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Use of Complementary and Alternative Medicine Therapies to Control Symptoms in Women Living With Lung Cancer

KEY WORDS

Complementary therapies
Lung cancer
Symptom management
Women

Complementary and alternative medicine (CAM) use by cancer patients, especially women, is increasing. However, CAM use among patients with lung cancer, who have been reported to have the highest symptom burden, is poorly documented. This study describes types and frequencies of specific CAM therapies used by women with lung cancer to manage symptoms, and examines differences in demographic and clinical characteristics between CAM users and non-CAM users. Participants included 189 women with non–small cell lung cancer and ≥ 1 of 8 symptoms. Six CAM therapies, used to control symptoms, were assessed, including herbs, tea, acupuncture, massage, meditation, and prayer. Forty-four percent (84 women) used CAM therapies, including prayer (34.9%), meditation (11.6%), tea (11.6%), herbs (9.0%), massage (6.9%), and acupuncture (2.6%). Complementary and alternative medicine use was greatest for difficulty breathing and pain (54.8% each), with prayer the most commonly used CAM for all symptoms. Significant differences ($P < .05$) were found for age ($t = 2.24$), symptom frequency ($t = -3.02$), and geographic location ($\chi^2 = 7.51$). Women who were younger, experienced more symptoms, and lived on the West Coast or South (vs Northeast) were more likely to use CAM. We found that CAM use is variable by symptom and may be an indicator of symptom burden. Our results provide important initial data regarding CAM use for managing symptoms by women with lung cancer.

W omen with lung cancer have long been an "invisible" group within the US population, although it has been the leading cause of cancer-related death for over 20 years and continues to rise. The American Cancer Society estimates that over 71,000 women in the United States will die from lung cancer in 2006[1]—more than for breast and colon cancer combined. Lung cancer has significant untoward effects on the quality of life (QOL) of individuals and their loved ones who are affected by it.[1] Because of the symptom burden associated with lung cancer, symptom management is one of the most important issues in patients with lung cancer.

Common lung cancer–related symptoms include fatigue, cough, pain, difficulty breathing/breathlessness, loss of appetite, trouble sleeping, weight loss, nausea, difficulty concentrating, anxiety, and depression.[2,3] Individuals living with lung cancer experience a disproportionate number of symptoms compared with other types of cancer, presumably because their disease is more advanced at diagnosis.[2–6] Degner and Sloan[3] found that patients with lung cancer had higher levels of symptom distress than those with other cancers. In fact, the single measure of symptom distress has consistently been a significant predictor of survival in lung cancer patients across studies.[3] A better understanding of how patients with lung cancer manage their symptoms is needed.

Complementary and alternative medicine (CAM) use has become increasingly popular throughout the Western world as patients seek remedies to supplement conventional medical treatment.[7–18] Complementary and alternative medicine is defined as comprising 2 elements: complementary therapies, which are used in conjunction with conventional medicine to promote symptom management; and alternative medicine, which replaces conventional, evidence-based medical care and is usually practiced by nontraditional practitioners.[19]

Estimates of CAM use in the Western world vary greatly.[7,10,14–17,20–22] Eisenberg et al[10] reported an increase in CAM use from 33.8% to 42.1% in the United States between 1990 and 1997 (excluding self-prayer), representing some 72 million US adults.[14] The 2002 National Health Interview Survey (>31,000 US adults) found that the number of respondents who reported using some form of CAM in the past 12 months rose from 36% to 62% when prayer specifically for health reasons and megavitamin use were included in the definition of CAM.[7] Seventy-five percent of those surveyed reported having ever used CAM.

An increasing number of patients with cancer appear to be using CAM. Ernst and Cassileth[11] reviewed 26 surveys from 13 countries and found that the average CAM use across studies of adult patients with cancer was 31.4% (range 7–64%). Cancer patients report using CAM to take more responsibility for their own care, to improve physiological health and psychosocial well-being, and to control symptoms,[18,23–28] CAM use has been shown to improve patients' QOL and satisfaction with care.[8]

Researchers have studied CAM use for symptoms in women with cancer,[4–6,18,23–26,28–34] but none have examined CAM use in women with lung cancer. This is surprising given the symptom severity experienced by patients with lung cancer. To date, there are no studies addressing CAM use for symptom management in women living with lung cancer.

The purposes of this report are: (1) to describe the types and frequencies of specific CAM therapies (eg, herbs, teas, acupuncture, massage, meditation, and prayer) used to manage symptoms; (2) to describe the specific types of CAM therapies that are used for specific symptoms (eg, pain, difficulty breathing, fatigue, loss of appetite, weight loss, cough, sleep disturbance, and difficulty concentrating); and (3) to determine whether differences exist between women who use CAM therapies for symptom management and those not using CAM by demographic, clinical, and health status characteristics.

