




The Influence of Spirituality and Religiosity on US Oncologists' Personal Use of and Clinical Practices Regarding Complementary and Alternative Medicine

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Abstract

Background: Cancer patients frequently use complementary and alternative medicine (CAM), and spirituality has been associated with CAM use among patients. We evaluated how oncologists' spirituality and religiosity are associated with personal use and patient recommendations for CAM. **Methods:** A survey was mailed to 1000 medical oncologists in the United States. The questionnaire asked about oncologists' approaches to CAM use by patients, focusing on the use of herbs and supplement (HS), and about religiosity and spirituality. **Results:** Of 937 deliverable questionnaires, 392 were returned (response rate 42%). Respondents were mostly men (71%) and Caucasian (76%), with a median age of 48. Approximately 16% reported no religion, 19% Jewish, 24% Catholic, 28% Christian, and 13% other religions. Eighteen percent reported attending religious services at least once a week, including 15% who attend several times per week. Twenty-eight percent reported high theological pluralism (skepticism regarding whether one religion is comprehensively and uniquely true); 58% described themselves as moderately or very spiritual. Self-reported spirituality and religious service attendance were associated with using CAM personally and recommending HS to patients. In multivariate analyses, moderate-high spirituality and attending religious services less than monthly was positively associated with personal use of CAM: odds ratio (OR) = 3.10 (confidence interval [CI] = 1.5-6.5) and OR = 3.04 (CI = 1.5-6.6), respectively. Physicians with moderate to high spirituality were more likely to report recommending CAM in general (OR = 3.07, CI = 1.3-7.1), but less likely to report recommending HS (OR = 0.33, CI = 0.14-0.75). **Conclusion:** Self-reported spirituality is a significant factor among US oncologists' decision to use CAM and recommend CAM to patients.

Keywords

integrative medicine, spirituality, religion, medical oncology, dietary supplements, herbs, complementary therapies

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Introduction

The National Center for Complementary and Integrative Health (NCCIH) defines complementary and alternative medicine (CAM) as “health care approaches developed outside of mainstream Western, or conventional medicine,” and it defines integrative medicine as bringing “conventional and complementary approaches together in a coordinated way”.¹ CAM commonly refers to a variety of therapies including mind-body (eg, meditation), body manipulation

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(eg, massage), alternative medical systems (eg, traditional Chinese medicine), as well as the ingestion of herbs and supplements (HS). Many patients use CAM while undergoing cancer treatment, with recent reports as high as 87% of cancer patients using CAM within the previous 12 months.²⁻⁵ Although many providers report discussing CAM with patients as part of their professional responsibility, not all providers do so.⁶

How medical oncologists address the use of CAM by cancer patients has been explored by a large, national study by Lee et al⁷ that examined the attitudes, knowledge, and practice patterns of oncologists regarding HS. Results demonstrated that lack of knowledge, gender, and age were associated with different attitudes and practice patterns regarding patients' use of HS. Included in the survey were measures of religiosity and spirituality because physicians' religious and spiritual beliefs have been shown to influence not only their personal use of CAM, but also their willingness to integrate CAM interventions into their patients' treatment plans.⁸ Studies among patients have reported similar findings regarding the influence of religion and spirituality on the decision to utilize CAM.^{9,10} Since providers' personal beliefs regarding religion and spirituality may influence their likelihood of discussing CAM with patients, there is a need to further understand how these factors may be important in cancer care. We hypothesized that oncologists' religiosity and spirituality will be associated with their personal use of CAM and recommending CAM to patients.

Methods

The details of the methodology have previously been published.⁷ Briefly, the study used a random sample of American Society for Clinical Oncology (ASCO) members to explore oncologists' attitudes, knowledge, and practice patterns about HS by patients.⁷ One thousand contacts were randomly selected from the 2008 ASCO membership directory who listed their specialty as medical oncology or medical oncology/hematology, which represents ~5% of medical oncology members. An initial mailing notified them that an email would be sent asking for their participation in this study, and it included a \$5 gift card as survey incentive. Approximately a week later, an email was sent to all subjects that included a unique URL link to a confidential web-based questionnaire. Brief email reminders were sent to nonresponders on a weekly basis for up to 8 weeks. In addition, those subjects who had not responded by the end of the fourth week were mailed a paper version of the questionnaire with a self-addressed stamped return envelope. Subjects were considered eligible if their questionnaire was not returned undeliverable and if they reported actively practicing medical oncology/hematology. This study was

approved by the University of Chicago's Institutional Review Board.

