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Complementary and Alternative Medicine Use in Minority and Medically Underserved Oncology Patients: Assessment and Implications

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Abstract

Introduction: Complementary and alternative medicine (CAM) use in minority and medically underserved oncology patients is not well documented. We assessed knowledge and utilization of CAM in a sample of these patients receiving treatment at an urban community hospital. **Methods:** Patients with cancer were interviewed using an electronic application that depicted specific CAM therapies. Patients were questioned on their knowledge and utilization of therapies, deterrents to use, and interest in using these therapies if they were made available. **Results:** Patients (n = 165) reported a high awareness and use of CAM therapies. CAM use was highest for prayer (85%), relaxation (54%), special diet (29%), meditation (19%), and massage (18%). Patients' interest in using CAM was high for nearly all therapies. Lack of adequate knowledge and cost of use were reported as deterrents to use. Female patients reported higher use of aromatherapy relative to males (37.1% vs 19.4%, $P = .02$); those with higher education reported greater use of relaxation (60.8% vs 28.6%, $P = .02$); non-Hispanics reported higher use of relaxation relative to Hispanics (63.5% vs 44.2%, $P = .03$), and African American patients reported higher use of relaxation relative to White patients (69.2% vs 50%, $P = .03$). **Conclusions:** CAM use in minority and medically underserved cancer patients is common, but not professionally guided; thus, concerns remain regarding its safe use. Our data underscore the importance of patient-physician dialogue regarding CAM use in this patient population, and interest in access to the medically guided integration of evidence-based CAM therapies.

Keywords
CAM, complementary medicine, alternative medicine, minority patients, underserved patients, cancer

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Introduction

According to the National Center for Complementary and Integrative Health (NCCIH), the terms *complementary* and *alternative* are used interchangeably; however, they refer to different concepts. If a nonmainstream practice is used *together with* conventional medicine, it is considered "complementary"; if it is used *in place of* conventional medicine, it is considered "alternative."[1] NCCIH adds that true alternative medicine is uncommon, and most people who use nonmainstream approaches use them along with conventional treatments.[1] These approaches may fall into 1 of 3 categories: (1) natural products (such as herbs, vitamins/minerals, and probiotics, etc); (2) mind and body practices (such as prayer, yoga, meditation, massage, acupuncture, and relaxation techniques, etc); and (3) other complementary health approaches (traditional healers, ayurvedic medicine, traditional Chinese medicine, etc).[1]

Two comprehensive systematic reviews pertaining to CAM use by cancer patients provide evidence that the proportion of oncology patients using CAM has increased consistently in recent decades. While the first review of

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patients from 13 countries reported an average CAM use of 31% (range 7%-64%),[2] a more recent review involving more than 65 000 cancer patients reported an average CAM use of 40%.[3] Meta-analyses suggest that CAM use in cancer patients has risen from an estimated 25% in 1970s and 1980s to more than 32% in 1990s, and 49% after 2000.[3] In the United States, the latest National Health Interview Survey showed that 38% of adults are using some form of CAM.[4] In specific subgroups such as breast cancer patients, CAM use has been reported by greater than 80% of patients.[5] Data also show that women with breast cancer are more likely to use CAM compared with other patients with cancer, such as those with colorectal, prostate, or gynecological cancer.[6] While we do not have figures with respect to expenditure on CAM specifically by cancer patients, overall, CAM accounts for about $34 billion in out-of-pocket expenditures yearly for health care in the United States.[7]

Trends indicating an ever-increasing utilization of CAM have significant implications for oncology professionals and patients. A key concern is lack of the oncologist's awareness of the type, dosage, and frequency of CAM therapy used by patients, and its potential or real effects on the intended outcomes of concurrent conventional treatment(s). As an example, concern has been expressed over the impact of interactions of several herbal therapies and dietary supplements on the effectiveness of conventional treatments.[8] Other concerns pertain to the lack of a systematic evidence-base guiding CAM use especially for ingestible substances[8,9]; lack of safety, efficacy, and consistency data on CAM therapies,[10] and the use of potentially harmful, ineffective, or costly therapies in the absence of appropriate physician guidance.[11] Another challenge associated with patients' use of CAM occurs in the realm of patient-physician communication and mutual trust.[9,12] Previous studies indicate that in general, CAM use is neither self-reported by patients nor inquired after by physicians.[11,13] This breach in critical communication that is immediately relevant to patients' clinical outcomes is a matter of considerable concern.