This article describes CAM use for symptom management in women with lung cancer using data from a prospective 6-month study focused on QOL and symptom management.[35]

We addressed the following research questions:

1. What are the significant differences in demographic (age, marital status, race, educational level, employment status, living arrangements, geographic location and religion), health status (depressed mood, comorbidities, smoking status), and clinical (time since diagnosis, treatment status, and presence of metastases) characteristics between CAM users and those who are not using CAM to control symptoms?
2. Which CAM therapies were used most often overall to manage symptoms?
3. Which CAM therapies were used, and how frequently were they used, to control individual symptoms included in this analysis?
4. What demographic, health status, or clinical variables best characterize use of CAM for symptom management?

■ Literature Review

Over the last 15 years, both attitudes toward, and research into CAM therapy changed. The number of Medline-indexed published articles on the topic of CAM in both the general population and in patients with cancer has almost doubled each decade since the 1960s.[20] Complementary and alternative medicine use among patients with lung cancer, however, is poorly documented. Fewer than 100 Medline-indexed articles that examined CAM use in patients with lung cancer were published between 1960 and March 2005. Most studies were focused on alternative treatments for cancer with a dearth of published research investigating CAM use for symptom management, especially in patients with lung cancer.

Types and Frequency of CAM Use

Complementary and alternative medicine use in the general population and among persons with cancer is similar. The common CAM therapies used by Americans in 2002 included prayer specifically for one's own health (prayer for self = 43%, prayer by others = 24.4%, prayer group

participation = 9.6%), natural products (vitamins, herbal medicines, teas) (18.9%), deep breathing exercises (11.6%), meditation (7.6%), chiropractic (7.5%), yoga (5.1%), massage (5.0%), diet-based therapies (3.5%), and acupuncture (1.1%).[7] Richardson et al[36] evaluated the prevalence and predictors of CAM use in 453 comprehensive cancer center outpatients. They found that 83.3% had used at least 1 CAM therapy. Spiritual practices (80.5%) were most often used, followed by vitamins and herbs (62.6%) and movement/physical therapies (59.2%). Von Gruenigen et al[34] found that 56.3% of gynecology and gynecological oncology patients reported CAM use, including nutritional supplements (20%), prayer as medical therapy (17%), exercise as medical therapy (12%), megavitamins (10%), and green tea (10%). Research demonstrates that most CAM users employ a combination of CAM therapies.[7,14,37]

Complementary and alternative medicine use patterns are changing. Tindle et al[14] reported that although the use of many CAM therapies (excluding self-prayer) remained stable from 1997 to 2002, use of the practitioner-based therapies (eg, chiropractic, acupuncture, massage) decreased while herbal therapies increased the most dramatically. Despite frequent reports in the medical and lay literature about the potential dangers of herb-drug interactions, herbs are now almost entirely used to self-treat (95% in 2002).

CAM Use and Symptom Management in Patients With Cancer

The use of CAM therapies has been studied in a variety of conditions and populations, including use in cancer patients,[8,11,38] with estimates of use ranging from 10% to 80%.[7,8,25,36,39–41] As in the general population, CAM use among patients with cancer is rising. Among patients attending the Stanford Cancer Supportive Care Program, CAM use increased from 421 patients in 1999 to 6,319 patients in 2002.[38] Ernst and Cassileth[11] posit that this may reflect the increased availability of over-the-counter remedies along with CAM therapies becoming more available in comprehensive cancer programs.

Complementary and alternative medicine use is increasingly popular among women with cancer, especially women with breast cancer.[42] VandeCreek, et al[41] found that women with breast cancer were more likely to use a wide range of alternative therapies more than the general public. They found a 51% increase in the use of prayer, a 25% increase in spiritual healing, and a 23% increase in the use of megavitamins over the general public's use. The authors speculate that the morbidity and mortality associated with breast cancer may motivate increased CAM use. In a study of 617 cancer patients (329 other malignancies, 288 breast cancer), Morris et al[40] found that CAM therapy was consistently used more by breast cancer patients (84%) versus patients with other cancers (66%); however, the breast cancer group was considerably younger.

Women with cancer report using CAM for many reasons, including to take more responsibility for their own care,[18,23–28] to improve physiological health and psychosocial well-being, and to control symptoms.[18,23,25,36,41,43] Barriers to CAM use identified by these women include: (1) cost, (2) lack of time to devote to CAM therapy, and (3) lack of access to the therapy.[24,25,44] This is especially true for practitioner-based therapies such as chiropractic, acupuncture, or massage therapy.

