

Complementary and Integrative Medicine Use in Individuals Seeking Conventional Medical Oncology Care in Chile: Prevalence and Patient Characteristics

Gabriel Lopez, MD¹; Claudio Alejandro Salas, MD²; Fernando Cadiz, MD²; Carolina Barriga, MD²; Pilar Gonzalez, MD²; Sandra Acevedo, RN²; Patricia Raimilla, RN²; Pia Pincheira, EU²; Aung Naing, MD¹; and Marta Quiroga, MD²


PURPOSE Complementary and integrative medicine (CIM) use during cancer care has increased in Western medical settings. Little is known about interest in and use of CIM approaches by oncology patients in Chile and South America.

PATIENTS AND METHODS Patients presenting for conventional outpatient or inpatient medical oncology care at the Clinica Alemana in Santiago, Chile, from March to June 2017 were asked to complete a survey about their interest in and use of CIM approaches. Goals included determining the prevalence of CIM use and exploring associations between CIM use and patient characteristics. Statistical analyses included a two-tailed *t* test for continuous variables, Fischer's exact test for categorical variables, and logistic regression for association between CIM use and other variables.

RESULTS Of 432 patients surveyed, 66.9% were diagnosed with breast cancer, 84.8% were women, the majority of patients (58.1%) were between age 40 and 60 years, and 51.5% (*n* = 221) reported CIM use. No association was found between CIM use and the sociodemographic variables of sex, age, education, or income. In all, 44.6% of patients with breast cancer reported CIM use compared with 64.8% of patients with other cancer types (*P* > .001). Most commonly reported types of CIM used included herbals (49.1%), vitamins and minerals (40.8%), and prayer or meditation (40.4%). Most frequent reasons for CIM use were to "do everything possible" (72%) and to "improve my immune function" (67.8%). Most patients (43.4%) reported starting CIM use at the time of cancer diagnosis, with only 55.4% sharing information regarding CIM use with their medical team.

CONCLUSION The majority of patients surveyed reported engaging in CIM use, with just over half the users communicating with their oncology team about their CIM use. Increased awareness of regional differences in CIM use may help increase communication regarding this subject and contribute to improved outcomes.

J Global Oncol. © 2019 by American Society of Clinical Oncology

Creative Commons Attribution Non-Commercial No Derivatives 4.0 License 

INTRODUCTION

Individuals pursuing cancer care through health care systems across the world are presented with a variety of conventional and nonconventional approaches to care. According to the National Center for Complementary and Integrative Health in the United States, complementary therapies are those used together with, rather than in place of, conventional medicine. There has been increased interest in the use of complementary health approaches as part of oncology care, with greatest use by women with breast cancer.^{1,2} Integrative oncology refers to an evidence-informed approach to the use of complementary therapies throughout oncology care.³ Although some complementary integrative medicine (CIM) therapies may help improve symptoms and quality of life, others may adversely affect treatment outcomes through drug-herb interactions, organ toxicity, interference

with treatment efficacy, and/or cancer promotion. Increased knowledge about regional differences in CIM use may help guide the development of programs directed at patient and provider education regarding these therapeutic interventions.

Efforts are ongoing at an international level to learn more about patterns of CIM use as part of health care and to explore opportunities to enhance patient and provider knowledge about CIM. Survey methodology has been helpful in identifying regional patterns of CIM interest and use.⁴ According to the WHO Traditional Medicine Strategy 2014-2023, although traditional and complementary medicine practices vary widely from country to country, practices such as acupuncture are recognized by 80% of countries surveyed globally; however, only 30% of surveyed countries are providing high-level education in these areas.⁵ In a patient survey at a comprehensive cancer center in

ASSOCIATED CONTENT

Data Supplement

Author affiliations and support information (if applicable) appear at the end of this article.

Accepted on January 22, 2019 and published at ascopubs.org/journal/jgo on May 16, 2019; DOI <https://doi.org/10.1200/JGO.18.00190>

CONTEXT

Key Objective

We asked how to increase the safety and quality of care for patients with cancer by using complementary and integrative medicine (CIM).

Knowledge Generated

With a global interest in the safe delivery of traditional and complementary medicine, survey methodology provides valuable insights regarding regional differences. Our patient survey study provides insight into CIM use in Chile during cancer care. Although more than half of those surveyed reported CIM use and discussed its use with their oncology care team, decisions regarding its use were based on recommendations from outside of the medical field, by friends and family, the internet, or an alternative medicine physician.