Questionnaire

The questionnaire was initially constructed by 2 of the authors (RTL and FA), and later the wording was refined by a focus group consisting of oncologists. Participants provided demographic information (ie, age, sex, practice setting, and race). Questions related to CAM included estimating the percentage of times oncologists initiated discussions about HS, recommended or supported the use of HS, discouraged the use of HS, or neither recommended nor discouraged the use of HS. Participants were also asked whether participants had ever recommended to patients alternative medical systems (eg, traditional Chinese medicine), mind-body therapies (eg, meditation, yoga), body manipulation (eg, chiropractic or osteopathic medicine, massage), energy therapies (eg, qi gong, reiki, therapeutic touch, magnetic fields), or other CAM therapies. Finally, oncologists' personal use of CAM was also ascertained.

Religion is generally considered an organized system of beliefs about the meaning of life shared among a group of people, while spirituality is focused on an individual's beliefs and practices as it relates to the meaning of life. To explore these areas, 4 questions regarding religiosity and spirituality were included and primarily based on a previous survey examining physicians' opinions about CAM that incorporated these validated measures.^{8,11} The first 2 questions asked about religious affiliation (ie, Buddhist, Hindu, Jewish, Muslim, Roman Catholic, Eastern Orthodox, Protestant, other Christian, and other religion, none) and how often one attends religious services. Theological pluralism, or skepticism regarding whether one religion is the only true religion, was determined by participants level of agreement with the following statements: "There is one religion," "Different religions have different versions of the truth and each may be equally right in its own way," and "There is no one, true, right religion." The higher the score on these 3 statements, the more the provider endorsed theological pluralism. Last, participants also self-reported their spirituality from "very spiritual" to "not at all spiritual."

Statistical Analysis

All data were coded and checked for errors by the principal investigator. Missing and ambiguous responses were excluded from analysis. Descriptive statistics were used to summarize oncologist characteristics and outcome variables. Chi-square tests were performed to explore associations between oncologist characteristics and CAM practice patterns, personal use, and recommendations to patients.¹² Multivariable logistic regression models were used to determine whether associations persisted after controlling for

demographics and other relevant predictors.¹³ Age, gender, race, and education about HS were used in the model because of their significance based on previous studies.¹⁴ We examined associations with religiosity (attendance <1×/month and Christian religion) and spirituality (moderately to highly spiritual), and these are presented as adjusted odds ratios (ORs) and 95% confidence intervals (CIs). All statistical analyses were done using SAS 9.3 (SAS Institute, Inc) and STATA 11.0 (StataCorp LP).

Results

Of 937 deliverable questionnaires, 392 were returned for a response rate of 42%. Respondents were mostly men (71%), Caucasian (76%), and had a median age of 48 years (SD = 9.8). Approximately 16% of respondents reported no religious affiliation, 19% were Jewish, 24% were Catholic, 28% were another type of Christian, and 13% were another type of religion (see Table 1). Regarding frequency of religious service attendance, about half of participants reported attending religious services at least once per month including 15% who attend several times per week. Twenty-eight percent reported high theological pluralism. Oncologists most frequently reported that they were moderately spiritual (43%), followed by slightly spiritual (29%), very spiritual (15%), and not at all spiritual (13%). Of note, the proportion of participants who completed the 4 religion and spirituality questions was slightly lower than for other questions in the survey, especially the question regarding the frequency of attending religious services (86% responded). A majority of subjects (96%) completed 3 or more of these religiosity and spirituality items.

Participants reported, on average, that they spoke to 41% of their patients about HS but only one fourth of CAM discussions were initiated by the physician. Thirty-four percent of respondents reported personal use of CAM, specifically 23% mind-body therapies, 15% body manipulation, 5% energy therapies, 2% using alternative medical systems, and 4% some other form of CAM therapy. More than 9 out of 10 (92%) reported that they have recommended HS to their patients: 63% had recommended mind-body therapies, 44% body manipulation, 40% acupuncture, 16% alternative medical systems, 15% energy therapies, and 9% other forms of CAM.

Influence of Religiosity and Spirituality on Personal Use of CAM and Practice Patterns (Communication and Recommending CAM)

Physicians who attended religious services once a month or more often were less likely to report using CAM personally (29% vs 44%, $P < .01$) compared with less than once a month. In contrast, those who reported being moderately or

Table 1. Respondent Demographics.