Differences in Characteristics of CAM Users Versus Nonusers

Complementary and alternative medicine is used by people of all ages and backgrounds. Nevertheless, some groups use CAM more than others. Studies with cancer patients and general public internationally demonstrate that CAM users tend to be women, better educated, of higher socioeconomic status, and younger (age >65 years) than nonusers.[7,10–12,14,16,33,34,45–47] Additional factors predictive of CAM use in US adults include: living in the West or South,[7,10,13,14] living in an urban area, hospitalization in the past year,[7] and support group attendance.[25] Richardson et al[36] found that after excluding spiritual practices and psychotherapy, CAM use was predicted by sex (female), education (higher), and chemotherapy status (currently on treatment). Younger patients (<55 years) were 2.1 times (95% CI, 1.2 to 3.6) more likely than older patients, and women were 1.8 times (95% CI, 1.02 to 3.1) more likely than men to use CAM. Additional evidence suggests that people who engage in healthier lifestyles use CAM more than those with less healthy lifestyle practices (eg, former smokers are more likely to use some form of CAM compared with current smokers or those who have never smoked).[7,11]

■ Summary

Although researchers have studied types and frequency of CAM being used by the general population and by patients with common cancers, and have described many characteristics of CAM users, research examining the use of CAM specifically for management of cancer-related symptoms is scarce. To date, no literature exists on CAM use for symptom control for those with lung cancer.

■ Conceptual Framework

The multidimensional Revised Symptom Management model[48,49] provided the foundation for this study. The Revised Symptom Management model consists of 3 interrelated dimensions: the symptom experience, management strategies, and outcomes. Symptom management strategies, specifically CAM therapies, are the focus of this report. Demographic, health status, and clinical characteristics were hypothesized as factors influencing CAM use for symptom management.

■ Methods

Design, Sample Eligibility Criteria, and Recruitment

This study is nested within a cross-sectional, descriptive study of QOL and symptoms in women living with lung cancer.[35] Eligibility criteria for the larger study included (1) female sex, (2) a diagnosis of non–small cell lung cancer (histologically or cytologically diagnosed and verified by the treating physician, tumor registry, or medical record) of at least 6 months but less than 5 years prior to study entry (women with recurrence of, or a second primary lung cancer were eligible). Exclusion criteria included diagnosis with small cell lung cancer or other types of cancer involving the lung (eg, mesothelioma, lung metastasis, carcinoid). Additional eligibility criteria for this analysis included a self-report of at least one of the following 8 symptoms: (1) pain, (2) difficulty breathing, (3) fatigue, (4) loss of appetite, (5) weight loss, (6) cough, (7) sleep disturbance, and/or (8) difficulty concentrating.

In total, 353 women were screened for study participation. Of these, 313 (89% of those screened) were eligible, 217 (69% of those eligible) agreed to participate and had complete data for the outcome variables in the parent study. Of women with complete data, 189 (87%) had 1 or more symptoms and were the subjects of this report.

Data collection sites were selected for recruitment of women from a range of socioeconomically, ethnically, and geographically diverse populations and included multiple sites at the participating institutions (University of California at Los Angeles, Yale University, University of Alabama at Birmingham, State University of New York at Buffalo, Medical College of Georgia). The study was approved by the institutional review board at the University of California, Los Angeles, and at each of the participating institutions.

Procedure

Participants were recruited using IRB-approved materials including letters, flyers in oncology offices, and advertisements. Recruitment strategies included identification of potential participants through tumor registries, clinical practice sites, and by direct appeal through newspaper, television, and radio announcements. A telephone script was used to ensure that consistent information was provided about the study. Interviews occurred in the subjects' homes or in research offices, and participants were paid $25 for their time and effort. Procedures are described in detail elsewhere.[35,50]

Instruments

The Symptom Management Questionnaire (SMQ) was used to assess the presence of 8 symptoms (pain, difficulty breathing, fatigue, loss of appetite, weight loss, cough, sleep disturbance, and difficulty concentrating) and the use of symptom management strategies including CAM therapies. The SMQ was developed by a panel of experts and included the most common symptoms in patients with lung cancer and the commonly used CAM therapies being used at that time. It was used by the investigators in an earlier study that focused on symptom distress and management in women with HIV/AIDS.[51] The SMQ version used in this study contains 6 items [item 6 included 5 subitems (6, 6a, 6b, 6c, and 6d) with a possible total of 10 items]. Item 1 asked if the patient experienced any of 5 symptoms, previously shown to be common in women with lung cancer (including pain, difficulty breathing, fatigue, loss of appetite, and weight loss), during the past 4 weeks ("During the past four weeks, which of the following symptoms have you had?"). Item 2 asked, "What do you do to control this symptom?" A list of 9 possible therapies was provided, including medications, diet, herbs, tea, acupuncture, massage, meditation, prayer, and "other," with space provided for participants to write in any other therapies used and/or list medications. Item 3 asked, "Which things worked best for you?" and item 4 asked, "Which things seem not to help you even though you try them?" Both items 3 and 4 were followed by a list of the 5 symptoms, with room to write in which therapies worked or did not work for the patient. Item 5 asked the participant, "Overall, how well do you think you are dealing with these problems (symptoms)?" and included 3 possible responses: (1) "not at all well," (2) "moderately well," and (3) "very well" for each of the 5 symptoms. Item 6 asked the subject to write in any additional, not previously listed, symptoms she experienced. Examples provided included cough, problems with sleep, or problems with concentration. Items 6a through 6d are a repeat of questions 2 through 5 for the additional (write-in) symptoms.