Relevance

The risk of seeking information about CIM use outside the oncology care team includes the potential for harm. Such knowledge can help with development of strategies to better inform patients and providers regarding the evidence-informed, safe use of CIM during and after cancer care.

the United States, up to 69% of patients with cancer acknowledged use of CIM approaches.⁶ The prevalence of CIM use is higher in survivors of breast cancer compared with survivors of other types of cancer, ranging from 48% to 80%.⁷ In a review of CIM use in women with gynecologic malignancies, the frequency of CIM use ranged from 40.3% to 94.7%, and the most common approaches were use of herbal medicines and vitamins and minerals.⁸

Of additional concern is that an estimated 38% to 75% of patients with cancer who use CIM approaches are not informing their health care team about their CIM use.^{9,10} Richardson et al⁶ reported that although 88% of patients were combining use of CIM with conventional care, only 62% were discussing their interest and/or use of these approaches with their physician. In a survey of hematology-oncology patients receiving outpatient care in Germany, only 25% of patients reported discussing the topic of complementary medicine with their health care provider.¹¹ Because providers have deficits in communication and lack high-quality education regarding the role of CIM in cancer care, they may not be adequately prepared to address patient questions regarding CIM use.

Increased understanding of regional patterns of CIM use and provider knowledge about CIM may have particular significance in providing high-quality cancer care with an emphasis on safety. Our survey aims to increase knowledge in the area of CIM use during cancer care at the regional level in Chile by exploring prevalence, patient demographics, and factors related to CIM use.

PATIENTS AND METHODS

Survey participants were oncology patients recruited from either the inpatient units or the outpatient center of the Clinica Alemana in Santiago, Chile, who were receiving cancer-directed therapies that could include but were not limited to chemotherapy, immunotherapy, surgery,

radiation, and/or hormonal therapy. Participants could also include individuals presenting for interim visits as part of surveillance and/or symptom management. Participants were recruited by members of the oncology research teams or nursing staff from March 2017 through July 2017. Some eligible participants were identified through a database for patients with breast cancer. Patients were contacted via phone call by nursing staff, at which time they consented to participation in the study. A copy of the survey was sent to the patients using a Redcap platform, and anonymity and confidentiality of responses was ensured. For other patients, a paper copy of the survey was provided; responses were then entered into Redcap manually. Eligibility criteria included age older than 18 years, any disease stage, being in active treatment (curative or palliative) or surveillance, ability to read Spanish, and the ability to understand the purpose of the study. Exclusion criteria included patients who did not complete the survey, declined study participation, or had cognitive, visual, or other impairments that would not allow them to complete the survey. Informed consent was obtained before study entry; the study was approved by the institutional ethics committee. Participants were encouraged to respond to the survey items to the best of their ability; patients could decline to answer any or all survey items.

Definition of CIM

For this survey, the definition of CIM included use of herbal products, vitamins and minerals, homeopathy, acupuncture, special diets, chiropractic or massage, hypnosis, prayer or meditation, and yoga.

Survey

The CIM use survey was adapted and translated into Spanish (Data Supplement) from an English language survey developed by Naing et al.⁴ This survey has also been translated into Turkish.¹² In addition to questions regarding

CIM use, the survey includes questions regarding demographics and other patient characteristics (eg, age, sex, marital status, employment status, cancer type). Question 10, which asks about income, has been modified from the original English-language survey, with income converted to local currency (660 Chilean pesos, or approximately 1 US dollar).

Statistical Analysis

The study was descriptive, observational, and prospective. To estimate the prevalence of CIM use with 95% CIs, with a precision of 5% assuming a normal distribution and a prevalence of 50%, the sample size needed was at least 384. Statistical analyses included two-tailed *t* test for continuous variables, Fischer's exact test for categorical variables, and logistic regression for association between CIM use and other variables. Data were stored in a Redcap database at the Clinica Alemana. Analyses were performed using STATA 14.0 (STATA, College Station, TX).

RESULTS

Patient Characteristics

Of 432 survey participants, 356 (84.8%) were women, and the majority of those surveyed were age 41 to 60 years (58.1%). The majority reported having received a post-graduate education (60.8%) and were working full-time (31.3%; [Table 1](#)). The most common cancer diagnoses of survey participants included breast (66.9%), GI (12.3%), and thoracic/head and neck (9%). Most participants (53.1%) had their cancer diagnosed within 2 years of completing the survey.

