have scientific explanations while others do not. A number of alternative therapies are currently accepted in our country, including phytotherapy, leech treatment, larva application, cupping, mesotherapy, apitherapy, prolotherapy, acupuncture, hypnosis, ozone application, music therapy, homeopathy, reflexology, osteopathy and chiropractic.[1,2]

Cancer patients have to cope with both the symptoms of the disease itself and the negative effects of oncological treatments at the same time. The challenges encountered in this endeavour prompt patients to explore alternative therapeutic avenues beyond the conventional medical interventions. It is clear that interest in T&CM methods is increasing, both in our country and globally.[3,4] The primary objectives of employing T&CM methodologies are to mitigate the adverse effects associated with conventional oncological therapies, enhance appetite, provide effective pain management, and bolster the immune system.[5]

Despite the high prevalence of T&CM methods in cancer treatment, there is a notable deficit in communication between doctors and patients regarding the use of these methods. In a survey conducted by the 'American Society of Clinical Oncology (ASCO)' in 2014, it was shown that most of the oncologists surveyed did not have sufficient knowledge about T&CM methods and could not communicate effectively with their patients.[6] This may be attributed to the fact that T&CM methods are not adequately incorporated into oncology guidelines.

The aim of our study is to determine the prevalence of traditional and complementary medicine (T&CM), its

Corresponding Author: Salih Karatlı, karatlisalih@hotmail.com

This work is licensed under a Creative Commons Attribution 4.0 International License.

sociodemographic characteristics, methods of application, perceptions, and the main factors influencing its use. For this purpose, the responses of patients admitted to the Medical Oncology Service of Ankara Etlik City Hospital to a questionnaire based on a literature review on T&CM were evaluated. The objective of the study is to enhance physicians' awareness of T&CM, provide patients with comprehensive information, strengthen patient-physician communication, and prevent patients from giving incorrect or incomplete statements due to fear of physicians' reactions.

METHODS

This study utilized a descriptive and cross-sectional design to examine the use of T&CM methods, the reasons behind their use, influencing factors, patient satisfaction, and whether physicians were informed by patients hospitalized in the Medical Oncology Service of Ankara Etlik City Hospital. This study was approved by the Ankara Etlik City Hospital Scientific Researches Evaluation and Ethics Committee (Date: 22.05.2024, Decision No: AEŞH-BADEK-2024-485). All procedures in this study adhered to the principles outlined in the Helsinki Declaration, including its subsequent revisions or other equivalent ethical guidelines.

After obtaining the necessary ethical committee approval, the study included the first 200 patients admitted to the Medical Oncology Service for any reason between June 1, 2024, and July 31, 2024, who voluntarily agreed to participate in the survey. Patients were permitted to terminate their participation in the survey at any point. A total of 21 patients were excluded from the study for this reason. Patients were asked to provide verbal consent, and the questionnaires were conducted via face-to-face interviews.

The questionnaire comprised 10 questions pertaining to the sociodemographic characteristics and oncological status of the patients. Furthermore, the questionnaire comprised a total of 30 questions, including 20 items designed to ascertain whether the participants had applied T&CM to their patients, the methods they had employed if they had done so, whether they had informed their physicians, whether the physicians had informed the patients about T&CM, and patient satisfaction following the application of T&CM.

The data obtained in this study were analyzed using SPSS 30 (Statistical Package for the Social Sciences, version 30). The chi-square test was employed for statistical analysis. The level of statistical significance (p-value) was determined based on the applied tests, with a threshold of $p<0.05$ considered statistically significant.

RESULTS

The study analyzed 179 cancer patients, with a median age of 61 years (19-92) and a male predominance (58.6%). The most frequently observed comorbidities were hypertension (33.5%) and diabetes mellitus (30.0%). Lung (21.8%), gastric (15.1%), and pancreatic (11.2%) cancers were the most frequent types, with 63.2% of cases being metastatic. Nearly half (49.2%) were diagnosed within six months. The primary hospitalization reason was oncological treatment continuation (32.4%), followed by infections (17.9%) and nutritional support (16.2%). Other causes included electrolyte imbalance (11.7%), blood transfusion (5.6%), and interventional procedures (16.2%). Table 1 summarizes the clinical and demographic characteristics.

