

Complementary and Alternative Medicine application in cancer patients in Iran

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Research Article

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Abstract

Purpose

Nowadays, complementary and alternative medicine (CAM) is used by cancer patients all over the world. The aim of this study was to investigate the prevalence of CAM use in patients with cancer in Iran.

Methods

This descriptive-analytical study was conducted on 320 cancer patients in Arak. For gathering information, a researcher-made questionnaire was used. This questionnaire was consisted of two parts: demographic and clinical information; and patient's attitude toward using complementary and alternative medicine treatments and their effectiveness, as well as how much they used different kinds of these treatments. The data was analyzed using SPSS software version 16.

Results

Our findings showed that average age of participants was 55.11 ± 15.58 . Most of them had leukemia (25.9%) and underwent chemotherapy (55%), and 141 (44.3%) of individuals were using CAM. Majority of patients (73.2%) were using CAM to improve physical conditions, 61.4% were using it simultaneously with conventional medical treatments, and 25% to reduce pain. Participants have reported visiting holy places, yoga, prayer therapy, and using medicinal plants and special diets, respectively.

Conclusion

considering the high number of patients using CAM treatments, proper planning and implementation to educate professional members of health team, especially doctors and nurses about CAM treatments is essential. The most important CAM treatments to be educated are spiritual therapies, yoga, medicinal plants and diet therapy. Moreover, support and education about using these kinds of treatment, should be considered in the supportive care program for patients with cancer.

Background

Cancer is a disease that does not have just a single cause; it includes a group of diseases which have different causes, symptoms, treatments and prognoses. Despite significant improvements in diagnosis and understanding cancer including causes, prevention, early diagnosis, diagnostic tools, determinants of prognosis, treatment and management of symptoms; most people still believe that cancer is associated with pain and death (1). According to the latest statistics published by the World Health Organization (WHO), cancer as a non-communicable disease (NCD) with approximately 18 million 78 thousand new

cases, and 9 million deaths in 2018, after cardiovascular diseases, is the second cause of death by non-communicable diseases in the world (2–3).

Cancer occurs in all ages and in both genders; but it is more prevalent in men, in people over 65 years old, and in industrial societies. It is considered to be the third cause of death in Iran; and the three most common cancers in Iran are breast cancer, colorectal cancer and gastric cancer in both genders. Because of considerable prevalence, numerous complications, and high mortality at all ages, cancer is the focus of most health planning's and policies. In three recent decades, the overall incidence and mortality related to common cancers (lung, breast, colon and prostate cancers) have not changed; and in lots of cases, traditional medical treatments were not enough to meet the medical needs of patients (4). The treatments suggested to cancer patient are varied based on therapeutic goals of each particular cancer, the cancer's grade and its stage. Therapeutic goals include complete elimination of malignant disease (treatment), increasing survival, limiting growth of cancer cells (control), or reduction of related symptoms and promoting life's quality. The treatment will not begin until the cancer is definitely diagnosed, and the grade and stage of tumor is determined. Generally, there are numerous treatments for cancer including surgery, radiation therapy, chemotherapy, targeted treatment and heat therapy; which they may be used simultaneously or in separate times (1). Depending on the cancer stage and medical history of the patient, surgery, radiation therapy, chemotherapy or hormone therapy may be necessary for its treatment (5).

According to some studies, cancer survivors try to use different methods of complementary and alternative medicine (CAM). New studies indicate daily increase in the number of patients, particularly cancer patients to refer to different branches of CAM (6). Based on available estimations, until 2016 in European countries, these referrals have reported to be 44.3% of total patients (7). Patients with cancer who undergo traditional medical treatments, usually refer to CAM therapists to decrease the side effects of the disease and its treatments, or to interrupt the spread of cancer, or prevent metastasis. Sometimes they do that in a hope to be completely healed (8–10).

Complementary and alternative medicine (CAM) include treatment methods such as homeopathy, acupuncture, chiropractic, aromatherapy, exercise therapy, kinesiotherapy, massage therapy, music therapy, image therapy, herbal therapy, nutritional therapy, pressure therapy, energy therapy or meditation, nutritional supplements or other methods. These therapeutic methods which are not common treatments and used regionally or generally are so diverse (10–11). Application of CAM is also expanding in Australia, Europe and North America. Some reports indicate that more than half of Europe's population are interested to use some CAM methods in order to improve their health. In Iran, using these methods is rooted in the Iranian people's attachments to their beliefs and old traditions. It can also be due to later achievements (11). Prevalence of using CAM treatments is reported 33% in the UK, 46% in Australia, 34% in the USA, 66–75% in Belgium, 49% in France, 18% in Netherlands, and 20–30% in Germany (6).