Factors significantly associated with CAM use include female gender, young or middle age, higher educational/income background,[14-16] advanced disease status,[15] and non–African American/non-Hispanic race.[16] CAM use, however, is not well documented in medically underserved oncology patients. According to the US Department of Health and Human Services (https://bhw.hrsa.gov/shortage-designation/muap), Medically Underserved Areas (MUAs) may be a whole county or a group of contiguous counties, a group of county or civil divisions, or a group of urban census tracts in which residents have a shortage of personal health services. Medically Underserved Populations (MUPs) may include groups of persons who face economic, cultural, or linguistic barriers to health care. Previous studies that have characterized patterns of CAM use in these populations have primarily been in women with breast cancer.[17-19] Research on CAM use in underserved populations indicates that CAM is frequently used as a substitute for conventional care when access to care is not available, or when such care is limited.[20]

Given the potential clinical repercussions of unguided CAM use in the above setting, an investigation into the patterns of use takes on critical significance. We conducted a study of CAM use in a population of predominantly minority and medically underserved oncology patients in order to assess: (1) patients' knowledge and use of CAM, (2) deterrents to CAM use, and (3) interest in and willingness to use CAM therapies if made available professionally alongside conventional treatment(s).

Methods

Patients

The study included patients undergoing treatment at the Lyndon Baines Johnson General Hospital, an urban community hospital in Houston, Texas. Inclusion criteria were (1) 18 years or older with a current diagnosis of cancer/malignant hematology, (2) at least 1 week postdiagnosis and no more than 6 months posttreatment, and (3) able to understand and sign a written informed consent document in English/Spanish. The study was open to men and women and all racial/ethnic groups. Written informed consent was obtained from all patients. The study was approved by the MD Anderson Institutional Review Board.

Assessment of CAM Use

Once patients had been approached and recruited, and informed consent obtained, study coordinators sat with individual patients in the in- or outpatient areas of their clinics while they were waiting for their appointments. Coordinators used a specially designed survey instrument that involved the use of an electronic application which was loaded with the study protocol tools onto electronic tablets. The application visually depicted a graphic of each CAM therapy included in the instrument. Types of therapies depicted included acupuncture, aromatherapy, herbal therapy, massage, meditation, prayer, relaxation, special diet, and yoga. These therapies were chosen to be broadly representative of the CAM therapy categories as outlined by the NCCIH (ie, natural products, mind and body practices, other complementary health approaches).[1] Accordingly, CAM was defined to participants as the use of any nonmainstream approach (or approaches) that they may be using along with the use of conventional treatments.

Briefly, specific therapies depicted by the instrument were defined to the patients as follows: Acupuncture, as treatment of pain or disease by inserting the tips of needles

at specific points on the skin; Aromatherapy, as therapeutic use of aromatic candles or essential oils in baths or massage; Herbal Therapy, as the use of plants or plant extracts for medicinal purposes, especially plants that are not part of normal diet; Massage Therapy, as the practice of soft tissue manipulation with physical and functional purposes and goals; Meditation, as continuous concentration or thinking on a subject or series of subjects; Prayer, as communicating with God or spirit in worship (this may include praise, requesting guidance or assistance); Relaxation, as any method, process, procedure, or activity that helps a person to relax and reverse the effects of stress; Special Diet, as any diet therapy believed to prevent and/or control illness and promote health, and finally, Yoga, as a system of exercises practiced to promote control of the body and mind. No examples of a specific special diet or herbal therapy were provided. Similarly, no specific type of relaxation or prayer were outlined, rather the terms were defined broadly as indicated above.