Complementary and alternative medicine therapies were defined for this study as the use of the 6 most frequently used treatments (from the SMQ) found in this analysis, including (1) herbs, (2) tea, (3) acupuncture, (4) massage, (5) meditation, and (6) prayer to manage symptoms. Medications were not considered CAM and were excluded from this analysis. Diet was also excluded from this analysis because it is frequently used for disease treatment and the focus of this analysis was CAM use for management of specific symptoms.

We assessed concurrent validity between the SMQ and the Lung Cancer Symptom Scale (LCSS)[52,53] using the presence of 4 symptoms (pain, fatigue, dyspnea, and appetite) common to both instruments. Percent agreements were as follows: fatigue, 74.2%; pain, 64.3%; dyspnea, 64.6%; and appetite, 30.8%. The time frame and rating scales used to assess these symptoms are noticeably different. For the LCSS, the participant rates symptom severity during the past day using a 0–100 mm visual analogue scale, with anchors of "none" to "as much as it could be" for pain, shortness of breath, and fatigue, and "as good as it could be" to "as bad as it could be" for appetite. The SMQ asks only about the presence of the symptom (pain, fatigue, difficulty breathing, and loss of appetite) over the past week with no severity rating. For the symptoms appetite and dyspnea, the wording is appreciably different between instruments. The SMQ asks about "loss of appetite" and "difficulty breathing," whereas the LCSS asks,

"How is your appetite?", and "How much shortness of breath do you have?"

Demographic characteristics (age, marital status, race/ethnicity, educational level, employment status, geographic location and religion) were collected via self-report. *Clinical characteristics* were collected from the medical record and included time since diagnosis, presence of metastases, and the presence and type of current treatment (chemotherapy, radiation therapy).

Health status characteristics included disease comorbidities, depressed mood, and smoking status. Disease comorbidities were assessed by the well-established Charlson Comorbidity Index,[54,55] a self-report scale used to determine the number and frequency of specific conditions. Depressed mood was assessed using the Center for Epidemiologic Studies—Depression Scale (CES-D).[56-58] The Center for Epidemiologic Studies—Depression Scale has a total possible score of 60. A score of ≥16 may indicate depression, therefore women in this study with scores ≥16 were considered to have depressed mood, whereas women with scores <16 were not. Questions based on items from the Behavioral Risk Factor Survey,[59] in conjunction with biochemical verification, were used to determine smoking status (past and current use).

Data analysis included (1) descriptive statistics of the types and frequencies of the 6 CAM therapy options used to control any of the 8 symptoms selected for this analysis. Symptom frequency (occurrence over the past 4 weeks) was calculated for each of the 8 identified symptoms as was frequency of each type of CAM (of the 6 CAM therapy options) used to manage each (of the 8 selected symptoms) symptom. (2) Differences in demographic, health status, and clinical characteristics between CAM users and non-CAM users were determined using t tests for independent samples and Chi-square likelihood ratio for categorical variables (univariate analyses). (3) Multivariate logistic regression analysis was used to describe which demographic or clinical characteristics predicted CAM use to control symptoms. Two models were tested by stepwise logistic regression using variables that attained P values of ≥.1 from either (univariate) Chi-square or t tests. For the first model, predictors were selected using entry P values of ≥.1 and included 5 variables: geographic location ($P = .024$, $df = 2$, South and West vs Northeast), age ($P = .026$, $df = 187$), symptom frequency ($P = .003$, $df = 187$), history of ever smoking >100 cigarettes ($P = .060$, $df = 1$), and highest educational grade attained ($P = .079$, $df = 187$). Predictors were selected for the second model using entry P values of ≥.05, resulting in a 3-variable (geographic location, age, and symptom frequency) model. All analyses were performed using the SPSS Statistical package (SPSS, Chicago, Ill, version 11.5), and alpha was set at .05, except as described.

■ Results

Sample Characteristics

A description of the demographic, health status, and clinical characteristics of the total sample (N = 189), as well as for the subsamples of women who did (n = 84, 44%) and who did not (n = 105, 56%) use CAM to control their symptoms, is presented in Table 1. Thirty-two (16.9% of total sample) of the 189 women in this sample were non-Caucasian (not displayed), including 22 African Americans, 3 Asian/Pacific Islanders, and 7 who identified themselves as "other." Twenty-six women (13.8% of total sample) reported undergoing current cancer treatment including chemotherapy (n = 22, 84.6%), radiation therapy (n = 2, 7.7%), and both chemotherapy and radiation therapy (n = 2, 7.7%).

