Complementary and Alternative Medical Therapy Use Among Chinese and Vietnamese Americans: Prevalence, Associated Factors, and Effects of Patient–Clinician Communication

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Objective. We examined the use of complementary and alternative medical (CAM) therapies among Chinese and Vietnamese Americans who had limited proficiency with the English language and explore the association between patient–clinician discussions about CAM therapy use and patient assessments of quality of care.

Methods. We surveyed Chinese and Vietnamese Americans who visited 11 community health centers in 8 major cities throughout the United States.

Results. Of the 4410 patients surveyed, 3258 (74%) returned completed questionnaires. Two thirds of respondents reported they had "ever used" some form of CAM therapy; however, only 7.6% of these patients had discussed their use of CAM therapies with clinicians. Among patients who had used CAM therapies during the week before their most recent visits, clinician–patient discussions about CAM therapy use were associated with better overall patient ratings of quality of care.

Conclusion. Use of CAM therapies was common among Chinese and Vietnamese Americans who had limited proficiency with the English language. Although discussions about CAM therapy use with clinicians were uncommon, these discussions were associated with better ratings of quality of care. (*Am J Public Health.* 2006;96:647–653. doi:10.2105/AJPH.2004.048496)

In 2000, there were 11.9 million Asian Americans—4.2% of the total population—living in the United States.[1] This figure is projected to triple to 41 million, or 10.7% of the total US population, by the year 2050.[2] Today, two thirds of Asian Americans are foreign born, and two thirds speak primary languages other than English.[3] Approximately 35% of the population is linguistically isolated, which is defined as living in households where no one speaks English well.[4]

Few studies have evaluated the health outcomes and preferences of Asian Americans, particularly those who have limited proficiency with the English language.[5–8] Nonetheless, several surveys have shown that Asian Americans are more dissatisfied with the health care they receive compared with White Americans. They seek health care the least, they are more likely to be uninsured, and they report the poorest ratings for interpersonal relationships with their physicians.[9–13]

The reasons for dissatisfaction include language barriers and difficulties with access to comprehensive health care. Additionally, Asian Americans have divergent views of health and illness. Many Asian medical practices differ from standard Western approaches. Health care providers' failure to inquire, understand, or accept traditional medical practices may adversely affect the Asian American clinical experience and, thus, reports about quality of care. Our qualitative work suggests that immigrant Chinese and Vietnamese Americans commonly use complementary and alternative medical (CAM) therapies and that discussions with clinicians about CAM therapy use may be an important element of quality of care.[14]

In this context, we sought to examine CAM therapy use among 2 largely immigrant Asian American populations—Chinese Americans and Vietnamese Americans. We defined CAM therapies as the nonprescription, traditional Asian therapies commonly used by these populations.[15] We were interested in the prevalence of CAM therapy use, its associated factors, and the association between patient–clinician communication about CAM therapy use and patient ratings of quality of care. We hypothesized that (1) CAM therapy use is common among these Asian American groups, (2) use differs between racial/ethnic groups, and (3) patient–clinician communication about CAM use is associated with higher ratings of care.

METHODS

Data Source

We mailed surveys to Chinese and Vietnamese Americans who had visited 1 of 11 community health centers within the past 30 days. The community health centers were located across the United States in 8 urban settings near Chinese and Vietnamese communities: Los Angeles and Oakland, Calif; Seattle, Wash; Chicago, Ill; Houston, Tex; New York City; and Worcester and Boston, Mass. In Boston and Chicago, we surveyed patients from 2 community health centers—one that served mainly Chinese Americans and another that served mainly Vietnamese Americans—because the 2 racial/ethnic communities were geographically separate. Conversely, community health centers in Oakland and Seattle were, in general, larger and served both Chinese and Vietnamese Americans. These 11 centers represented a convenience sample of clinics that were identified by the Association of Asian Pacific Community Health Organizations, a national association that represents community health organizations dedicated to improving the health status and access to care of Asian American