Table 1. Demographic and clinical characteristics of the patients (n=179)

Parameters	n (%)
Age median (range)	61.0 (19.0-92.0)
Sex n	
Female	74 (41.4)
Male	105 (58.6)
Education level	
Illiterate	33 (18.4)
Primary education	69 (38.6)
High school	45 (25.1)
University	32 (17.9)
Comorbidity	
Yes	99 (55.4)
No	80 (44.6)
Comorbidity	
Diabetes mellitus	55 (30.0)
Hypertension	60 (33.5)
Hypothyroidism	6 (3.3)
Chronic obstructive pulmonary disease-asthma	11 (6.1)
Neurological diseases	13 (7.2)
Others	10 (5.5)
Type of cancer	
Lung	39 (21.8)
Gastric	27 (15.1)
Pancreas	20 (11.2)
Jinecological (over-endometrium-cervix)	19 (10.6)
Colorectal	16 (8.9)
Breast	14 (7.8)
Head and neck	13 (7.3)
Sarcoma (soft tissue-bone)	9 (5.0)
Biliary tract	6 (3.4)
Bladder	4 (2.2)
Others	12 (6.7)
Stage	
Metastatic	113 (63.2)
Non-metastatic	66 (36.8)
Time after diagnosis (months)	
<6	88 (49.2)
6-12	42 (23.5)
>12	49 (27.3)
Cause of hospitalisation	
Electrolyte imbalance	21 (11.7)
Infection	32 (17.9)
Blood transfusion necessity	10 (5.6)
Oncological treatment continued	58 (32.4)
Nutrition and support	29 (16.2)
Other interventional procedures etc	29 (16.2)

As demonstrated in Table 2 and Figure, the majority of patients (69.3%) reported that their physicians had not provided them with any information regarding T&CM. Only 11.7% of patients indicated that they had been adequately informed. It was observed that 76.5% of patients did not consult their doctor about T&CM, nor did they request information from their doctor. The most common reason for this was a lack of information available to the patients. Despite this, 23.5% of patients actively sought a doctor's opinion on T&CM, yet physician recommendations remained limited, with only 4.8% endorsing its use, while 78,6% explicitly advised against it. Following a cancer diagnosis, 28.4% of patients used T&CM, a decrease from 40.8% who had used it before diagnosis (Table 2 and Figure).

Table 2. Patients' knowledge and utilisation of T&CM

Parameters	n (%)
Doctor's provision of information about T&CM	
Adequate information	21(11.7)
Inadequate information	34(19.0)
No information at all	124(69.3)
Have you asked for a doctor's opinion-recommendation about TCM?	
Yes	42(23.5)
No	137(76.5)
Doctor's response to patients inquiring about T&CM	
Recommended	2(4.8)
Did not recommend	33(78.6)
No comment	7(16.6)
Use of T&CM before diagnosis of cancer	
Yes	73(40.8)
No	106(59.2)
After diagnosis of cancer	
Yes	51(28.4)
No	128(71.6)
Would you consider using T&CM in the future?	
Yes	17(9.5)
No	125(69.8)
Undecided	37(20.7)

T&CM: Traditional and complementary medicine

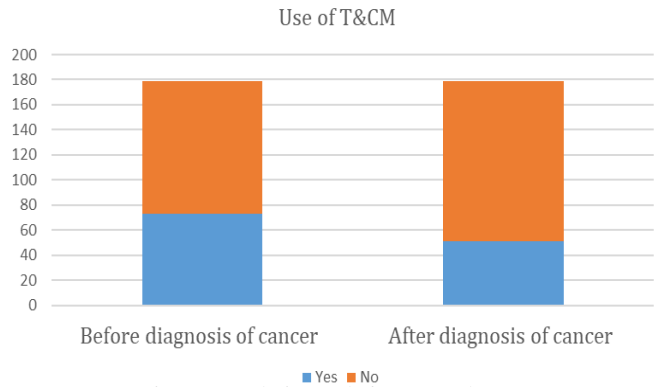

Figure 1. Rates of T&CM use before and after cancer diagnosis

T&CM: Traditional and complementary medicine

The majority of patients (52.9%) were encouraged by their families, while 19.6% were influenced by social media to use T&CM. The primary reasons for T&CM use were seeking a cure (54.9%), appetite improvement (23.6%), and pain control (21.5%). The most commonly used method was phytotherapy (66.7%), followed by cupping therapy (15.7%) and religious practices (13.7%). However, only 3.9% of patients reported experiencing complete benefit. Recommendations, methods, and outcomes of T&CM use after a cancer diagnosis are summarized in Table 3.