With regard to quality of life (scale from 0 to 5, with 5 being the best possible), the majority reported quality of life scores of 4 or 5 (83.9%; [Table 1](#)). At the time of their cancer diagnosis, most reported feelings of uncertainty or fear about the future (48.4%) and were confident that they would be able to overcome their cancer (37.6%). In the interim after their cancer diagnosis, the majority reported ongoing hope with regard to overcoming their cancer (52.1%) and remained uncertain or fearful (21.2%).

CIM Use

Of those surveyed, 221 (51.5%) reported use of CIM at some point, past or present ([Table 2](#)). The majority (72.1%) had used CIM therapies for 2 years or less before the survey ([Table 2](#)). There was no significant association between CIM use and patient demographics (sex, age group, education level, or income; data not shown). When comparing the group of patients with breast cancer to those with other cancers, CIM use was significantly lower in the breast cancer group (44.6% v 64.8%; $P < .001$). With regard to CIM use and self-reported quality of life, there was a similar distribution of responses favoring good to excellent quality of life among those who did or did not use CIM.

Most common resources that patients used to learn about CIM included a friend or family member (68.8%), the

TABLE 1. Demographic and Clinical Characteristics of Patients Who Completed Surveys

Characteristic	Total No. of Patients	No.	%
Total	432		
Age, years	431		
≤ 60		306	71
> 60		125	29
Sex	420		
Female		356	84.8
Male		64	15.2
Highest level of education completed	422		
High school or less		93	22
College		72	17.1
Professional degree		257	60.9
Employment	399		
Full-time		125	31.3
Part-time		27	6.8
Medical leave/disability		33	8.3
Self-employed		111	28.3
Retired		64	16
Unemployed		39	9.8
Cancer type	432		
Breast		289	66.9
GI		53	12.3
Thoracic/head and neck		39	9
Gynecologic		28	6.5
Lymphoma		13	3
Genitourinary		11	2.5
Neurologic/brain		6	1.4
Sarcoma		3	0.7
Melanoma		2	0.5
Other		32	7.4
Timing of cancer diagnosis	423		
2016-2017		225	53.2
2010-2015		186	44
Before 2010		12	2.8
Quality-of-life score*	424		
5		171	40.3
4		185	43.6
≤ 3		68	16

NOTE. Multiple responses are possible for each participant (check all that apply).

*Possible scores range from 0 (poor) to 5 (excellent).

internet (35.8%), and an alternative medicine physician (27.4%; [Table 2](#)). The majority (72.7%) consulted someone before using a CIM approach. The most frequently

TABLE 2. Patient Characteristics Regarding Use of CIM

Characteristic	No.	%
Current or past use of CIM therapies	429	
Yes	221	51.5
No	208	48.5
Type of CIM use*		
Herbals	107	49.1
Vitamins and minerals	89	40.8
Prayer or meditation	88	40.4
Special diet	84	38.5
Homeopathy	50	22.9
Yoga	36	16.5
Acupuncture	33	15.1
Chiropractic	22	10.1
Hypnosis	6	2.8
Other	100	45.9
How did you learn about CIM*		
Friend or family member	148	68.8
Internet	77	35.8
Alternative medicine physician	59	27.4
Health food store	40	18.6
TV or radio	33	15.3
Magazine or newspaper	31	14.4
Support group or other patients	18	8.4
Primary care physician	14	6.5
Oncologist	12	5.6
Seminar, workshop, or hospital program	7	3.3
Church	2	0.9
Length of time using CIM, years		
< 2	145	72.1
2 to 5	35	14.4
> 5	21	10.4
Reasons for CIM use*		
To do everything possible to help myself	154	72
To improve my immune system	145	67.8
Reduce adverse effects	70	32.7
Recommended by family or friend	70	32.7
Cure my cancer	40	18.7
Live longer	30	14
Recommended by physician	29	13.6
To control pain	26	12.1
Disclosure to physician		
Yes	118	55.4
No	59	27.7
To some extent	36	16.9

Abbreviation: CIM, complementary and integrative medicine.

*Multiple responses possible for each participant (check all that apply).

used CIM approaches included herbals or botanicals (49.1%), vitamins and minerals (40.8%), and prayer or meditation (40.4%; [Table 2](#)). With regard to reasons for using CIM, the majority of responses included “to do everything I can to help myself” (72%), “to improve my immune system” (67.8%), “to reduce side-effects of conventional care” (32.7%), and “it was recommended by a family member or friend” (32.7%; [Table 2](#)).

Regarding timing of CIM use, the majority reported starting to use a CIM approach immediately after their cancer diagnosis (43.4%) or shortly after their diagnosis (34%). Only 25.9% had used a CIM approach before their cancer diagnosis.