Differences in Characteristics by CAM Use

Several significant (univariate) differences between CAM users and non-CAM users were noted (Table 1). Significant differences were found in demographic and clinical characteristics. Younger women were more likely to use CAM, and women using CAM had significantly more symptoms. Women from the West Coast and South versus Northeast were also more likely to use CAM.

Overall CAM Use Frequency

The frequency of CAM use is displayed in Table 2. The most common CAM used was prayer. Of the 6 types of CAM analyzed, the 4 most frequently used were those that can be self-administered (prayer, meditation, teas, and herbs), whereas the 2 least used were practitioner-based therapies (massage and acupuncture).

CAM Use By Symptoms

Symptom prevalence by CAM use is displayed in Table 3. The 2 most common symptoms for which women used CAM were pain and difficulty breathing. Prayer was most often used to manage pain, difficulty breathing, and fatigue, and was the only type of CAM used across all 8 symptoms.

Predictors of CAM Use

To determine which demographic and/or clinical variables best characterized CAM use in women with lung cancer, 2 multivariate logistic regression models were tested. Model 1 (5 variables) coefficients include $\chi^2 = 25.2$, $df = 6$, $P < .000$, with 63.0% of cases correctly predicted versus 55.6% for the null model. Model 2 (3 variables) coefficients include $\chi^2 = 20.6$, $df = 4$, $P < .000$, with 62.4% of cases correctly predicted versus 55.6% for the null model. Because the 5-variable model did not contribute significant additional information, the more parsimonious, 3-variable model was reported (Table 4). Compared with women living in the Northeast, women from the South were more likely to use CAM, followed by women from the West Coast. Younger women and those with greater numbers of symptoms were also more likely to use CAM, although age was not significant.

▪ Discussion

To our knowledge, this is the first study describing CAM use for symptom management in people with lung cancer, providing important initial data in this population. Slightly less than half of the participants reported any CAM use. Women with greater symptom frequency were more likely to use CAM—participants reported from 1 to 4 symptoms for which they had used CAM. These findings suggest that CAM use may be an indicator of symptom distress.

The current study supported CAM use patterns found in other populations of women with cancer. Self-managed CAM therapies (prayer, meditation, tea, herbs) were used more frequently than practitioner-based (massage, acupuncture) therapies to control symptoms. The percentage of patients in our study using CAM therapies was generally lower than in studies of women with breast cancer,[18,19,28,40,41,43] however, the overall pattern was similar. The disparity between our results and other studies may reflect differences in symptoms and symptom management between women with lung cancer and those with other cancers, the heterogeneous mix of women with local as well as advanced stage disease and the limited number of CAM therapies included in our analysis.

Women in our study who used CAM to control symptoms, used CAM therapies most often for controlling pain, followed by difficulty breathing and fatigue. Women with breast cancer in the study of Crocetti et al[43] reported using CAM primarily for physical (62%) and psychological (21%) distress. Twenty-one percent of the participants in the study conducted by Shen et al[18] reported using CAM to relieve symptoms and stress related to breast cancer and its treatment. Although some studies assess the various reasons why patients with cancer use CAM therapies, none were found to

Table 1 • Differences in Demographic, Health Status and Clinical Characteristics of Women Who Use and Who Do Not Use CAM to Control Symptoms of Lung Cancer

Characteristic	Total Sample (N = 189)	CAM users (n = 84, 44.4%)	Non-CAM users (n = 105, 55.6%)	P, 2-tailed
Demographic	Mean [SD]	Mean [SD]	Mean [SD]	
Age (years)*	64.7 [11.6]	62.6 [11.5]	66.4 [11.4]	.026[†,‡]
Education (years)*	13.2 [2.7]	12.8 [2.7]	13.5 [2.6]	NS[‡]
Marital Status	n (%)	n (%)	n (%)	
Married	93 (49.2)	40 (21.2)	53 (28.0)	NS[§]
Living Arrangement				
Living alone	68 (36.0)	28 (14.8)	40 (21.2)	NS[§]
Race/Ethnicity				
Caucasian	157 (83.1)	69 (36.5)	88 (46.6)	NS[§]
Geographic Location				
Northeast	77 (40.7)	26 (13.8)	51 (27.0)	.023[†,§]
South	48 (25.4)	28 (14.8)	20 (10.6)	
West Coast	64 (33.9)	30 (15.9)	34 (18.0)	
Religion				
Protestant	104 (55.0)	47 (24.9)	57 (30.2)	NS[§]
Catholic	60 (31.7)	29 (15.3)	31 (16.4)	
Jewish	17 (9.0)	4 (2.1)	13 (6.9)	
Other	8 (4.2)	4 (2.1)	4 (2.1)	
Health Status				
Comorbid disease presence	133 (70.4)	64 (33.9)	69 (36.5)	NS[§]
Depressed mood (≥16 CES-D)	72 (38.1)	34 (18.0)	38 (20.1)	NS[§]
Tobacco Smoking Status				
Former	145 (76.7)	61 (32.3)	84 (44.4)	NS[§]
Current	16 (8.5)	6 (3.2)	10 (5.3)	
Never	28 (14.8)	17 (9.0)	11 (5.8)	
Clinical	Mean [SD]	Mean [SD]	Mean [SD]	
Months since diagnosis*	23.4 [15.5]	21.5 [14.5]	25.0 [16.1]	NS[‡]
Frequency of all symptoms*	2.89 [1.5]	3.3 [1.6]	2.6 [1.5]	.003[†,‡]
	n (%)	n (%)	n (%)	
Presence of metastases	26 (13.8)	12 (6.3)	14 (7.4)	NS[§]
Current cancer treatment	26 (13.8)	8 (4.2)	18 (9.5)	NS[§]