Table 3. Reasons, tools, results of using T&CM after diagnosis of cancer

Parameters	n (%)
Who recommended T&CM use after cancer diagnosis?	
Her/hisself	1 (2.0)
Family	27 (52.9)
Neighbor	7 (13.7)
Friend	6 (11.8)
Social media	10 (19.6)
Applied T&CM tools	
Phytotherapy (herbal treatment)	34 (66.7)
Shrine-prayer religious orientation	7 (13.7)
Hacamat (cupping)	8 (15.7)
Leech treatment	2 (3.9)
Satisfaction status of T&CM users (results)	
Benefited	2 (3.9)
Some benefit	17 (33.3)
No benefit, no harmed	24 (47.0)
Harmed	8 (15.8)
Reasons for using TCM n (%)	
For cure	28 (54.9)
For appetite	12 (23.6)
For pain control	11 (21.5)

T&CM: Traditional and complementary medicine

T&CM users and non-users showed no important differences in age (p=0.08), sex (p=0.75), cancer stage (p=0.94), or time since diagnosis (p=0.72). However, education level significantly differed (p=0.03), with T&CM users having a higher proportion of high school and university graduates. Lung (25.4%) and gastric (17.6%) cancers were more common among T&CM users, but cancer type was not statistically significant (p=0.25). Table 4 summarizes the characteristics associated with T&CM use after cancer diagnosis.

DISCUSSION

Patients undergoing treatment for cancer must contend with the clinical manifestations of the disease while simultaneously grappling with the adverse effects of oncological therapies. The challenges encountered in this endeavour often prompt patients to explore alternative avenues of treatment beyond the conventional medical paradigm. There is a growing interest in T&CM methodologies, not only in our country but also globally.[3,4]

Table 4. Analysis of T&CM use after cancer diagnosis

Characteristics	T&CM users n (%)	T&CM non-users n (%)	p
Age (years)			
<40	7 (13.7)	9 (7.0)	
40-60	23 (45.1)	44 (34.4)	0.08
>60	21 (41.2)	75 (58.6)	
Sex n (%)			
Female	22 (43.1)	52 (40.6)	0.75
Male	29 (56.9)	76 (59.4)	
Education level			
Illiterate	7 (13.7)	26 (20.3)	
Primary education	14 (27.5)	55 (43.0)	0.03*
High school	15 (29.4)	30 (23.4)	
University	15 (29.4)	17 (13.3)	
Stage			
Metastatic	32 (62.7)	81 (63.3)	0.94
Non-metastatic	19 (37.3)	47 (36.7)	
Type of cancer			
Lung	13 (25.4)	26 (20.3)	
Gastric	9 (17.6)	18 (14.1)	
Pancreas	3 (5.9)	17 (13.3)	
Jinecological	3 (5.9)	16 (12.6)	
Colorectal	3 (5.9)	13 (10.2)	
Breast	6 (11.8)	8 (6.2)	0.25
Head and neck	5 (9.8)	8 (6.2)	
Sarcoma (soft tissue-bone)	3 (5.9)	6 (4.7)	
Biliary tract	2 (3.9)	4 (3.1)	
Bladder	0 (0.0)	4 (3.1)	
Others	4 (7.9)	8 (6.2)	
Time after diagnosis (months)			
<6	23 (45.1)	65 (50.8)	
6-12	12 (23.5)	30 (23.4)	0.72
>12	16 (31.4)	33 (25.8)	
Use of TCM before diagnosis of cancer			
Yes	24 (47.1)	49 (38.3)	0.28
No	27 (52.9)	79 (61.7)	

T&CM: Traditional and complementary medicine, *p<0.05 indicates statistical significance

In the course of our investigation, we observed that 28.4% of the patients in question had resorted to the use of T&CM methods subsequent to receiving a diagnosis of cancer. In a study conducted by Keene et al.[3] the frequency of applying T&CM methods was found to be 51%, while in a study by Hill et al.[7] this rate was reported to be 54.5%. In a study reported by Ulusoy et al.[9] in Turkiye in 2021, T&CM's prevalance application was reported as 33.3%. In a study involving 75 patients with head and neck cancer in nine countries in Europe, the prevalence of T&CM application was reported as 22.7%.[8] A review of the literature reveals that the use of T&CM is more prevalent, particularly in Asian countries.[10] These findings indicate that the prevalence of T&CM use varies significantly across different geographic regions, influenced by cultural structures and healthcare systems. A review of the literature showed that the rate of using T&CM methods increased following a cancer diagnosis. In contrast, our study demonstrated that the rate was higher prior to a cancer diagnosis.[8] This may be attributed to the fact that patients did not perceive the anticipated benefits from T&CM applications prior to their utilisation.