According to conducted surveys, understanding the concept of CAM and its application is on the rise in cancer patients. Similarly, in Iran different methods of CAM are used by incurable patients and patients

with cancer, which using these methods is rooted in the culture and traditional Iranian treatment methods. It should be noted that using these methods without supervision and approval by the healthcare teams, can cause interference with conventional medical treatments. It can also result in complications such as skin and gastrointestinal complications, delay in wound healing, delay in diagnosis and treatment of the disease, and many other problems. Also, there is no official statistics about amount and used methods of CAM. Obviously by investigating the status of using various CAM methods in different regions of Iran, patients' attitude toward CAM, and application of CAM's different sub-branches by cancer patients; health policies and public and regional approaches, can be planned for proper and optimal use. Moreover, occurrence of CAM complications can be minimized and also its beneficial effects can be used at the same time. Besides, employees of health care systems by recognizing different methods of CAM used by patients, and providing necessary educations, can play an important role to gain therapeutic goals; and they can move toward improving cancer treatment outcomes. The aim of this study was to investigate the use of complementary and alternative medicine in cancer patients in Iran.

Methods

This research was a cross-sectional descriptive-analytical study, conducted on 320 patients in Arak (Iran). The entry criteria included over 18 years of age, cancer diagnosis with a specialist's approval, awareness of cancer diagnosis, being able to participate in study mentally and physically, being willing to participate in the study. Patient who suffered from acute complications of cancer and its treatments, in a way that they could not participate in the study, were excluded. The researchers explained the project for patients and assured them that their information will remain confidential, and their participation in this project has no effects on the treatment process. Then, by obtaining written consent from patients who were willing to participate the research, asked the questionnaire face to face, and recorded patients' responses.

The sample size was estimated to be 320 patient based on former studies, the average prevalence of CAM use for cancer treatment which was 30%, maximum estimate error of 5%, and 95% confidence level (11).

Data gathering was done using a questionnaire consisted two parts. First part included patient's personal information (age, gender, marital status, level of education and occupation) and clinical information (type of cancer, time of diagnosis and type of received treatment), and the second part was questions about patient's attitude toward using CAM treatments, CAM treatment effectiveness and the amount and types of used CAM methods. The question part itself, included three sections:

1) Determining patients' attitude regarding using CAM which has five items:

- I totally disagree (with the score of zero)
- I disagree (with the score of one)
- I have no idea (with the score of two)
- I agree (with the score of three)

- I totally agree (with score of four)

2) Determining patient's attitude toward the used CAM method effectiveness. It was evaluated using following answers: completely effective, somewhat effective, without any effects, and with negative effect.

3) Type of used method, duration, frequency of use, side effects and complications in each method was investigated.

The CAM methods were examined in five groups; Iranian medicine, Chinese medicine, spiritual therapies, biological therapies, and movement methods. In each of the group, related treatments were considered.

The questionnaire was evaluated by ten faculty members of Arak University of Medical Sciences, in order to be examined in terms of formal validity and content. The reliability of the questionnaire was evaluated using Test-retest method, and Cronbach's alpha was calculated 89.2.

Informed written consent to participate in this study was provided by all participants (or their parent or legal guardian) before the starting of data collection.

Results

Demographic characteristics

The results showed that the average age of the participants was 55.11 ± 15.58 . There were 161 (50.31%) men and 159 (49.69%) women. 258 (80.6%) were married, 214 (66.7%) were educated, 129(40.1%) were housewives, and 307(95%) were supported by one of the insurance companies, and 204(63.7%) were living in the town (Table 1).

Table 1
Socio-demographic characteristics of the participants (n = 320).

Variable		No. (%)
Gender	Male	161 (50.31)
	Female	159(49.69)
Marital status	Single	44(13.8)
	Married	258(80.6)
	Divorced	2(6)
	Widowed	16(5)
Education status	Illiterate	107(33.3)
	Primary school	86(26.8)
	Secondary school	45(14)
	Diploma	61(19)
	Graduated	22(6.9)
Working status	Worker	29(9)
	Employee	24(7.5)
	Business	42(13)
	Housekeeper	129(40.1)
	Unemployed	74(23)
	Others	24(7.5)
Income adequacy	Enough	17(6.5)
	Somewhat	112(42.7)
	Inadequate	133(50.8)
Insurance	health Service	61(19)
	Social Security	152(47.4)
	Other insurance	96(29.9)
	No insurance	12(3.7)
Residency	City	204(63.7)
	Village	116(63.3)

Clinical characteristics:

Average age of participants at the time of cancer diagnosis was 52.18 ± 16.65 , the average time of being diagnosed with cancer was 4.6 ± 0.08 years, and 208 patients had family history of cancer (72%). The majority had leukemia (25.9%) (Fig. 1) and were undergoing chemotherapy (55%) (Table 2).