CAM indicates complementary and alternative medicine; CES-D, Center for Epidemiologic Studies—Depression Scale.
*Ages ranged from 33 to 89 years, education from 6 to 24 years, time since diagnosis from 5.8 to 6.0 months, and symptom frequency ranged from 1 to 7 symptoms.
[†]P < .05 for comparison of CAM use versus nonuse.
[‡]t tests (continuous variables).
[§]Chi-square likelihood ratio (categorical variables).

Wells et al

Table 2 • Frequency of Specific CAM Use to Control Symptoms in Women With NSCLC (N = 189)*	
Type of CAM Used for any Symptom	n (%)
Prayer	66 (35.0)
Meditation	22 (11.6)
Tea	22 (11.6)
Herbs	18 (9.5)
Massage	13 (3.2)
Acupuncture	5 (2.6)

CAM indicates complementary and alternative medicine; NSCLC, non–small cell lung cancer.
*CAM therapies used alone or in combination with others.

assess which specific types of CAM patients use to manage a specific symptom. Ours is the first study to specify which of a specific list of CAM therapies was used to control any of 8 specific symptoms common to patients with lung cancer.

Similar to many other studies, *prayer* was reported as the most common CAM therapy employed by CAM users, and the only type of CAM used across all reported symptoms. Prayer is the most common CAM therapy being used in the general US population[7,13] and the one most frequently reported by oncology patients.[28,34,36,41] These results are analogous to Lengacher et al,[28] who found that prayer, massage, herbal products, and meditation were the CAM therapies rated as being most effective in women with breast cancer. There is evidence to show that prayer is beneficial for patients with lung cancer. Meraviglia[60,61] found that more prayer activities and experiences (higher prayer scores) were associated with greater psychological well-being and enhanced meaning in life with a corresponding decrease in symptom distress in patients with lung cancer.

Differences in frequency of the 6 CAM therapies in our analysis may be due in part to whether or not they required a specially trained practitioner. All 4 of the most frequently used CAM therapies (prayer, meditation, tea, and herbs) may be used to self-treat anywhere without access to a licensed practitioner. Both print and electronic media are currently available to patients wanting to learn various CAM use techniques, and

herbal products, teas, and dietary supplements are readily available in most areas of the United States. Prior studies have demonstrated[14] an ongoing trend toward the use of CAM therapies that can be self-administered as opposed to those requiring visits to a CAM provider.[24,25,44,62]

On the other hand, the 2 least used CAM therapies, massage and acupuncture, require an experienced practitioner with specialized equipment who may also be located at a distant site. Patients report that the most common reported barriers to CAM use, especially to practitioner-based therapies, are cost (lack of health insurance coverage), time (lack of time or schedule conflicts), and lack of access (therapy unavailable in local area, transportation problems).[25,44,62] Other reported barriers to CAM use include symptoms such as fatigue, anxiety, and physical disabilities, efficacy concerns, and fears of possible harm from the therapy.[10] Austrian et al[44] found fatigue and physical disability to be notable barriers to CAM use. Lack of access, whether due to cost, transportation, time, or disability issues, makes provider-based CAM therapies less likely to be used than self-managed CAM therapies.

Massage therapy was used by less than 7% of participants and was almost exclusively used for pain management, although a few women used massage to relieve difficulty breathing, fatigue, and insomnia. Acupuncture was used least and only for the most frequently reported symptoms, perhaps because, of all 6 types of CAM, it requires a specialized practitioner with specialized equipment. Our survey did not ask whether CAM was administered by a licensed practitioner, but the infrequent use of massage and acupuncture may be due to these issues.