Various factors such as age, gender, educational attainment, tumor type and stage, geographical location, and socioeconomic status influence the adoption rate of T&CM practices. Studies conducted by Keene, Hill, Mwaka, and Molassiotis have reported that the use of T&CM is most frequently observed among younger individuals, females, those with higher levels of education and income, and individuals with prior experience using T&CM methods.[3,5,7,12] While the existing literature suggests significant associations between these demographic and socioeconomic variables and T&CM use, several studies have also failed to confirm such relationships.[13-15] In our study, a statistically significant relationship was found only between educational level and the frequency of T&CM use, whereas no significant association was identified with gender or age. There may be several explanations for the greater tendency of highly educated individuals to utilize T&CM methods. As the level of education increases, individuals are more likely to access health-related information and possess the skills to critically evaluate it. This may enhance their inclination to explore alternative approaches alongside conventional treatments. Moreover, highly educated individuals tend to adopt a more proactive and autonomous role in healthcare decision-making, which may facilitate the use of self-directed practices such as T&CM.

Phytotherapy is the most prevalent T&CM method in the majority of studies referenced in the literature.[13,16-18] This study, phytotherapy was identified as the most frequently employed T&CM method. Visiting holy sites was reported to be the most commonly used T&CM method among cancer patients in a study conducted in Iran. The diverse socioeconomic, cultural and geographical characteristics of countries have resulted in the implementation of a multitude of T&CM methods.[19]

The T&CM methods are employed by patients for a variety of purposes, including the pursuit of a cure, the alleviation of symptoms, the stimulation of appetite, and the management of pain. As is the case in a large number of studies published in the literature, the most common reason for the use of T&CM in our study was to facilitate the healing process.[20,21]

The findings of our study indicate that 76.5% of patients did not seek consultation with their physician regarding T&CM and did not request information from their doctor. In our study, the most significant reason for patients failing to consult their doctor about T&CM was the absence of information and a lack of awareness about T&CM. The fact that the majority of our patients are primary school graduates or illiterate may be a factor that causes this situation. Nevertheless, numerous studies in the literature have demonstrated that the primary reason why patients who undergo T&CM do not provide information to their physicians is due to apprehension about the potential response from the medical practitioner.[5,22,23]

It is important to note that this may present a challenge in accurately determining the prevalence of T&CM use.

Another important factor for underreporting of T&CM is the lack of adequate knowledge of physicians on this subject. In addition, the current state of communication between patients and physicians is inadequate, which prevents the disclosure of T&CM to healthcare professionals.5,24 The proportion of patients who stated that they received adequate information about T&CM was very low (11.7%) in our study.

An analysis of the distribution of individuals who recommend T&CM methods reveals that friends, relatives, and neighbours represent a significant proportion.[8,12,25-27] The Internet and social media play an integral role in this distribution process.[14,28] Our study is similar to the studies in the literature.

The majority of studies in the literature indicate that patients derive benefit from T&CM methods.[16,29,30] In contrast to the majority of studies in the literature, our study revealed that only a small proportion of patients who applied T&CM methods fully benefited (3.9%). The discrepancy in outcomes may be attributed to the heterogeneous expectations of patients, their advanced disease stages, and the variations in the implementation of T&CM methods across different centres and frequencies.

Limitations

This study has several limitations. Firstly, its single-center and cross-sectional design restricts the generalizability of the findings. Since all participants were recruited from a single institution, regional sociocultural variations that might influence the use of T&CM could not be assessed. Secondly, the data were collected through self-reported questionnaires, which may be subject to recall bias, particularly in relation to patients' prior use of T&CM. In addition, some patients may have refrained from disclosing their use of T&CM due to concerns about their physicians' potential reactions, which could have led to underreporting. Moreover, the study relied solely on survey-based data and did not include objective clinical outcomes related to T&CM practices. These limitations underscore the need for future multi-center, prospective studies that incorporate both qualitative and quantitative methods to obtain a more comprehensive understanding of T&CM utilization among cancer patients.