While showing the visual of each therapy, the study coordinator read its description to the patient, and asked the following questions that could be answered as yes, no, or maybe: (1) Do you know what this therapy is? (2) Do you currently use this therapy? (3) Have you ever used this therapy? (4) If this therapy was available to you, would you be interested in utilizing it? (5) If this therapy was available to you, what reasons would discourage you from utilizing it? For this question, patients were provided the following response choices: (a) Do not know enough about it, (b) High cost, (c) Lack of trust in therapy, and (d) Other reason.

Patients' responses were entered and saved directly on the tablet by the study coordinator, and uploaded to the MD Anderson General Oncology Database. Patients that completed the survey were given a $10 gift card that could be redeemed at most major retailers/vendors.

Assessment of Demographic Data

Patients self-completed a questionnaire to provide data on their race/ethnicity, educational level, income level, medical payment method, marital status, residential ownership, and religious affiliation. The questionnaire utilized a patient identifier number rather than patients' name or date of birth, and patients reserved the right to decline answering any of the questions. Basic demographic data such as age and gender were obtained from patients' medical records.

Statistical Analyses

Summary statistics were used to describe patient demographics. Patients who responded with "prefer not to answer" were treated as missing for that answer. We calculated the percentage of patients who indicated they had knowledge of a particular CAM therapy, and other percentages of interest such as patients' interest in CAM, current use, and reasons for not using CAM; these were estimated with 95% confidence intervals.

We tested for associations between demographic variables and CAM use using Fisher's exact tests and *t* tests. Prior to hypothesis testing, we collapsed demographic variables to limit the number of cells with low counts. Specifically, religion was categorized as Christian and non-Christian; only 3 professed no religion and were therefore omitted from the analyses. Education was categorized as grade 8 or less and some high school or more; and race was categorized as Asian, which included 1 participant of Native Hawaiian or Pacific Island descent, African American, and White. Furthermore, payment method was categorized as Gold Card, Medicare/Medicaid, and other; marital status was collapsed into partnered, which included people who were married or living with a partner, and not partnered, which included people who were never married, were separated, divorced, or widowed. Finally, income was collapsed into less than $10 000/year and $10 000 to $49 999/year. We have reported results that were found to be statistically significant using a 2-sided test with a significance level of 5%. This study was designed to have 80% power to detect statistical differences under these conditions. No adjustments for multiple testing were completed due to the exploratory nature of this study.

All analyses were conducted using Stata, v.12.0 and SAS v.9.3.

Results

A total of 169 patients consented for the study and were surveyed. Of these, 4 did not respond to any of the questions, resulting in a final sample of 165. Some patients who were approached (number not known) declined to participate; these were not counted or consented.

Patients were largely middle-aged and married with the majority having matriculated from high school or having some college education. About 43% of the sample was comprised of African Americans, and 28% were Hispanic. Notably, nearly 90% of the sample reported an annual household income of less than $10 000 (Table 1).

P values associated with low cell counts should be interpreted with caution.

Knowledge and Use of CAM, Interest in CAM Therapies if Available, and Deterrents to Use

The majority of patients reported relatively high awareness and knowledge of CAM therapies, with knowledge of prayer being highest (97%) and that of herb use being lowest (60%). Current CAM use was highest, in order, for prayer (85%), relaxation (54%), special diet (29%), meditation (19%), and massage (18%) with the remaining

Table 1. Patient Demographics.