The majority of patients surveyed perceived a benefit from their use of a CIM approach (60.1%). With regard to adverse effects, the majority (91.4%) were not aware of having had an adverse effect resulting from the use of CIM. With regard to CIM use during cancer treatment, the majority (55%) had told their doctor about their CIM use ([Table 2](#)). Of those surveyed, the majority (68.3%) would consider having a consultation with a doctor specializing in CIM to discuss the use of herbs, supplements, and other therapies.

DISCUSSION

Our survey provides insight into how, why, and when patients begin to include CIM approaches as part of their cancer care. The majority of patients surveyed began their use of CIM approaches during their cancer care from the time of their diagnosis. Although the majority discuss their CIM use with the oncology care team, guidance regarding their CIM use is based on recommendations from friends, family, the internet, and other health care providers with unknown knowledge or expertise. The risk of seeking information about CIM use outside the oncology care team includes potential for harm, such as the possibility of herb-drug interactions, interference with treatment efficacy, and/or direct organ toxicity from herbals and supplements.

The majority of those surveyed expressed an openness to meeting with a physician with expertise in the area of CIM. A recent Clinical Oncology Society of Australia position statement regarding the use of complementary medicine highlighted the importance of health professionals having open conversations with their patients who have cancer regarding complementary medicine use, discussing the concept of evidence-based medicine, and recognizing their own knowledge limitations regarding its use.¹³ There is a need to make such expert, evidence-informed guidance available to patients seeking CIM during their cancer care. According to a recent National Cancer Institute monograph, the evidence-informed use of CIM during cancer care has come under the term “integrative oncology”.³ There are organizations dedicated to the development of integrative oncology guidelines regarding evidence-informed CIM use during and after cancer care, with one recent set of

recommendations for patients with breast cancer endorsed by the American Society of Clinical Oncology.¹⁴ With the increased availability of CIM approaches in cancer centers and community settings, there is a need for greater education of physicians and other health care providers regarding patient motivations for CIM use and their interest in accessing specialized consultation in this area.¹⁵ To help meet this need in the United States, an increasing number of integrative oncology programs are being developed in large academic cancer centers.² Integrative oncology programs are also on the rise in the international community,^{16,17} and surveys regarding patient interest in CIM use play a critical role in developing programs to best meet the unique needs of local populations.

Limitations of this study include that the survey was distributed to patients at a private academic hospital, which may not be representative of the population of patients receiving care at public or community hospitals. By using the ability to read Spanish as part of the eligibility criteria, our survey result would underrepresent this population of patients. Although the survey was not limited to any one

cancer diagnosis, the majority of respondents surveyed were women who had a diagnosis of breast cancer. Greater representation of patients with breast cancer in the survey population may be attributed in part to the presence of additional staff being available in the breast center for survey distribution and collection, as well as greater emphasis on engaging patients with breast cancer in efforts related to supportive care and cancer prevention. Because of the greater representation of patients with breast cancer versus other cancer diagnoses in our survey results, the results may not adequately represent interest in CIM use by men and patients with other cancer diagnoses. We therefore included in our results a comparison of CIM use in patients with breast cancer versus other diagnoses.

As integrative oncology programs develop on a global level to address the CIM needs of patients seeking oncology care in diverse communities, a critical first step is to understand patient attitudes and beliefs regarding CIM use. Future directions include exploring provider attitude and knowledge with regard to the evidence-informed use of CIM approaches during oncology care.

AFFILIATIONS

¹The University of Texas MD Anderson Cancer Center, Houston, TX

²Clinica Alemana, Santiago, Chile

CORRESPONDING AUTHOR

Marta Quiroga, MD, Palliative Care Service, Oncology Department, Clinica Alemana, Santiago, Chile; e-mail: mquiroga@alemana.cl.

AUTHOR CONTRIBUTIONS

Conception and design: Gabriel Lopez, Carolina Barriga, Aung Naing, Marta Quiroga

Administrative support: Pilar Gonzalez

Collection and assembly of data: Gabriel Lopez, Fernando Cadiz, Carolina Barriga, Pilar Gonzalez, Sandra Acevedo, Patricia Raimilla, Pia Pincheira, Marta Quiroga

Data analysis and interpretation: Gabriel Lopez, Claudio Alejandro Salas, Carolina Barriga, Aung Naing, Marta Quiroga

Manuscript writing: All authors

Final approval of manuscript: All authors

Accountable for all aspects of the work: All authors

AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

The following represents disclosure information provided by authors of this manuscript. All relationships are considered compensated. Relationships are self-held unless noted. I = Immediate Family Member, Inst = My Institution. Relationships may not relate to the subject matter of this manuscript. For more information about ASCO's conflict of interest policy, please refer to www.asco.org/rwc or ascopubs.org/jgo/site/misc/authors.html.