CONCLUSION

It was observed that patients lacked sufficient knowledge about T&CM, physicians did not adequately inform them, and patients often did not disclose their use of T&CM to their doctors. Contrary to our findings, most studies in the literature suggest that patients tend not to inform their physicians about T&CM use due to concerns over potential negative reactions. This presents a challenge in accurately determining the true prevalence of T&CM use. Therefore, improving patient awareness and strengthening physician–patient communication is essential. To achieve this, integrating basic T&CM education into medical school curricula, providing in-service training for healthcare professionals, and developing evidence-based clinical guidelines are recommended. Physicians equipped with communication strategies that encourage openness may facilitate more accurate information sharing and support the safer integration of T&CM into oncological care.

ETHICAL DECLARATIONS

Ethics Committee Approval

The study was carried out with the permission of the Ankara Etlik City Hospital Scientific Researches Evaluation and Ethics Committee (Date: 22.05.2024, Decision No: AEŞH-BADEK-2024-485).

Informed Consent

All patients signed and free and informed consent form.

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

The authors declared that this study has received no financial support.

Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

REFERENCES

1. Ijaz N, Hunter J, Grant S, Templeman K. Protocol for a scoping review of traditional medicine research methods, methodologies, frameworks and strategies. *Front Med (Lausanne).* 2024;11:1409392. doi:10.3389/fmed.2024.1409392
2. Yurt NŞ, Türe E, Çubukçu M. Nivik otu zehirlenmesi: arum maculatum-bir olgu sunumu. *Ankara Med J.* 2019;19(4):796-799. doi:10.17098/amj.652024
3. Keene MR, Heslop IM, Sabesan SS, Glass BD. Complementary and alternative medicine use in cancer: a systematic review. *Complement Ther Clin Pract.* 2019;35:33-47. doi:10.1016/j.ctcp.2019.01.004
4. Kobya Bulut H, Bektaş M. Kemoterapi alan çocuklarda tamamlayıcı tedavi kullanımı. *Turk Klin J Biostat.* 2019;11(3):106-117. doi:10.5336/jtracom.2019-70968
5. Mwaka AD, Mangi SP, Okuku FM. Use of traditional and complementary medicines by cancer patients at a national cancer referral facility in a low-income country. *Eur J Cancer Care (Engl).* 2019;28(6):e13158. doi:10.1111/ecc.13158
6. Lee RT, Barbo A, Lopez G, et al. National survey of US oncologists' knowledge, attitudes, and practice patterns regarding herb and supplement use by patients with cancer. *J Clin Oncol.* 2014;32(36):4095-4101. doi:10.1200/JCO.2014.55.8676
7. Hill J, Mills C, Li Q, Smith JS. Prevalence of traditional, complementary, and alternative medicine use by cancer patients in low income and lower-middle income countries. *Glob Public Health.* 2019;14(3):418-430. doi:10.1080/17441692.2018.1534254
8. Molassiotis A, Ozden G, Platin N, et al. Complementary and alternative medicine use in patients with head and neck cancers in Europe. *Eur J Cancer Care (Engl).* 2006;15(1):19-24. doi:10.1111/j.1365-2354.2005.00615.x
9. Ulusoy ZB, Keskin A. Onkoloji hastalarının geleneksel ve tamamlayıcı tıp (GETAT) yöntemleri hakkındaki tutumları. *Ankara Med J.* 2021;21(3):374-385. doi:10.5505/amj.2021.68094
10. Choi S, Karki Kunwor S, Im H, et al. Traditional and complementary medicine use among cancer patients in asian countries: a systematic review and meta-analysis. *Cancers (Basel).* 2024;16(18):3130. doi:10.3390/cancers16183130