Characteristic	No. of Patients (%)
Total no. of patients	165
Age, years	
Mean (SD)	53.6 (11.3)
Median (min-max)	55.0 (25-82)
Gender	
Female	101 (61.2)
Male	64 (38.8)
Education	
Grade 8 or less	14 (8.6)
Some high school	21 (12.9)
High school graduate or GED	70 (42.9)
Some college education	27 (16.6)
College graduate or higher	13 (19.0)
Ethnicity	
Hispanic or Latino	46 (28.0)
Non-Hispanic	118 (72.0)
Income (household), $	
10 000-14 999	11 (6.7)
15 000-24 999	4 (2.4)
25 000-34 999	1 (0.6)
35 000-49 999	1 (0.6)
<10 000.00	147 (89.6)
Marital status	
Married	52 (31.9)
Partnered	9 (5.5)
Separated	11 (6.7)
Divorced or annulled	29 (17.8)
Widowed	16 (9.8)
Never married	46 (28.2)
Payment method	
Gold Card (HCHD)[a]	137 (84.0)
Medicaid	22 (13.5)
Other	4 (2.4)
Race	
Asian	6 (4.0)
African American	66 (43.7)
Native Hawaiian or other Pacific Islander	1 (0.7)
White	78 (51.7)
Religion	
Christian	141 (89.2)
Other[b]	14 (8.9)
None	3 (1.9)

[a]Medical coverage through the Harris County Hospital District.
[b]Buddhist (2), Hindu (1), Muslim (5), other (6).

therapies being used substantially less than 20% of the time. Percentages of patients who reported ever having used CAM were highest for prayer (88%), relaxation (58%), massage (46%), special diet (36%), aromatherapy (31%), meditation (27%), and yoga (21%) (see Table 2 for confidence intervals).

Patients reported a conspicuously high level of interest in utilizing most CAM therapies, if made available. Interest was highest, in order, for: prayer (94%), massage (91%), relaxation (89%), herbal therapy (85%), aromatherapy (81%), special diet (80%), meditation (73%), yoga (70%), and acupuncture (50%) (Table 2).

With regard to acupuncture and herb use, 21% and 22% of patients, respectively, indicated that not knowing enough about these therapies was an impediment to their use. Cost was reported as a deterrent to use by 23% of patients for special diet, and by 17%, 16%, 14%, and 12%, respectively, for aromatherapy, herb use, massage, and yoga. Lack of trust in therapy was expressed by 19% of patients as a deterrent to use of acupuncture. Some patients marked "other reasons" as deterrents to use: 47% for acupuncture; 26% for meditation, and 28% for yoga (Table 2). Although patients were allowed write-ins for "other reasons," they did not provide any specific written answers.

CAM Use by Specific Demographic Variables

Females used aromatherapy more than males (37.1% vs 19.4%, $P = .02$); those with higher education indicated greater use of relaxation (60.8% vs 28.6%, $P = .02$), and non-Hispanics reported higher use of relaxation relative to Hispanics (63.5% vs 44.2%, $P = .03$) (Table 3).

Those who professed non-Christian religion reported significantly higher herb use than Christians (56.3% vs 20.9%, $P = .004$) (Table 3).

African Americans used more relaxation relative to Whites (69.2% vs 50%, $P = .025$), and non-Christians reported greater use of yoga than Christians (50% vs 16.4%, $P = .004$) (Table 3).

There were no significant differences in percentages of CAM users by age, income level, marital status, and payment method (data not shown).

Discussion

A limited number of studies have investigated CAM use in minority oncology patients.[17-19] To our knowledge, the present study is one of the first to survey the knowledge and utilization of CAM in a sample of predominantly minority and medically underserved cancer patients.

Previous studies have reported that the types of CAM most commonly used by oncology patients are prayer/spiritual practices, special diet, herbal remedies, massage, and relaxation.[21,22] In specifically minority populations, the most frequently used CAM types have been reported to be psychotherapy, spiritual healing, meditation, herbal, and dietary therapies.[17,19] Consistent with the prior studies, the most commonly used CAM therapies in our sample were prayer, relaxation, special diet, meditation, and massage.