Correlates of CAM Use

Women who reported greater symptom frequency had increased CAM use. Ashikaga et al[23] found a significant negative correlation between the number of CAM therapies used by women with breast cancer and physical functioning. In a population of women with recently diagnosed early-stage breast cancer, Burstein et al[63] found that new use of CAM was a marker of greater psychosocial distress and worse QOL. In our study, women with metastases and those currently undergoing cancer treatment were less likely to use CAM,

Table 3 • Types of CAM Used Alone or in Combination for Symptom Management								
	Symptoms							
Types of CAM Used*	Pain (n = 46)	Difficulty Breathing (n = 46)	Fatigue (n = 31)	Sleep Problems (n = 9)	Concentration (n = 5)	Loss of Appetite (n = 5)	Cough (n = 4)	Weight Loss (n = 2)
Prayer	38 (45.2)	35 (41.7)	21 (25.0)	6 (7.1)	3 (3.6)	2 (2.4)	1 (1.2)	2 (2.4)
Meditation	8 (9.5)	9 (10.7)	4 (4.8)	4 (4.8)	2 (2.4)	3 (3.6)	0	0
Tea	6 (7.1)	9 (10.7)	6 (7.1)	4 (4.8)	0	2 (2.4)	3 (3.6)	0
Herbs	7 (8.3)	5 (6.0)	9 (10.7)	1 (1.2)	2 (2.4)	0	0	0
Massage	10 (11.9)	2 (2.4)	1 (1.2)	1 (1.2)	0	0	0	0
Acupuncture	3 (3.6)	2 (2.4)	1 (1.2)	1 (1.2)	0	0	0	0

CAM indicates complementary and alternative medicine.
Values are presented as n (%). n = 84 CAM users.
*More than 1 type of CAM may be used to manage each symptom.

Table 4 • Predictors of CAM Use: Multivariate Logistic Regression Analysis*

Demographic Variables	β	SE	Wald χ^2	df	OR	CI	P
Geographic Location							
South	1.06	0.40	7.16	1	2.90	1.33–6.29	.017
West Coast	0.90	0.38	5.64	1	2.50	1.17–5.15	.02
Age	−0.03	0.01	3.45	1	0.97	0.95–1.00	.06
Health Characteristics							
Symptom frequency	0.28	0.11	6.43	1	1.32	1.07–1.63	.01
Constant	0.11	1.03	0.01	1	1.12		.91

β indicates normalized beta coefficient; SE, standard error; OR, odds ratio; CI, confidence interval; CAM, complementary and alternative medicine.
N = 189 (overall 3-variable model statistics: χ^2 = 20.5, df = 4, P = .000).
*Variable(s) entered on step 1: South, West Coast (compared to Northeast), age, and symptom frequency (number of reported symptoms).

however the small number of these women (only 13.8%) prohibits making any generalizations. It is possible that the demands of treatment do not allow time or energy for exploration of other treatment modalities or women may be concerned with adverse interactions between their treatment and CAM therapies.

Understanding the differences in demographic, health status, and clinical characteristics among women living with lung cancer who choose to use CAM versus those who do not is important in order for healthcare providers to be aware of which patients are likely to use CAM. In addition to symptom frequency, we found several differences in characteristics between CAM and non-CAM users, including age, smoking status, and geographic location. In common with other studies,[7] we found that younger women in our sample were more likely to use CAM as were those with healthier lifestyles (nonsmokers and former smokers were more likely to use CAM than current smokers); although these results were significant in the univariate tests (t test and χ^2), they only approached significance in the multivariate analysis. In common with Barnes et al,[7] we found CAM use to be more prevalent in women living in the Southern states—women living in the South were almost 3 times more likely to use CAM than those living in the Northeast. Women living on the West Coast were about two-and-a-half times more likely to use CAM than women in the Northeast. These regional differences may reflect variations in cultural norms and values across the United States. An example of regional differences in CAM use is prayer. Barnes et al[7] found the highest use of mind-body therapies, including prayer, in the Southern states (57.2%), but after prayer was excluded from their analysis, it became the region of lowest use (18.0%), indicating that prayer was the primary CAM used in the mind-body category. In our study, the sample size was too small to exclude prayer from our analysis to determine similar regional differences.

Limitations

There were several limitations to this study that should be considered in the interpretation of the findings. We used an exploratory measure of CAM and assessed a restricted number of CAM therapies as our focus was on symptom management. Most studies assessing CAM use in clinical populations include a limited number of CAM therapies in part because, for infrequently used CAM therapies, a large sample size is needed for meaningful analysis. The 1990 and 1997 telephone survey by Eisenberg et al[10,64] used a more comprehensive assessment of 15 CAM therapies to assess CAM use patterns in the overall US adult population. Some or all of Eisenberg's[64] original 15 CAM therapies have been used in other studies but there is no consistency in the way researchers assess CAM use in clinical populations. Lack of consensus in the definition of CAM among researchers, inconsistencies in data collection methods, and discrepancies in reported types of CAM therapy[11,13] have affected interpretation of CAM use prevalence research. This problem persists because standardized instruments to measure CAM use in patient populations are rare.[11,65] Of 4 CAM validation studies identified in a recent PubMed search, only one was designed to measure the prevalence and characteristics of use of CAM therapies among patients[31]—the others measure healthcare providers' attitudes toward CAM.[66–68]

In our study, we used a definition of CAM use based upon the cancer literature, however, the 6 CAM options may have been too limited. Our questionnaire was based upon past research in this population and included CAM therapies often cited by patients with lung cancer. Although special diets and dietary supplements are popular, we excluded diet from our analysis because it is frequently used for disease treatment and our study's focus was symptom management. An important strength of our study was that CAM use was assessed by the type of symptom as opposed to for symptom relief in general.