Characteristic	N	%
Race		
Black	7	1.8
Hispanic	21	5.4
East Asian or Pacific Islander	30	7.7
South Asian or Indian	41	10.5
White	275	70.2
Other	9	2.3
Age, years		
<40	67	17.1
40-49	86	21.9
50-59	82	20.9
>60	45	11.5
Sex		
Male	277	70.7
Female	111	28.3
Religious affiliation		
None	62	16.2
Jewish	74	19.3
Catholic	91	23.7
Other Christian	106	27.6
Other religion	51	13.3
Frequency of religious service attendance		
Never or less than once a year	61	18
Once to several times a year	109	32.2
1 to 3 times a month	70	20.6
Every week or nearly every week	48	14.1
Several times a week	51	15.0
Self-rating of spirituality		
Very spiritual	57	15
Moderately spiritual	165	43
Slightly spiritual	110	29
Not at all spiritual	49	13

very spiritual were more likely to use CAM personally (43% vs 23%, $P < .001$), and recommend one or more types of CAM to patients (89% vs 79%, $P = .015$) as compared with those reporting no or slightly spiritual. The type of CAM most associated with this finding was mind-body therapies such as meditation. With regard to recommending HS, moderately or very spiritual physicians were less likely to recommend the use of HS than their counterparts (62% vs 73%, $P = .022$). Neither religious affiliation nor theological pluralism was associated with personal use of CAM, discussing HS, or recommending CAM (including HS) to patients.

Multivariable Analyses

In multivariable analyses, higher spirituality (moderate to very) remained a significant predictor of personal CAM use (OR = 3.2, CI = 1.5-6.6), recommending CAM to patients

Table 2. Multivariable Analysis of CAM and HS Use, Recommendation, and Discussion.

Predictor	Personal use of CAM, OR (95% CI)	Initiate HS discussion, OR (95% CI)	Recommend HS, OR (95% CI)	Recommend CAM, OR (95% CI)
Age (≥ 48 vs < 48)	1.83 (0.91-3.70)	0.95 (0.48-1.86)	0.64 (0.31-1.30)	0.73 (0.33-1.62)
Race (White vs non-White)	0.32* (0.15-0.68)	2.36* (1.15-4.83)	1.11 (0.51-2.44)	0.91 (0.38-2.18)
Gender (female vs male)	5.60* (2.73-11.5)	1.96 (0.93-4.15)	0.54 (0.27-1.09)	2.61* (1.03-6.57)
Education (HS education vs no HS education)	2.62* (1.36-5.03)	4.80* (2.28-10.10)	0.62 (0.32-1.20)	3.30* (1.43-7.62)
Practice category (academic vs nonacademic)	0.73 (0.36-1.46)	0.99 (0.50-1.96)	1.08 (0.53-2.19)	1.05 (0.48-2.33)
Religious service attendance ($< 1 \times$ per month vs $1 \times +$ per month)	3.04* (1.54-6.59)	1.23 (0.62-2.45)	1.44 (0.71-2.92)	2.18 (0.95-4.97)
Spirituality (moderate/very spiritual vs slightly/not at all spiritual)	3.10* (1.47-6.54)	1.55 (0.77-3.10)	0.33* (0.14-0.75)	3.07* (1.33-7.06)
Religion (Christian vs other)	1.04 (0.52-2.09)	0.069 (0.35-1.39)	1.13 (0.55-2.35)	0.52 (0.23-1.2)

Abbreviations: CAM, complementary and alternative medicine; HS, herbs and supplements; OR, odds ratio; CI, confidence interval.

* $P < .05$.

(OR = 2.8, CI = 1.3-6.3), and increased personal use of mind-body therapies (OR = 3.9, CI = 1.7-9.0). Higher spirituality was inversely associated, however, with recommending HS to patients (OR = 0.34, CI = 0.15-0.77). Less frequent attendance at religious services was associated with higher personal use of CAM (OR = 0.33, CI = 0.17-0.65). Females were less likely than males to use CAM personally (OR = 5.60, CI = 2.73-11.5) and to recommend it to patients (OR = 2.61, CI = 1.03-6.57), while having education about HS as compared with no education was positively associated with personal use of CAM (OR = 2.62, CI = 1.36-5.03), initiating a discussion about HS (OR = 4.80, CI = 2.28-10.10), and recommending CAM to patients (OR = 3.30, CI = 1.43-7.62; see Table 2). There were no independent associations between age or religious affiliation and personal use of CAM, starting a discussion with patients about HS, recommending HS to patients, or CAM in general.

Discussion

This is the first study to report on the association of religion and spirituality on oncologists' use or recommendation to patients about CAM including HS. This study found that religiosity (as measured by attendance to religious services) and self-reported spirituality among oncologists are associated with personal use of CAM, recommending CAM to patients, and specifically recommending HS. Interestingly, in multivariate analysis, self-report of being moderate to very spiritual increases the chance of personal CAM use and recommending CAM (especially mind-body therapies such as yoga) to patients, but it was also associated with decreased likelihood to recommend HS to patients.