Table 2. Percentages of Patients With Knowledge and Utilization of Specific CAM Therapies, Interest in Using a CAM Therapy if Available, and Deterrents to CAM Use (With 95% Confidence Intervals) (N = 165).[a]

	Acupuncture	Aromatherapy	Herb	Massage	Meditation	Prayer	Relaxation	Special Diet	Yoga
Know what this therapy is									
n (%)	140 (85.9%)	108 (66.7%)	98 (60.1%)	150 (92.6%)	129 (79.1%)	158 (96.9%)	146 (89.6%)	143 (87.7%)	136 (83.4%)
(95% CI)	(79.6%, 90.8%)	(58.8%, 73.9%)	(52.2%, 67.7%)	(87.4%, 96.1%)	(72.1%, 85.1%)	(93.0%, 99.0%)	(83.8%, 93.8%)	(81.7%, 92.3%)	(76.8%, 88.8%)
Currently use this therapy									
n (%)	9 (5.6%)	28 (17.2%)	21 (13.0%)	29 (17.9%)	31 (19.1%)	138 (84.7%)	88 (54.0%)	47 (28.8%)	22 (13.5%)
(95% CI)	(2.6%, 10.3%)	(11.7%, 23.9%)	(8.2%, 19.1%)	(12.3%, 24.7%)	(13.4%, 26.0%)	(78.2%, 89.8%)	(46.0%, 61.8%)	(22.0% 36.4%)	(8.7%, 19.7%)
Have ever used this therapy									
n (%)	25 (15.3%)	50 (30.7%)	41 (25.2%)	75 (46.3%)	44 (27.0%)	144 (88.3%)	94 (57.7%)	58 (35.6%)	34 (20.9%)
(95% CI)	(10.2%, 21.8%)	(23.7%, 38.4%)	(18.7%, 32.5%)	(38.4%, 54.3%)	(20.3%, 34.5%)	(82.4%, 92.8%)	(49.7%, 65.4%)	(28.3%, 43.4%)	(14.9%, 27.9%)
If available, interested in using									
n (%)	81 (49.7%)	132 (81.5%)	138 (84.7%)	145 (90.6%)	117 (72.7%)	152 (93.8%)	142 (88.8%)	129 (79.6%)	113 (69.8%)
(95% CI)	(41.8%, 57.6%)	(74.6%, 87.1%)	(78.2%, 89.8%)	(85.0%, 94.7%)	(65.1%, 79.4%)	(88.9%, 97.0%)	(82.8%, 93.2%)	(72.6%, 85.5%)	(62.1%, 76.7%)
If this therapy were available, which of the following reasons would discourage you from utilizing it?									
Do not know enough about therapy									
n (%)	18 (21.4%)	5 (4.3%)	27 (21.6%)	2 (1.6%)	8 (7.1%)	1 (0.7%)	5 (3.5%)	6 (5.5%)	9 (8.0%)
(95% CI)	(13.2%, 31.7%)	(1.4%, 9.9%)	(14.7%, 29.8%)	(0.2%, 5.5%)	(3.1%, 13.6%)	(0.0%, 3.6%)	(1.2%, 8.1%)	(2.0%, 11.5%)	(3.7%, 14.6%)
High cost of therapy									
n (%)	8 (10.5%)	22 (16.8%)	19 (16.2%)	20 (13.7%)	9 (8.0%)	3 (2.0%)	7 (4.9%)	30 (22.6%)	14 (12.0%)
(95% CI)	(4.7%, 19.7%)	(10.8%, 24.3%)	(10.1%, 24.2%)	(8.6%, 20.4%)	(3.7%, 14.6%)	(0.4%, 5.6%)	(2.0%, 9.8%)	(15.8%, 30.6%)	(6.7%, 19.3%)
Lack of trust in the therapy									
n (%)	15 (18.5%)	4 (3.5%)	3 (3.0%)	2 (1.6%)	10 (8.7%)	1 (0.7%)	2 (1.4%)	7 (6.2%)	2 (1.9%)
(95% CI)	(10.8%, 28.7%)	(1.0%, 8.8%)	(0.6%, 8.4%)	(0.2%, 5.5%)	(4.2%, 15.4%)	(0.0%, 3.6%)	(0.2%, 5.1%)	(2.5%, 12.3%)	(0.2%, 6.7%)
Other reasons									
n (%)	57 (47.1%)	20 (15.9%)	18 (15.9%)	14 (10.2%)	24 (25.6%)	8 (5.2%)	12 (8.3%)	17 (14.9%)	38 (28.4%)
(95% CI)	(38.0%, 56.4%)	(10.0%, 23.4%)	(9.7%, 24.0%)	(5.7%, 16.6%)	(18.4%, 33.8%)	(2.3%, 10.0%)	(4.4%, 14.1%)	(8.9%, 22.8%)	(20.9%, 36.8%)