Concurrent validity between the SMQ and the LCSS for the 4 common symptoms (pain, fatigue, dyspnea, and appetite) may have been affected by differences in time frame and rating scale. The difference in wording/terminology for the symptoms appetite and dyspnea contribute to the conceptual disparity and lower percent agreement between the SMQ and LCSS. Further validation of the SMQ needs to be undertaken.

Although the largest known study to assess CAM use in lung cancer, the small sample size prevented us from doing subgroup analysis. The majority of CAM prevalence studies in patients with cancer are not large enough for this purpose.

Because women with lung cancer often experience more symptoms and greater symptom distress, it is important to understand what factors lead to better symptom control for them. Further research in this population is needed.

■ Implications

Implications for Clinical Practice

Information about CAM use has significant implications for healthcare providers, educators, and researchers. Many CAM therapies have been within the domain of nursing for centuries,[69] and patients often seek information and advice from nurses. Almost 150 years ago, Florence Nightingale advocated integrating what were then nontraditional practices, including fresh air, sunlight, and cleanliness as well as CAM therapies such as art therapy and the use of pets (animal-assisted therapy), into patient care to improve patients' health and well-being.[69,70]

With CAM use rising by patients with cancer, healthcare providers must stay informed about what their patients are using for symptom management. Often, patients do not disclose any or all of their CAM use to their physicians.[10,14,71] Over 60% of adults in Eisenberg's 1997 survey, when asked if they disclosed their CAM use to their physician replied, "The doctor never asked."[72–76] This is cause for concern because the information that patients receive from other sources may not be reliable. It is important that clinicians discuss CAM use with their patients because some CAM therapies may interfere with standard treatment or may be harmful when used with conventional treatment.[77] Clinicians must learn to ask patients about CAM use in order to provide comprehensive, quality healthcare.

Implications for Healthcare Provider Education

In order for clinicians to provide up-to-date evidence based healthcare, they must be informed. Nurse educators must also understand CAM use and prevalence patterns in the general and in specialized clinical populations, as well as any evidence of safety, effectiveness, and adverse effects for these therapies. This is especially important when considering symptom management strategies among a patient population with a high symptom burden such as those with lung cancer.

Implications for Research

Assessment of CAM use is hindered by differing understandings of CAM therapy on the part of both investigators and patients. Standardized, valid, and reliable CAM therapy use questionnaires are needed to determine prevalence and use patterns in cancer-related symptom management. Many CAM therapies are based on a body of anecdotal evidence but little or no evidence exists of efficacy for symptom relief in people with lung cancer.[78–80] The dearth of research studying CAM use for symptom control in patients with cancer, especially lung cancer, highlights the need for well-designed studies in this arena.

■ Conclusions

According to our findings, CAM therapies are frequently used to manage lung-cancer related symptoms. A variety of CAM therapies are used, with the most common being prayer. Complementary and alternative medicine varied by symptom, with highest CAM use seen for pain and difficulty breathing. We found different patterns of use by geographic location, indicating the need for future exploration of cultural and regional differences. As symptom frequency was a significant predictor of CAM use, CAM use may be an indicator of symptom burden, as women explore a variety of strategies for symptom relief. Our study provides important initial data regarding CAM use for managing symptoms by women with lung cancer.

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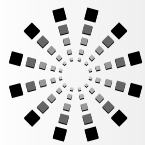
MEDIA NEWS

Reviews of selected media are presented in this feature. Nurses, other health professionals, and publishers are invited to submit books, videotapes, CD-ROMs, and other related oncology education materials to: Carol Reed Ash, Editor, *Cancer Nursing*, J. Hillis Miller Health Center, PO Box 100187, University of Florida, Gainesville, FL 32610. Selections of items for review will be based on their relevance to cancer care and the availability of space.

REVIEWERS WANTED FOR MEDIA REVIEWS. Cancer nurses interested in reviewing material for publication in the ''Media News'' feature should submit a letter and a short biographical sketch to the Editor at the address listed above.

Books Received

Hematology-Oncology Therapy

Michael M. Boyidadzis, Peter F. Lebowitz, James N. Frame and Tito Fojo

The Mc Graw-Hill Companies, Inc.
New York, 2007
www.mcgraw-hillmedical.com
Paperback; 899 pp.; ISBN: 0-07-143497-6

The Complete Guide to Relieving Cancer Pain & Suffering

Richard B. Patt and Susan S. Lang

Oxford University Press
Oxford, 2006
www.oup.com/us
Paperback; 446 pp.; ISBN: 0-19-531202-3