Claudio Alejandro Salas

Travel, Accommodations, Expenses: MSD Oncology

Aung Naing

Consulting or Advisory Role: Novartis, CytomX Therapeutics

Research Funding: National Cancer Institute, EMD Serono, MedImmune, Atterocor, Amplimmune, ARMO Biosciences, Karyopharm Therapeutics, Incyte, Novartis, Regeneron, Merck, Bristol-Myers Squibb, Pfizer, CytomX Therapeutics, Neon Therapeutics, Calithera Biosciences, TopAlliance Biosciences, Healios, Immune Cell Therapy (I)

Travel, Accommodations, Expenses: ARMO Biosciences

No other potential conflicts of interest were reported.

REFERENCES

1. Lim E, Vardy JL, Oh B, et al: Mixed method study to investigate models of Australian integrative oncology. *J Altern Complement Med* 23:980-988, 2017
2. Lopez G, McQuade J, Cohen L, et al: Integrative oncology physician consultations at a comprehensive cancer center: Analysis of demographic, clinical and patient reported outcomes. *J Cancer* 8:395-402, 2017
3. Witt CM, Balneaves LG, Cardoso MJ, et al: A comprehensive definition for integrative oncology. *J Natl Cancer Inst Monogr* 2017(52), 2017
4. Naing A, Stephen SK, Frenkel M, et al: Prevalence of complementary medicine use in a phase 1 clinical trials program: The MD Anderson Cancer Center experience. *Cancer* 117:5142-5150, 2011
5. World Health Organization (WHO): WHO Traditional Medicine Strategy: 2014-2013. 2013. <http://apps.who.int/medicinedocs/documents/s21201en/s21201en.pdf>
6. Richardson MA, Sanders T, Palmer JL, et al: Complementary/alternative medicine use in a comprehensive cancer center and the implications for oncology. *J Clin Oncol* 18:2505-2514, 2000
7. Greenlee H, Balneaves LG, Carlson LE, et al: Clinical practice guidelines on the use of integrative therapies as supportive care in patients treated for breast cancer. *J Natl Cancer Inst Monogr* 2014:346-358, 2014

8. Akpunar D, Bebis H, Yavan T: Use of complementary and alternative medicine in patients with gynecologic cancer: A systematic review. *Asian Pac J Cancer Prev* 16:7847-7852, 2015
 9. Navo MA, Phan J, Vaughan C, et al: An assessment of the utilization of complementary and alternative medication in women with gynecologic or breast malignancies. *J Clin Oncol* 22:671-677, 2004
 10. Richardson MA, Mâsse LC, Nanny K, et al: Discrepant views of oncologists and cancer patients on complementary/alternative medicine. *Support Care Cancer* 12:797-804, 2004
 11. König J, Geschwill K, Lang A, et al: Use of complementary and alternative medicine in cancer patients: A prospective questionnaire-based study in an oncological outpatient clinic. *Oncol Res Treat* 39:260-265, 2016
 12. Yalcin S, Hurmuz P, McQuinn L, et al: Prevalence of complementary medicine use in patients with cancer: A Turkish comprehensive cancer center experience. *J Glob Oncol* 4:1-6, 2018
 13. Braun L, Harris J, Katris P, et al: Clinical Oncology Society of Australia position statement on the use of complementary and alternative medicine by cancer patients. *Asia-Pacific J Clin Oncol* 10:289-296, 2014.
 14. Lyman GH, Greenlee H, Bohlke K, et al: Integrative therapies during and after breast cancer treatment: ASCO Endorsement of the SIO Clinical Practice Guideline. *J Clin Oncol* 36:2647-2655, 2018
 15. Yun H, Sun L, Mao JJ: Growth of integrative medicine at leading cancer centers between 2009 and 2016: A systematic analysis of NCI-designated comprehensive cancer center websites. *J Natl Cancer Inst Monogr* 2017(52), 2017
 16. Shalom-Sharabi I, Frenkel M, Caspi O, et al: Integrative oncology in supportive care center in Israel. *Integr Cancer Ther* 17:697-706, 2018
 17. Ben-Arye E, Schiff E, Zollman C, et al: Integrating complementary medicine in supportive cancer care models across four continents. *Med Oncol* 30:511, 2013
-