TABLE 1—Characteristics of Respondents By Language

	Mandarin (n = 678)	Cantonese (n = 1121)	Vietnamese (n = 1292)	*P*
	Demographics			
Gender				
Male, %	32	33	33	.88
Mean age, y (SD)	52.9 (18.1)	53.5 (16.4)	48.9 (14.9)	0.13
Education level				
≤9 y, %	44	63	58	<.01
Marital status				
Married, %	76	74	70	<.01
Mean years living in United States (SD)	8.4 (7.2)	12.6 (9.4)	9.2 (6.6)	.01
Proficiency speaking English				
Not well or not at all, %	92	92	88	.10
Proficiency reading English				
Not well or not at all, %	89	91	87	.04
Region				
West, %	37	59	36	<.01
East, %	61	33	35	
South, %	0	0	18	
Midwest, %	2	7	11	
	Health issues			
Perception of own health				
Fair or poor, %	49	46	60	<.01
Number of health center visits during the past year				
≥5 clinic visits, %	47	42	54	<.01
Overall ratings of care				
Fair or poor, %	20	23	8	<.01

Note. One hundred sixty-seven patients who primarily spoke English or other languages and dialects were excluded from the analysis.

Pacific Islanders within the United States. The mailed surveys were followed up with telephone reminder calls; patients were called up to 10 times if their surveys were not completed.

The survey examined important aspects of care from the perspective of Chinese and Vietnamese Americans who had limited proficiency with the English language. The mailed survey was printed in 2 languages: English and the patient's native language or dialect (Vietnamese, Cantonese-Chinese, or Mandarin-Chinese). There were 81 questions about demographics, self-perceived health status, experiences with the patient's specific health center, and use and discussions about CAM therapies (Table 1).

We designed the survey to be a culturally sensitive, patient-centered instrument: focus groups identified important domains of health care from the perspective of the study population, cognitive interviews performed by trained interviewers evaluated the survey questions, and a pilot study assessed the feasibility of survey administration and data collection from the study population. Details about survey development have been published elsewhere.[14,16,17]

We informed patients that the surveys were confidential and would not be given to their physicians or health centers. We also informed them that their decisions about whether or not to answer the questionnaire would not affect the health care they received. We included a $5 incentive and the opportunity to win a $500 prize. The surveys were mailed between November 2001 and March 2002; bilingual staff from the Center for Survey Research at the University of Massachusetts–Boston made telephone reminder calls 2 weeks after the surveys were mailed.

Use of CAM Therapies

CAM therapies are defined as "a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine."[18] In our survey, we focused on CAM therapies that were previously identified by focus groups as therapies commonly used by our study populations.[14] The survey included 3 questions about patterns of CAM therapy use: (1) "Have you *ever* used any of the following medical treatments? Herbal medicine in natural form, herbal medicines in pill form, acupuncture, acupressure, coining (Southeast Asian therapy of rubbing a coin and menthol oil on a patient's spine and ribs),[18] cupping (the use of cups to apply suction to the skin by means of heat),[18] tai chi, qigong (a component of traditional Chinese medicine that combines movement, meditation, and regulation of breathing to enhance the flow of vital energy),[18] massage, or something else." (2) "Did you use any Asian medicine (the term most readily identified by Vietnamese and Chinese Americans for non-Western CAM therapies) in *the week before* your most recent visit?" (3) "How often have you used *both* western medicine and Asian medicine in the same week for the same illness (never, sometimes, usually, or always)?"

Patients were considered to have used CAM therapies if (1) they had *ever* used CAM, i.e., they had used any of the alternative therapies listed; (2) they had used CAM therapy during *the week before* their most recent health center visit (yes/no); and (3) they had used *both* CAM therapy and conventional medicine simultaneously during the same week to treat the same illness (never vs sometimes, usually, or always). For specific CAM therapies, herbal medicine in pill form and herbal medicine in natural form were grouped into herbal therapies, acupuncture and acupressure were grouped into acupuncture therapies, and tai chi and qigong were grouped together into exercise therapies.