Table 2
Clinical characteristics of the participants (n = 320)

Variable	Mean \pm SD	
Duration of diagnosis of Cancer (Mounth)	0.08 ± 4.6	
Treatment modality	No. (%)	
	Chemotherapy	157(55.1)
	Surgery	22(6.9)
	Radiotherapy	31(9.7)
	Combined	90(28.3)
Nonhereditary cancers	Yes	81(28)
	NO	208(72)

Using CAM

majority of the participants were agreed to use CAM methods (178 people, 55.8%), and 141 patients (44.3%) were using CAM. The average time for using CAM was 11.47 ± 4.02 months. Most subjects were using CAM simultaneously with conventional medical treatments (81 people, 61.4%) and their motivation was to improve their physical conditions (73.2%) such as pain (25%).

Figure 2 shows other problems which caused patients to use CAM. Most participants reported using CAM to be partly effective in improving the irritating complications (66 patients, 48.2%) and improving the overall health status (73 patients, 53.7%). Also 5.9% of the participants reported a reduction in side effects using CAM method.

Majority of participants (38.6%) received information about CAM treatments from their families (Fig. 3).

Figure 4 shows different CAM methods used by cancer patients. The most used methods by subjects were visiting holy places, yoga, and then prayer and, using medicinal plants, and using special diets, respectively; but regarding the number of times the method was used, listening or reading the Qur'an had the highest rate.

Discussion

Findings of this study showed that 44.3% of participants were using CAM methods, which is consistent with statistics in European countries (44.7%) (12).

The rate of CAM use has been reported 29% in the UK, 13% in the United States, 57% in Turkey, 79% in Ethiopia, 62.5% in Malaysia, 64% in Australia, 71.2% in Canada, 74.8% in Korea, 90% in Saudi Arabia and 93.4% in China (13–18).

Differences in the results of these studies about using CAM can be due to socio-cultural diversity, differences in access to these treatments, and their costs. On the other hand, variation in designing studies and the type of CAM treatment can be effective too (19).

The average age for using CAM in this study was 52.18 ± 16.65 years which is consistent with other studies in Asia in which it is reported to be 30 to 59 years (20–22). In this study, the most people who used CAM were patients with leukemia and then breast cancer. This can be due to high incidence of leukemia in this region of Iran (23). Similarly, Wode et al. in 2019 and Al-Naggar et al. in 2013 have reported that patients with breast cancer use CAM more than others (24). The reasons to use CAM methods in this study were improving physical condition, fighting the disease, management and reducing complications related to cancer and its treatment, improving mood and increasing strength respectively. These findings are similar to the results of other studies on this issue (25–26). Comparably, using CAM methods simultaneously with conventional medical treatments is reported in other studies. Al-Naggar et al. have reported that 85% of cancer patients were using conventional medical treatments and CAM at the same time. Using CAM and conventional medical treatments simultaneously can result in production of potentially dangerous compounds which in turn, may cause various side effects (23). This is a serious problem for health care systems and patients, and should seriously be considered. In order to proper management of this issue, careful planning and implementation is necessary. In this study, there was no report on the toxicity of CAM. But doctors and other health care teams should be advised to be careful when treating cancer. Because patients may also use CAM that interferes with the type of treatment.

Participants of our study mostly used CAM to reduce pain, anxiety, constipation, anorexia, insomnia, fatigue and shortness of breath. The results of a study by Al-Naggar is consistent with our finding (23). While in a study by Shirinabadi et al. in Iran, patients mostly used CAM to reduce anxiety and depression, and then to reduce pain (27). In this study incidence of CAM side effects in this was 5.9%, in other studies however, this item was reported to be 5.6–18.6% (7, 23). In our study the source of information about CAM were family, friends and relatives. In contrast, physicians and nurses are reported to be the least information source about using CAM. Our findings partly confirm the results of studies in Korea (28) and Sweden (23) which indicated that family and relatives are the main source of information about CAM. However, other studies reported media like the internet, television, radio and newspapers as the major source of informing about CAM (20–30).

In this study, the most used methods by participants were visiting holy places, yoga, and then prayer therapy, using medicinal plants and using special diets, respectively; but regarding the number of times which the method was used, listening or reading the Qur'an had the highest rate.

In another study in Iran, the most common used CAM in cancer patients was reported as praying (86.1%). The most used medicinal plants were the subgroups of mint and garlic with (41.7%). In Ethiopia, 72.1% of cancer patients used medicinal plants more than any other CAM method (7). In Malaysia using Sea Cucumber (22%) and Homeopathy were the most used methods (10.5%) (23). In Sweden, using vitamins and minerals and relaxation methods were the most common (26). In Lebanon the most used CAM methods were dietary supplements and then medicinal plants (20).