Only a few studies have evaluated religiosity and spirituality among physicians in general and how these may influence their practice. Curlin et al⁸ found that general internists and rheumatologists who were more spiritual were also more likely to integrate CAM interventions into their patient

treatment plans. Whereas physicians' religiosity did not appear to affect CAM practice in a multivariate model that included spirituality. A small study of physicians in Puerto Rico also found a similar trend of higher self-reported spirituality being associated with a higher likelihood of integrating CAM therapies into their practice.¹⁵

The present study has similarities and differences with studies that have evaluated patients' religiosity and spirituality with the use of CAM. Several published studies among cancer patients have also found that increased spirituality is associated with an increased likelihood of utilizing CAM therapies.^{10,16-18} Patients who reported CAM use rated themselves as having higher spirituality and also expressed more expectations of their providers to provide CAM counseling.¹⁸ A national study of breast cancer patients in Denmark found that those who reported a higher degree of faith were more frequent users of CAM compared with non-believers.¹⁹ Similarly, a study of cancer survivors in California found that those who self-reported being moderate-very spiritual were more likely to use "nonreligious/spiritual" forms of CAM; however, those who self-reported being moderate-very religious were less likely to use "non-religious/spiritual" forms of CAM.¹⁰ This later finding has not always been consistent as a study among men in Australia found that actively practicing religion was associated with an increased use of CAM.²⁰ In general, these findings indicate that spirituality might be a better predictor of CAM use than religiosity and more in line with the results from the current study. These differences regarding religiosity are likely related to sociocultural issues specific to each geographic region as many of these studies come from different countries as well as possibly due to different instruments utilized to assess religiosity. An important question remains as to whether or not religiosity affects physicians and patients differently and will need to be explored further in future studies. Future studies should also aim to further define categories of CAM as these therapies

represent a spectrum of approaches. Our study as well as the study by Hsiao et al¹⁰ indicate that patients and physicians do not view all CAM therapies equally.

Several key factors may influence a physicians' decision to recommend CAM to patients or even integrate CAM therapies as part of their practice. These factors include gender, age, knowledge about CAM therapies, and now possibly spirituality. A parallel situation could be considered—for example, several states have laws called “conscience clauses,” which allow physicians to refuse to recommend or perform procedures based on religious beliefs. The literature suggests physicians are less likely to present all options or refer when they had conflicting beliefs toward its use.²¹ The same might be said about CAM, but CAM has an additional layer of complexity due to the variety of different therapies. For instance, physicians may have strong feelings about specific CAM practices such as yoga or meditation because of the potential religious associations with these types of practices. Yoga and meditation have been studied in clinical trials within a nonreligious context and shown to provide benefits for cancer patients.²² However, if oncologists' personal factors, such as their spiritual and religious beliefs, are interfering with this discussion, appropriate patient care may be at risk as well as patient satisfaction. Oncologists are encouraged to be aware of their own personal biases and discuss this topic with their patients, even if their personal religious or spiritual beliefs may dismiss the benefits of CAM. Should oncologists gain personal insight into any biases they may have, they may be more willing to address these biases and adjust them in order to benefit patient care.

Although this study presents important information about the potential impact of religiosity and spirituality on oncologists' use and recommendations of CAM, it is not without its limitations. Although analyses were carried out in a fairly large sample of US oncologists ($n = 392$), the study's response rate was lower than hoped for at 42%. The possibility of a response bias exists and makes these findings preliminary, requiring further validation. However, this is a reasonable response rate based on survey research among physicians. Additionally, there was a decreased response for questions regarding religion and spirituality as some respondents felt that these questions were inappropriate. Further studies are needed to explore in detail the specific role of spirituality and religiosity in the use of CAM and HS and the impact of these in the clinician's quality of life and the decision-making process for recommending CAM. Other areas of research should include sociocultural and community factors that may influence physician practice patterns.

Despite the above-mentioned limitations, the results make a number of contributions in advancing the understanding of oncologists' personal beliefs on their practice of CAM. Although research has identified different predictors for initiating discussion and recommending CAM, it is

important to also consider the influence of religion and spirituality and how it may affect oncologists' practice patterns. Growing research has shown the benefits of different CAM therapies, and oncologists should aim to minimize personal biases that may interfere with the incorporation of these beneficial therapies.

Authors' Note

All authors have read and approved the article. The study was conducted as part of an institutional review board–approved protocol.

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Declaration of Conflicting Interests


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