There were 2 questions regarding discussion about CAM therapy use: "During the *most recent visit*, did your doctor or nurse discuss your use of Asian medicine with

TABLE 2—Multivariable Analysis of Factors Independently Associated With Complementary and Alternative Medical (CAM) Therapy Use

	Ever Used CAM Therapies, OR (95% CI)	Used CAM Therapy During Week Before Most Recent Health Center Visit, OR (95% CI)
Demographics[a]		
Gender		
Male	1.00	1.00
Female	1.02 (0.79, 1.33)	0.95 (0.68, 1.34)
Age		
≤50, y	1.00	1.00
>50, y	0.89 (0.69, 1.16)	1.15 (0.81, 1.62)
Years in United States		
≤10	1.00	1.00
11–20	1.12 (0.83, 1.50)	1.20 (0.83, 1.72)
>20	1.01 (0.69, 1.49)	1.44 (0.87, 2.38)
Primary language/dialect		
Mandarin Chinese	1.00	1.00
Cantonese Chinese	1.70 (1.25, 2.31)[b]	2.07 (1.38, 3.09)[b]
Vietnamese	1.44 (1.08, 1.91)[b]	2.19 (1.47, 3.25)[b]
Education level		
≤9 y	1.00	1.00
>9 y	1.27 (0.97, 1.65)	0.71 (0.51, 1.00)[c]
Marital status		
Unmarried	1.00	1.00
Married	0.96 (0.71, 1.29)	1.32 (0.92, 1.90)
Proficiency speaking English		
Speaks well or very well	1.00	1.00
Speaks not well or not at all	0.81 (0.54, 1.21)	1.76 (0.99, 3.13)
Region		
East	1.00	1.00
West	1.50 (1.16, 1.95)[c]	1.02 (0.73, 1.42)
South	1.24 (0.89, 1.73)[c]	0.95 (0.62, 1.47)
Midwest	1.15 (0.85, 1.55)[c]	1.27 (0.86, 1.86)
Health issues		
Self-perception of health		
Excellent, very good, or good	1.00	1.00
Fair or poor	1.56 (1.20, 2.03)[b]	1.38 (1.00, 1.91)[c]
Number health center visits during past year		
<5	1.00	1.00
≥5	0.89 (0.63, 1.24)	1.06 (0.77, 1.47)
Satisfaction with care received		
Excellent, very good, or good	1.00	1.00
Fair or poor	0.89 (0.63, 1.24)	1.30 (0.86, 1.96)
Family availability[d]		
"No family here"	1.00	…
Family available	2.00 (1.15, 3.48)[c]	…
Needed care right away		
No	…	1.00
Yes	…	2.03 (1.46, 2.82)[b]
Main reason for health care visit		
Check up/follow-up	…	1.00
New illness	…	1.20 (0.74, 1.94)

Note. OR = odds ration; CI = confidence interval.
[a]Other variables that were tested but did not remain in either model included ability to see provider of choice (not difficult vs somewhat or very difficult) and availability of an interpreter (yes or no).
[b]$P < .05$.
[c]$P < .005$.
[d]Respondents either had family available to accompany them to the health center or had "no family here."

you?" and "Has anyone at this clinic *ever* talked with you about Asian medicine?"

Statistical Analysis

Because our study focused on CAM therapy use among Chinese and Vietnamese Americans, we excluded from our analyses a small minority of patients who spoke English (n=75) or other languages/dialects (n=92) as their primary language. We used language designation as a proxy for racial/ethnic group membership. We maintained the distinction between Mandarin Chinese and Cantonese Chinese because of sociodemographic differences between these 2 groups in the United States.[19] With bivariate analyses, we examined the association between CAM therapy use and primary language. Similar analyses examined the association between use of specific CAM therapies and primary language.