Conclusions

Considering high prevalence of cancer, and cancer patients who use CAM treatments, proper planning to educate doctors and nurses, as well as other professional members of health care team about CAM treatments is a vital approach. Moreover, it will be useful for cancer patients to educate and support them in terms of using CAM methods. This will prevent unwanted side effects, as well as interference with conventional medical treatments.

Abbreviations

CAM: Complementary and Alternative Medicine

Declarations

Ethics approval and consent to participate

The study was approved by the research ethical committee of faculty of medicine, Arak University of Medical Sciences. Our study conforms to provisions of the Declaration of Helsinki. Informed written consent to participate in this study was provided by all participants (or their parent or legal guardian) before the starting of data collection

Consent for publication

Informed written consent for publication was obtained from all participants (or their parent or legal guardian) before the starting this study.

Availability of data and material

All data generated or analyzed during this study are included within the article.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

NN: Conceptualization, Methodology **AR:** Data Curation, Software **FM:** Conceptualization, Methodology, Writing- Reviewing and Editing, Supervision. **FR:** Formal analysis

All authors read and approved the final manuscript for submission.

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References

1. Cancer Incidence and Mortality Worldwide: IARC Cancer Base No. 11 [Internet]. Lyon, France: International Agency for Research on Cancer; 2018. Available from: <http://globocan.iarc.fr>,
2. World Health Organization. 2014. Fact Sheet on the top 10 causes of death (Major causes of death). Available from: <http://www.who.int/mediacentre/factsheets/fs310/en/index2.html>. Accessed May 2018.
3. Nejat N, Mehrabi F. The Occupational Hazards of Exposure to Antineoplastic and Chemotherapy Drugs in Nurses. A systematic review. *IJCA*. 2019; 1 (3):20-28.
4. Hekmatpou D, Mehrabi F. Exploratory study on diagnosed cancers and quality of life of hospitalized patients. *J Nurs Midwifery Sci* 2018;5:109-15.
5. Mehrabi F, Hekmatpou D, Abolfathi A. The Relationship between Demographic Characteristics and Quality of Life in Patients with Cancer. *hrjbaq*. 2019; 5(1):8-15.
6. Swisher EM, Cohn DE, Goff BA, Parham J, Herzog TJ, Rader JS, Mutch DG. Use of complementary and alternative medicine among women with gynecologic cancers. *Gynecologic oncology*. 2002 Mar 31;84(3):363-7.
7. Asfaw Erk D. Complementary and Alternative Medicine Use and Its Association with Quality of Life among Cancer Patients Receiving Chemotherapy in Ethiopia: A Cross-Sectional Study. *Evidence-Based Complementary and Alternative Medicine*. 2016; Article ID 2809875, 8 pages.
8. Molassiotis A, Fernandez-Ortega P, Pud D, Ozden G, Scott JA, Panteli V, Margulies A, Browall M, Magri M, Selvekerova S, Madsen E. Use of complementary and alternative medicine in cancer patients: a