11. Berretta M, Della Pepa C, Tralongo P, et al. Use of complementary and alternative medicine (CAM) in cancer patients: an Italian multicenter survey. *Oncotarget*. 2017;8(15):24401-24414. doi:10.18632/oncotarget.14224
12. Molassiotis A, Fernández-Ortega P, Pud D, et al. Use of complementary and alternative medicine in cancer patients: a European survey. *Ann Oncol*. 2005;16(4):655-663. doi:10.1093/annonc/mdi110
13. Özkaya H, Karakaya Y, Aslaner H, et al. Investigation of the status of using traditional and complementary medicine practices in patients hospitalized in a palliative care center. *Konuralp Med J*. 2020;12(1):124-130.
14. Nejat N, Rahbarian A, Mehrabi F, Rafiei F. Complementary and alternative medicine application in cancer patients in Iran. *J Cancer Res Clin Oncol*. 2023;149(6):2271-2277. doi:10.1007/s00432-022-04317-2
15. Kanimozhi T, Hindu K, Maheshvari Y, et al. Herbal supplement usage among cancer patients: a questionnaire-based survey. *J Cancer Res Ther*. 2021;17(1):136-141. doi:10.4103/jcrt.JCRT_612_18
16. İnan H, Kuzu Ş, Yener H. Investigation of the use of traditional and complementary medicine in patients with head and neck cancer. *J Tradit Complement Med*. 2021;4(1):10-16. doi:10.5336/jtracom.2020-76209
17. Shakeel M, Newton JR, Bruce J, Ah-See KW. Use of complementary and alternative medicine by patients attending a head and neck oncology clinic. *J Laryngol Otol*. 2008;122(12):1360-1364. doi:10.1017/S0022215108001904
18. Farrag A, Alqudimat MR, Hassan FA. Family strategies for managing childhood cancer: using traditional and complementary medicine in Southern Egypt. *Pediatr Blood Cancer*. 2024;71(12):e31326. doi:10.1002/pbc.31326
19. Ghaedi F, Dehghan M, Salari M, Sheikhrabori A. Complementary and alternative medicines: Usage and its determinant factors among outpatients in Southeast of Iran. *J Evid Based Complement Altern Med*. 2017;22(2):210-215. doi:10.1177/2156587215621462
20. Price AJ, Ndom P, Atenguena E, Mambou Nouemssi JP, Ryder RW. Cancer care challenges in developing countries. *Cancer*. 2012;118(14):3627-3635. doi:10.1002/cncr.26681
21. Horneber M, Bueschel G, Dennert G, Less D, Ritter E, Zwahlen M. How many cancer patients use complementary and alternative medicine: a systematic review and meta-analysis. *Integr Cancer Ther*. 2012;11(3):187-203. doi:10.1177/1534735411423920
22. Tasaki K, Maskarinec G, Shumay DM, Tatsumura Y, Kakai H. Communication between physicians and cancer patients about complementary and alternative medicine: exploring patients' perspectives. *Psychooncology*. 2002;11(3):212-220. doi:10.1002/pon.552
23. Kelak JA, Cheah WL, Safii R. Patient's decision to disclose the use of traditional and complementary medicine to medical doctor: a descriptive phenomenology study. *Evid Based Complement Altern Med*. 2018;2018:4735234. doi:10.1155/2018/4735234
24. Davis EL, Oh B, Butow PN, Mullan BA, Clarke S. Cancer patient disclosure and patient-doctor communication of complementary and alternative medicine use: a systematic review. *Oncologist*. 2012;17(11):1475-1481. doi:10.1634/theoncologist.2012-0223
25. Amin M, Glynn F, Rowley S, et al. Complementary medicine use in patients with head and neck cancer in Ireland. *Eur Arch Otorhinolaryngol*. 2010;267(8):1291-1297. doi:10.1007/s00405-010-1223-1
26. Pandey L, Pasricha R, Joseph D, et al. Use of complementary and alternative medicine among patients with cancer in a sub-Himalayan state in India: an exploratory study. *J Ayurveda Integr Med*. 2021;12(1):126-130. doi:10.1016/j.jaim.2021.01.001
27. Christina J, Abigail W, De Bellis A, Harrington A. Women's lived experiences in the use of complementary and alternative medicine for breast cancer management: a phenomenological study. *J Holist Nurs*. 2024;42(2):89-98. doi:10.1177/08980101241277680
28. Sari NM, Devansyah S, Modjaningrat I, et al. Type of cancer and complementary and alternative medicine are determinant factors for the patient delay experienced by children with cancer: a study in West Java, Indonesia. *Pediatr Blood Cancer*. 2023;70(4):e30192. doi:10.1002/pbc.30192
29. Stöcker A, Mehnert-Theuerkauf A, Hinz A, Ernst J. Utilization of complementary and alternative medicine by women with breast cancer or gynecological cancer. *PLoS One*. 2023;18(5):e0285718. doi:10.1371/journal.pone.0285718
30. Cramer H, Lauche R, Klose P, Lange S, Langhorst J, Dobos GJ. Yoga for improving health-related quality of life, mental health and cancer-related symptoms in women diagnosed with breast cancer. *Cochrane Database Syst Rev*. 2017;1(1):CD010802. doi:10.1002/14651858.CD010802.pub2