We used bivariate and multivariate analyses to examine the association between CAM therapy use and sociodemographic factors, health status, experiences with health care, and issues that are relevant to this population (e.g., self-rated proficiency with the English language, availability of an interpreter, and availability of family members to assist with health care) (Table 2). We used multivariate logistic regression to identify independent correlates of having ever used CAM therapy and use of CAM therapy during the past week. Backward elimination processes and Wald χ^2 tests were used to obtain significant correlates for the models. A bivariate P value of .20 or less was used for entry of a covariate in the model, and a multivariate P value of .05 or less was used to maintain the covariate in the model. We decided a priori to retain some variables of interest in the models regardless of bivariate or multivariate P values: sociodemographic factors (age, gender, marital status, education level, years in the United States, region, and primary language), self-rated proficiency with the English language, overall ratings of care at the health center, self-perceived health status, and the number of health center visits during the past year. Reason for most recent visit was included in the multivariate analysis of CAM therapy use during the week before the most recent visit. Other variables,

such as need for an interpreter, were entered in the model only if they reached statistical significance. For ease of data interpretability, the Mandarin-speaking group was used as the reference group for the logistic regression model, because CAM therapy use was least common among this group.

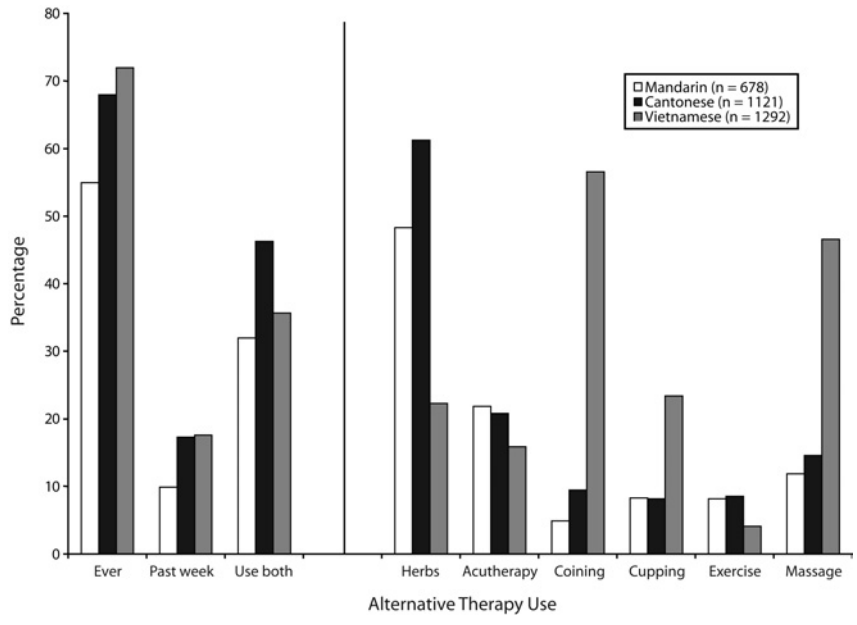
We used bivariate analyses to examine the association between discussions about CAM therapy use and primary language and the association between discussions about CAM therapy use and health care ratings. We used a stratified random sampling approach, with the primary sampling unit being the individual patient. The data were weighted for nonresponse, primary language, and health center site. All analyses were conducted with SUDAAN software, version 8.0 (Research Triangle Institute, Research Triangle Park, NC).

RESULTS

Of the 4410 surveys that were mailed, 3258 (74%) were completed and returned. Nearly all the respondents were foreign born—more than 99% for all language groups. A substantial majority of the population spoke little or no English—nearly 90% among all 3 groups. Approximately half of the respondents had less than 9 years of education, and about another half of the respondents perceived their own health to be fair or poor. There were significant differences in education, self-perceived health, and satisfaction with health care between respondents in the 3 language groups. In particular, Vietnamese Americans were significantly more likely to rate health as fair or poor, were more likely to visit the health center more often, and were more likely to be satisfied with their health care.

Overall CAM Therapy Use

Figure 1 shows the weighted frequency of CAM therapy use among the 3 language groups. The frequency of having ever used CAM therapies ranged from 55% to 72%, with the Vietnamese and Cantonese populations showing higher use compared with the Mandarin group. Use of CAM therapy during the week before the most recent health center visit ranged from 9.9% to 17.6%, with higher use among the Cantonese and Vietnamese groups. Cantonese patients used CAM therapy and conventional medicine simultaneously more frequently than the other 2 groups did.