- European survey. *Annals of oncology*. 2005 Apr 1;16(4):655-63.
9. Boon H, Stewart M, Kennard MA, Gray R, Sawka C, Brown JB, McWilliam C, Gavin A, Baron RA, Aaron D, Haines-Kamka T. Use of complementary/alternative medicine by breast cancer survivors in Ontario: prevalence and perceptions. *Journal of Clinical Oncology*. 2000 Jul 1;18(13):2515-21.
 10. Ceylan S, Hamzaoglu O, K m rc  S, Beyan C, Yalcin A. Survey of the use of complementary and alternative medicine among Turkish cancer patients. *Complementary Therapies in Medicine*. 2002 Jun 30;10(2):94-9.
 11. Sajadian A.S, Kaviani A, Montazeri A, Hajimahmoudi M, Ebrahimi M, Samiei F, et al . Complementary medicine use among Iranian cancer patients. *Payesh*. 2005; 4 (3) :197-205.
 12. A. Molassiotis, J. A. Scott, N. Kearney et al., "Complementary and alternative medicine use in breast cancer patients in Europe," *Supportive Care in Cancer*, vol. 14, no. 3, pp. 260–267, 2006.
 13. Adams M, Paul Jewell A. The use of complementary and alternative medicine by cancer patients. *Int Semin Surg Oncol*. 2007; 4: 10.
 14. Ozturk C, Karayagiz G. Exploration of the use of complementary and alternative medicine among Turkish children. *J Clin Nurs*. 2008;17(19):2558–64.
 15. H. Greenlee, M. L. Kwan, I. J. Ergas et al., "Complementary and alternative therapy use before and after breast cancer diagnosis: the Pathways Study," *Breast Cancer Research and Treatment* 2009; 117(3): 653–665.
 16. S. M.Ock, J. Y. Choi, Y. S. Cha et al., "The use of complementary and alternative medicine in a general population in South Korea: results from a national survey in 2006," *Journal of Korean Medical Science* 2009;24(1):1-6.
 17. Downer, S.M., M.M. Cody and P. McCluskey. Pursuit and practice of complementary therapies by cancer patients receiving conventional treatment. *British Medical Journal*, 309: 86-9.
 18. Kiwanuka. Complementary and Alternative Medicine use: Influence of Patients' Satisfaction with Medical Treatment among Breast Cancer Patients at Uganda Cancer Institute. *Advances in Bioscience and Clinical Medicine* 2018; 6(1):24-29.
 19. Shaharudin, S.H., Sulaiman S, Emran N A. The use of complementary and alternative medicine among Malay breast cancer survivors. *Alternative Therapies In Health And Medicine*. 2011; 17: 50-6.
 20. Naja F, Mousa D, Alameddine M, Shoaib H, Itani L, Mourad Y. Prevalence and correlates of complementary and alternative medicine use among diabetic patients in Beirut, Lebanon: A cross-sectional study. *BMC Complement Altern Med*. 2014;14:185.
 21. Harris, P, I.G. Finlay, A. Cook, K.J. Thomas and K. Hood, 2003. Complementary and alternative medicine use by patients with cancer in Wales: a cross sectional survey. *Complementary therapies in Medicine*. 2003; 11: 249-53.
 22. Rakovitch, E., J.P. Pignol and C. Chartier, Complementary and alternative medicine use is associated with an increased perception of breast cancer risk and death. *Breast Cancer Res. Treat.*, 2005;90: 139-48.

23. Poorcheraghi, H., Hekmatpou, D., Mehrabi, M. The Quality of Life of Patients With Different Leukemia Types. *Journal of Client-Centered Nursing Care*. 2019; 5(2), pp. 97-104.
24. Al-Naggar RA et al. Complementary/alternative Medicine Use among Cancer Patients in Malaysia. *World Journal of Medical Sciences* 2013; 8 (2): 157-164.
25. Risberg T, Vickers A, Bremnes RM, Wist EA, Kaasa S, Cassileth BR. Does use of alternative medicine predict survival from cancer? *Eur J Cancer*. 2003;39(3)372–7.
26. Wode K, Henriksson R, Sharp L, Stoltenberg A, Nordberg JH. Cancer patients' use of complementary and alternative medicine in Sweden: a crosssectional study. *BMC Complementary and Alternative Medicine* 2019;19:62.
27. Shirinabadi Farahani A et al. The Perspective of Cancer Patients on the Use of Complementary Medicine. *Int J Cancer Manag*. 2019; 12(2):e89916.
28. E. Tautz, F. Momm, A. Hasenburg, and C. Guethlin, "Use of complementary and alternative medicine in breast cancer patients and their experiences: a cross-sectional study," *European Journal of Cancer* 2012; (48)17: 3133–3139.
29. E. Kang, E. J. Yang, S.-M. Kim et al., "Complementary and alternative medicine use and assessment of quality of life in Korean breast cancer patients: a descriptive study," *Supportive Care in Cancer*. 2012;(20)3:461-473.
30. Wanchai A, Armer JM, Stewart BR. Complementary and alternative medicine use among women with breast cancer: a systematic review. *Clin J Oncol Nurs*. 2010;14(4):E45–55.