Abbreviation: CAM, complementary and alternative medicine; CI, confidence interval.

Table 3. Demographic Characteristics of Complementary and Alternative Medicine Users for Statistically Significant Variables (N = 165).

	Acupuncture		Aromatherapy		Herb		Massage		Meditation	
	n (%)		n (%)		n (%)		n (%)		n (%)	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Gender	*P* = .5076		***P* = .0212**		*P* = .3529		*P* = .7446		*P* > .9999	
Female	80 (82.5%)	17 (17.5%)	61 (62.9%)	36 (37.1%)	69 (71.1%)	28 (28.9%)	51 (53.1%)	45 (46.9%)	71 (73.2%)	26 (26.8%)
Male	54 (87.1%)	8 (12.9%)	50 (80.6%)	12 (19.4%)	49 (79.0%)	13 (21.0%)	35 (56.5%)	27 (43.5%)	45 (72.6%)	17 (27.4%)
Religion	*P* = .4501		*P* = .2495		***P* = .0042**		*P* = .1930		*P* = .3766	
Christian	117 (87.3%)	17 (12.7%)	96 (71.6%)	38 (28.4%)	106 (79.1%)	28 (20.9%)	74 (55.6%)	59 (44.4%)	99 (73.9%)	35 (26.1%)
Other	13 (81.3%)	3 (18.8%)	9 (56.3%)	7 (43.8%)	7 (43.8%)	9 (56.3%)	6 (37.5%)	10 (62.5%)	10 (62.5%)	6 (37.5%)

	Prayer		Relaxation		Special Diet		Yoga	
	n (%)		n (%)		n (%)		n (%)	
	No	Yes	No	Yes	No	Yes	No	Yes
Education	*P* = .3806		***P* = .0245**		*P* > .9999		*P* = .7357	
Grade 8 or less	3 (21.4%)	11 (78.6%)	10 (71.4%)	4 (28.6%)	9 (64.3%)	5 (35.7%)	12 (85.7%)	2 (14.3%)
Some high school or more	16 (11.2%)	127 (88.8%)	56 (39.2%)	87 (60.8%)	92 (64.3%)	51 (35.7%)	112 (78.3%)	31 (21.7%)
Ethnicity	*P* = .5957		***P* = .0315**		*P* > .9999		*P* = .6569	
Latino	4 (9.3%)	39 (90.7%)	24 (55.8%)	19 (44.2%)	28 (65.1%)	15 (34.9%)	33 (76.7%)	10 (23.3%)
Non-Hispanic	15 (13.0%)	100 (87.0%)	42 (36.5%)	73 (63.5%)	75 (65.2%)	40 (34.8%)	93 (80.9%)	22 (19.1%)
Race	*P* = .0677		***P* = .0226**[b]		*P* = .6357		*P* = .0640	
Asian	1 (14.3%)	6 (85.7%)	1 (14.3%)	6 (85.7%)	4 (57.1%)	3 (42.9%)	4 (57.1%)	3 (42.9%)
African American	4 (6.2%)	61 (93.8%)	20 (30.8%)	45 (69.2%)	42 (64.6%)	23 (35.4%)	56 (86.2%)	9 (13.8%)
White	14 (18.9%)	60 (81.1%)	37 (50.0%)	37 (50.0%)	52 (70.3%)	22 (29.7%)	55 (74.3%)	19 (25.7%)
Religion	*P* = .6468		*P* = .7910		*P* = .2678		***P* = .0043**	
Christian	12 (9.0%)	122 (91.0%)	53 (39.6%)	81 (60.4%)	89 (66.4%)	45 (33.6%)	112 (83.6%)	22 (16.4%)
Other	2 (12.5%)	14 (87.5%)	7 (43.8%)	9 (56.3%)	8 (50.0%)	8 (50.0%)	8 (50.0%)	8 (50.0%)

[a]Values in boldface indicate statistical significance ($P < .05$).
[b]Relaxation: Asian versus African American $P = .6651$; Asian versus White $P = .1137$; African American versus White **$P = .0253$**.