Note. All differences in CAM therapy use were significant ($P < .0001$). For each CAM therapy, differences in frequency of use by language were significant ($P < .0001$).

FIGURE 1—Frequency of complementary and alternative medicine (CAM) therapy use by language.

Use of Specific CAM Therapies

Figure 1 shows the weighted frequency of any previous use of specific CAM therapies. Among the Mandarin and Cantonese groups, the most common therapies were herbal and acupuncture. Among the Vietnamese group, coining, massage, and cupping were used the most. All differences in specific use of CAM therapies among language groups were statistically significant overall (pair-wise comparisons were not performed to avoid multiple comparisons). Among respondents who used CAM therapies in the past, the lifetime mean number of different CAM therapies was 1.9, 1.8, and 2.4 for the Mandarin, Cantonese, and Vietnamese groups, respectively ($P < .0001$).

Factors Associated With Overall CAM Therapy Use

Table 2 shows the results of our multivariate regression analyses. Vietnamese and Cantonese respondents were more likely than Mandarin respondents to have ever used CAM therapies and to have used CAM therapies during the week before their most recent health center visit. Those who perceived their health status to be fair or poor also were more likely to have used CAM therapies. Respondents who lived in the western United States were more likely to have ever used CAM therapies. Those who needed care right away were more likely to have used CAM therapies during the week before their most recent health center visit. Age, years in the United States, proficiency with the English language, and satisfaction with health care had no association with CAM therapy use for both outcome measures.

Discussions About CAM Therapy Use

Despite the frequent use of CAM therapy among our study population, discussions about CAM therapy use with clinicians were infrequent. Less than 1 in 10 (7.6%) of the respondents who had ever used CAM therapy reported having discussions about CAM therapy

TABLE 3—Health Care Ratings of Respondents Who Did and Did Not Have Discussions About Complementary and Alternative Medical (CAM) Therapy During Their Most Recent Health Center Visit

Outcome	Discussion (n = 132)	No Discussion (n = 381)	*P*
Rating of care received during most recent visit			
Very good or excellent, %	65	36	<.01
Thoroughness of exam			
Yes, %	82	64	.01
Rating of physician during most recent visit			
Very good or excellent, %	70	46	<.01
Confidence and trust in physician			
Yes, %	80	54	<.01
Treated with respect and courtesy			
Yes, %	99	94	.03
Recommend the clinic to others			
Yes, %	73	51	<.01

use with someone at the health center in the past. Among respondents who had used CAM therapy during the week before their most recent health center visit, 26% reported discussions about CAM therapy use during their most recent health center visit. The frequency of patient–clinician discussions about CAM therapy use did not differ between the groups ($P>0.2$ for both any previous discussion and discussion during the most recent visit).

Association Between Discussions and Health Care Ratings

Among respondents who had used CAM therapies during the week before their most recent health center visit (n=513), those who had discussions about CAM therapy use during the most recent visit reported higher overall health care ratings for that visit (Table 3). Two thirds of respondents who had discussions about CAM therapy use during the most recent health center visit rated their most recent visit as excellent or very good compared with 36% of respondents who did not have discussions about CAM therapy use ($P=.0019$). Respondents who had discussions about CAM therapy use also were more likely to have (1) perceived the exam as thorough, (2) reported higher health care ratings of the most recent visit, (3) had more confidence and trust in the doctor, (4) felt that they were treated with respect and courtesy, and (5) recommended the health center to a family or friend ($P<.05$ for each comparison).