Figures

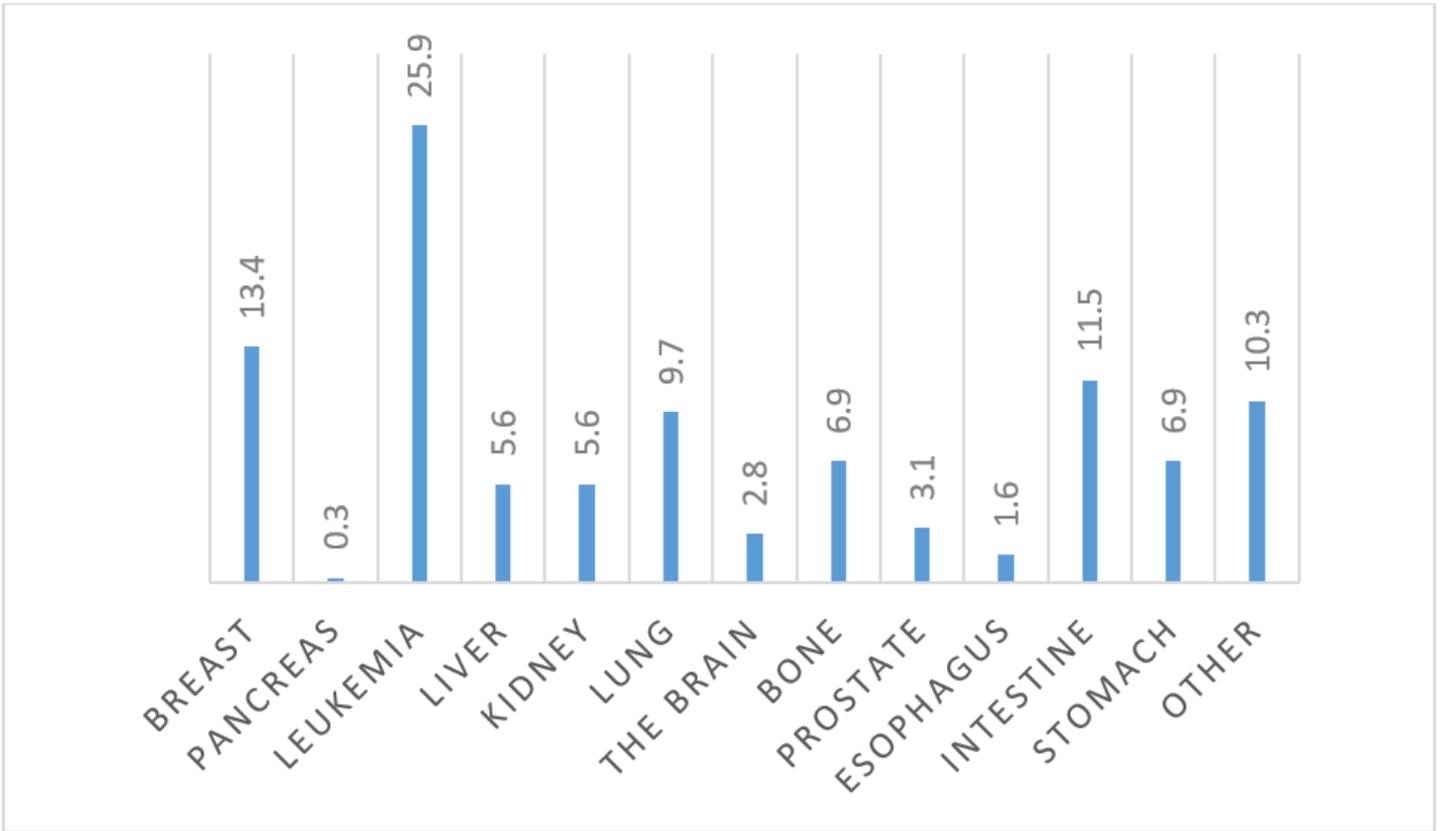


Figure 1

Type of cancers among the participants (n=320)