A unique aspect of our study was the inquiry into patients' interest in using CAM therapies if made available to them. While we do not have other studies against which to compare our results on this question, it is noteworthy that patients' responses reflected an unequivocally high level of interest in utilizing nearly all therapies, in particular, prayer, massage, relaxation, herb use, aromatherapy, and special diet. Interest in meditation, yoga, and acupuncture was also high. These results corroborate with the overall trend toward the increasing utilization of CAM in oncology patients.[2,3,5,7]

Consistent with data from a large study[23] verifying that patients often do not know or cannot specify a reason for taking herbs and supplements, our results suggest that patients indeed experience challenges in the self-administration of CAM. As an example, a significant percentage of our sample indicated that lack of adequate knowledge was a deterrent to the proper use of therapies such as herbs and acupuncture, and others indicated that cost was an additional deterrent to the use of certain therapies (special diet, aromatherapy, herbs, massage, and yoga). These results have important implications. First, they underscore patients' need for guidance with respect to the safe use of therapies that they wish to use for symptom control or other quality of life benefits. Second, they draw attention to the fact that in a patient population such as ours with an average household income of less than $10 000/year, cost is a significant impediment to safe CAM use. Previous studies indicate that cost is an impediment to the effective use of CAM; higher incomes are a consistent predictor of higher CAM utilization.[14,16]

Correlates of CAM use have previously been shown to be female gender, younger age, higher educational background, and non–African American/non-Hispanic race.[14-16,24] Age and income level were relatively constant in our study; therefore, there were no significant differences in proportions of CAM users by these factors. However, consistent with previous studies,[14-16] female gender and higher education were associated with higher use of certain therapies (aromatherapy and relaxation, respectively). A study by Lee at al. reported that type of CAM use may vary to some degree by ethnicity.[19] In this study, African American women reported using more spiritual healing (36%); Chinese women, more herbal therapies (22%), and Latino women, more dietary therapies (30%) relative to other CAM types. Our sample was not conducive to a similar comparison; however, with respect to ethnicity, our results indicate that CAM use varied primarily with regard to use of relaxation.

Non-Hispanics made significantly higher use of relaxation relative to Hispanics, and the same was true for African Americans relative to White patients. These data are corroborated by a recent study on stress management and relaxation technique (SMART) use among underserved patients being treated at an inner-city hospital.[25] While relaxation in our study was defined as any method, process, procedure, or activity that helps a person to relax and reverse the effects of stress; SMART refers similarly but more inclusively to mind-body therapies such as yoga, deep breathing, and meditation as well as other modalities which essentially promote relaxation. Analogous to our results, this study found that Non-Hispanic patients were more likely than other race/ethnic groups to use SMART, but overall among all racial groups, those with lower socioeconomic status (SES), work disability, or depression were more likely to use SMART.[25] This may help explain to some extent the higher use of relaxation also among African American patients in our sample who report themselves to be in the lower SES category. Thus, higher relaxation use in non-Hispanics and African American patients as reported in our sample may in part be due to stress-related factors in these patient groups such as perceived or actual lower SES, but we do not have specific data on other important factors that may mediate this relationship such as patients' work disability status, depression status, etc. More research is needed to determine definitively the factors that may mediate (both promote or impede) relaxation use, and these may also include other social or cultural variables that were not assessed in the current study.