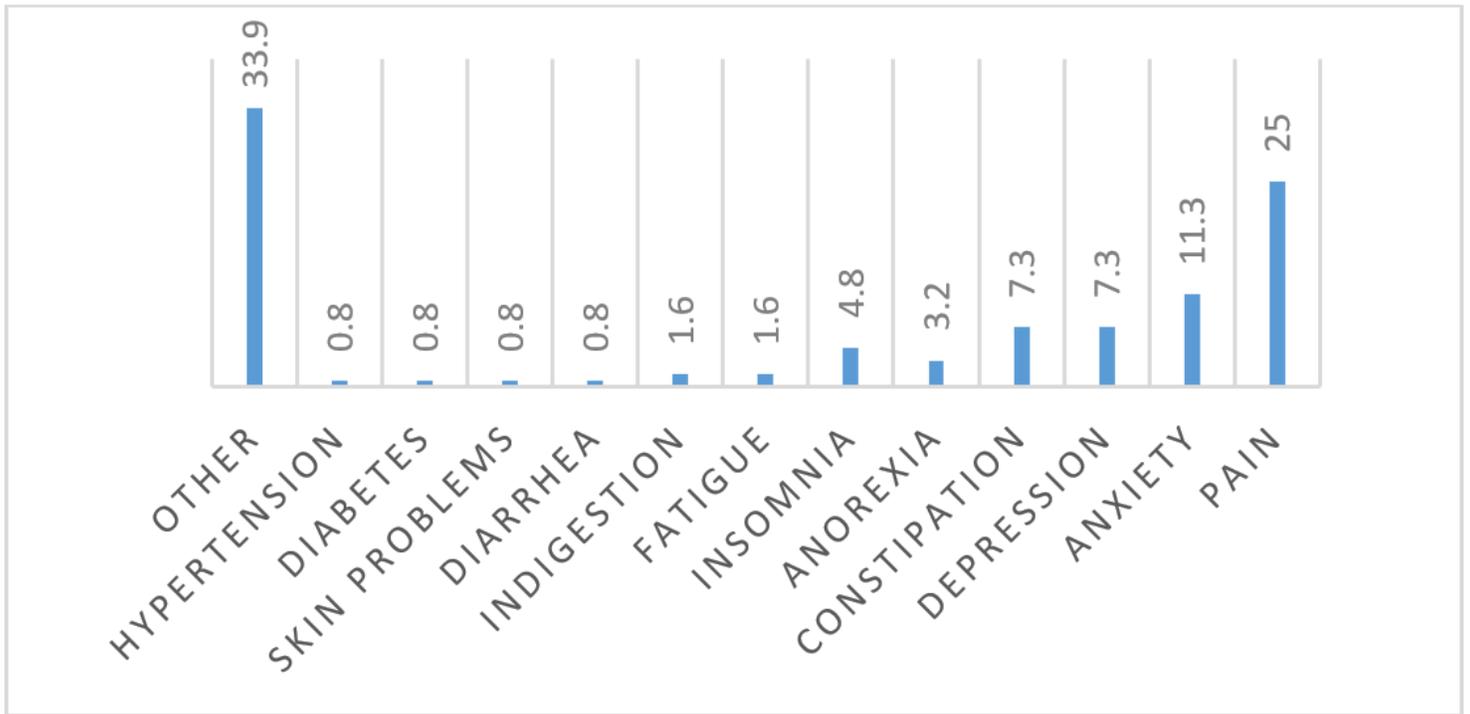


Figure 2

Reasons for use of CAM

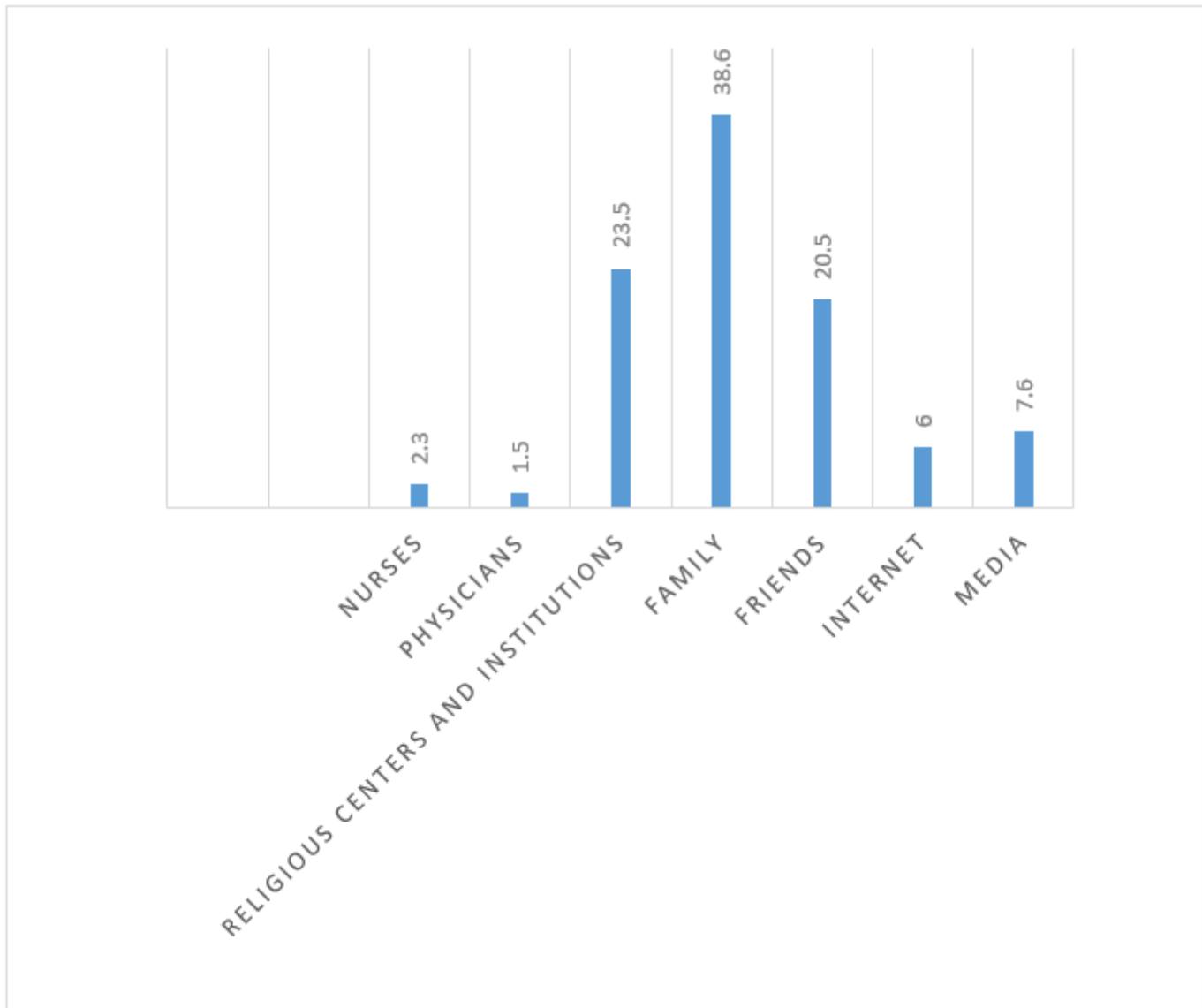


Figure 3