Finally, with regard to factors predicting the use of CAM in racially diverse patients, another study by Alferi et al[17] used a multiethnic sample of breast cancer patients and reported that African American women were significantly more likely to use spiritual healing as well as herbal therapies relative to Hispanic or non-Hispanic White patients. Again, our study did not suggest similar associations; however, patients who professed a religion other than Christian indicated a higher use of herbal therapy and yoga. These results, however, are not generalizable due to the small cell size for patients in the non-Christian categories in our sample. In general, we acknowledge the sparseness of our data as a whole and that these results may not be generalizable.

Conclusions and Implications

Our data confirm that CAM use among minority and medically underserved oncology patients is significant, and patients' interest levels in utilizing CAM therapies, if made available, is high. Previous studies suggest that oncology patients in general perceive CAM as a means that gives them a sense of control in actively managing their disease, reducing distress, and improving their quality of life.[2,22] These reasons may hold equally true for our patients. Yet, as alluded to earlier in our results, impediments to safe and effective CAM use remain.

Several studies have reported that the medically unguided use of herbal or other CAM medications can interfere with conventional oncologic management via negative interactions between such agents and physician-prescribed drugs.[8,23,26] Valid concerns also exist in light of the fact that dietary supplements in the United States are not regulated

or standardized; thus, their use may be dangerous in the oncology setting.[10] Cost-related issues may further result in patients' use of dietary or herbal therapies of questionable value.

The key issue with respect to the utilization of CAM, especially in the setting under discussion, remains one of medically guided versus random use. It is evident both from previous studies of CAM use in minority patients, as well as from the current study, that patients will continue to use CAM due its many perceived benefits, although most will not report such use to their oncology teams.[13,27] This fact alone necessitates that consideration be given to the thoughtful integration of safe, evidence-based CAM therapies with conventional treatments that are known to improve patients' symptoms and quality of life. As an example, professional nutritional guidance while undergoing chemotherapy or other invasive treatment may safely improve patients' sense of well-being. If resources can be allocated, patients may also benefit from the provision of those CAM modalities for which substantial evidence for symptom control exists from randomized trials such as massage,[28] relaxation,[29] and yoga.[30,31] In the absence of such integration under proper physician guidance, patients may choose costly, ineffective, and even harmful therapies when well-researched and more economical alternatives exist.

Notwithstanding these recommendations, investigation of CAM use in medically underserved oncology patients remains an area of research that needs significant further study for the application of more targeted approaches. The current study had limitations; these included its cross-sectional design, relatively small sample size, which in turn yielded small cell counts, and use of a new survey instrument. Small cell counts, particularly those less than 10, might underestimate true margin of error and might render the results less generalizable to other study populations. Additionally, while we believe that only a few patients who were approached declined to participate in the study, this number was not counted; thus, selection bias (in this case, selective participation of those with potential knowledge/use of CAM) is a critical limitation. Finally, we were unable to investigate other critical associations such as CAM use by type of cancer, disease status (early vs. advanced disease) or similar clinical variables. Future studies in this patient population should explore these associations, and incorporate longitudinal study designs with larger samples in order to yield more generalizable results.

In spite of the above limitations, the high use of CAM evidenced in our sample, and the analogously high interest expressed in the use of CAM therapies if made available, are indicative of the medically underserved patient's need and effort to acquire more holistic cancer care. This expressed need presents an opportunity for oncologists to engage with patients in a therapeutic relationship that is open to effective communication in regard to their CAM use. Such an engagement would require that even those physicians who have no prior training in CAM be willing to provide patients with guidance based on an evidence-based review of CAM therapies, when needed. As CAM use is not a transient phenomenon, and has the potential to significantly affect clinical outcomes, informing patients about the possible contraindications or benefits of specific therapies becomes obligatory on the part of oncology care teams. It is evident from the current study as well as previous studies that not only the physiological, but also the psychological, and even the spiritual dimensions of patient care cannot be ignored, and medically underserved patients—as with other cancer patients—are seeking a well-integrated model of oncology care.

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Declaration of Conflicting Interests

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