Source of information about CAM (n=320)

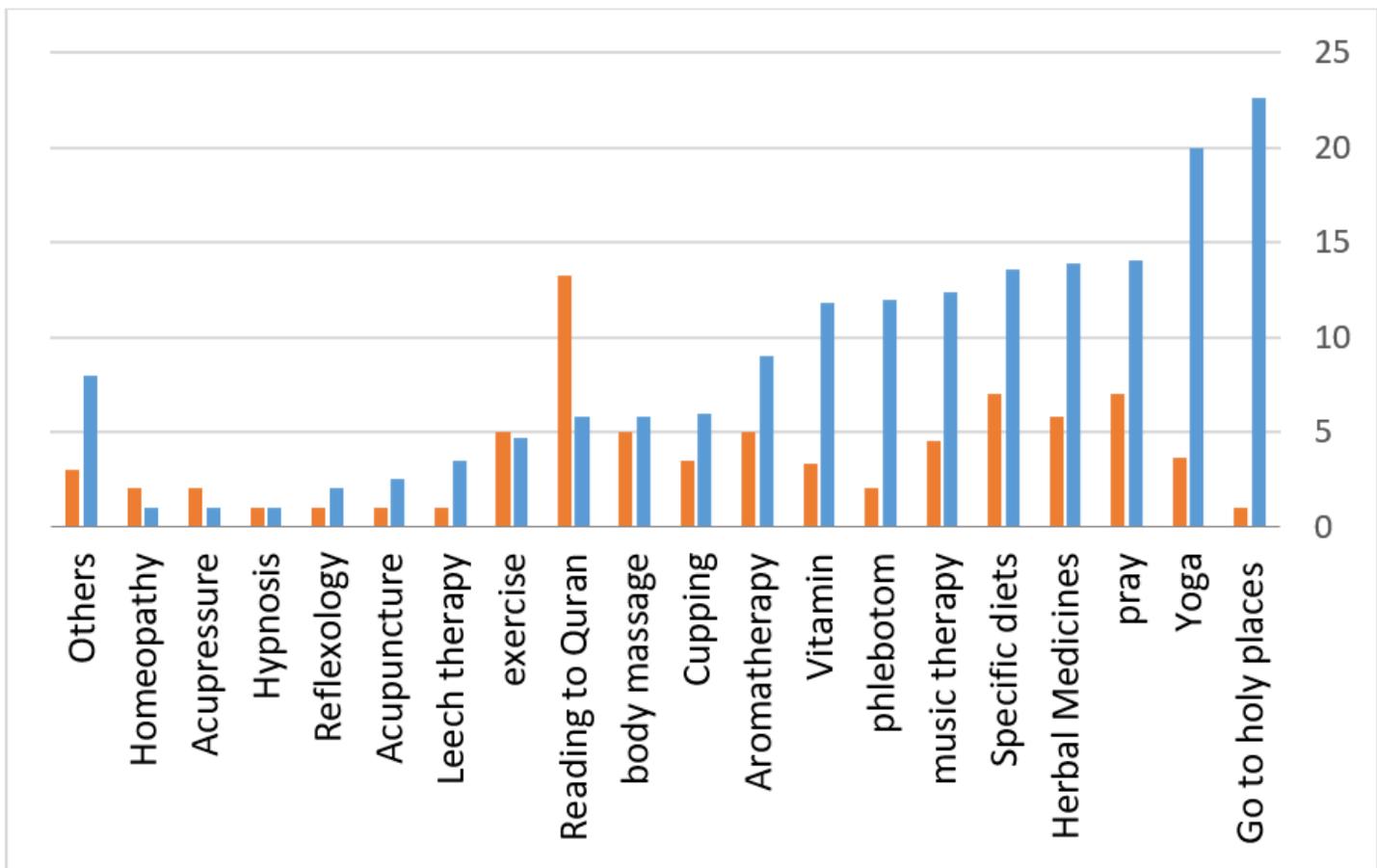


Figure 4

Type and frequency of use of CAM (n=320)