DISCUSSION

Use of CAM therapies was common among our study population. The majority of respondents (55%–72%) had used CAM therapy in the past, and 10% to 18% of respondents had used CAM therapy during the week before their most recent health center visit. The patterns of CAM therapy use were strongly influenced by race/ethnicity. Vietnamese Americans and Cantonese-speaking Chinese Americans tended to use CAM therapies more frequently than Mandarin-speaking Chinese Americans did. Chinese Americans typically used acupuncture and herbs, and Vietnamese Americans typically used coining, massage, and cupping. Despite the frequent use of CAM therapies among these populations, discussion about CAM therapy use with conventional clinicians was infrequent; however, when it did occur, the health care ratings were higher.

To our knowledge, we are the first to examine the prevalence of CAM therapy use among these populations on a national scale. Language and cultural issues have made cross-sectional surveys difficult to create, validate, and administer. In general, the Asian Americans in our study population had little formal education, lacked proficiency with the English language, and were located in communities that are culturally isolated from the surrounding urban environments. Smaller studies of similar populations have been done in certain localities and have provided limited data on the use of CAM therapies among Chinese and Vietnamese Americans. For example, one study reported that 53.7% of middle-aged Chinese American women who lived in Northern California had used herbal remedies within the past year.[20] Another study reported that 58% of Vietnamese refugees in Washington State had used CAM therapies in the past.[21] A third study conducted in Northern California found that 22% of Chinese American women who had breast cancer reported use of herbal remedies within a 6-month period.[22]

Comparatively, among non-Hispanic Whites, the reported percentage of CAM therapy use during a *1-year* period ranges from 8.3% to 42%, depending on the literature cited.[23–26] Among our study population, the frequency of CAM therapy use during a *1-week* period was 10% to 18%. Because of the differences in time scales, it is impossible to make direct comparisons. Although the rates of use do not seem drastically different, we may have largely underestimated the use of CAM therapies among our study population. By sampling only patients who were seen at health centers that provided conventional medical care, we may have excluded subjects who rely primarily on the use of CAM therapy. Additionally, studies that have evaluated CAM therapy use among non-Hispanic Whites have included spiritual healing, dietary supplements, and relaxation techniques in the definition of CAM therapy.[24,25] A similar definition applied to our study population may have yielded higher estimates of CAM therapy use. Nevertheless, use of certain CAM therapies, such as coining, cupping, herbs, and acupuncture, likely exceeds the average use among non-Hispanic Whites.[23,24]

Socioeconomic differences between Cantonese-speaking and Mandarin-speaking Chinese Americans may account for differences in CAM therapy use among these 2 groups,[19] because Cantonese speakers are more likely to come from either the Guandong province in southern China or Hong

Kong, and Mandarin speakers are more likely to come from northern China or Taiwan.[27] The fact that the use of herbs as "tonics" is common in southern China may explain the more frequent use of CAM therapies among Cantonese-speaking Chinese Americans.[27,28]

The multivariate analyses provided some revealing results. First, respondents who perceived their own health to be poor or fair tended to use CAM therapies more frequently than did those who perceived their health to be good, very good, or excellent. The association between worse self-perceived health and CAM therapy use has been documented repeatedly in studies with non-Hispanic Whites, but it has not previously been studied with Asian immigrant populations.[23–26] Second, factors that may serve as markers of acculturation, such as proficiency with the English language, years in the United States, and age, were not associated with decreased CAM therapy use. On the basis of these findings, it would be wrong to assume that use of CAM therapies among our study population diminished with the amount of acculturation or years in the United States. Third, the common correlates of CAM therapy use reported for White Americans—female gender, high education, and middle age—did not appear as significant correlates for CAM therapy use among our study population.[23–26] CAM therapy use may be a product of embedded, pervasive cultural values rather than generational or sociodemographic differences. Fourth, respondents who lived in the western United States were more likely to have ever used CAM therapies. This is similar to findings for CAM therapy use among non-Hispanic Whites.[24] Finally, increased satisfaction with or number of health center visits for conventional care was not associated with diminished use of CAM therapy. Conversely, decreased satisfaction with the conventional health centers was not associated with increased CAM therapy use. No evidence shows mutual exclusivity of the 2 types of medicine (conventional and CAM therapies). Rather, simultaneous use of both conventional medicine and CAM therapy occurs frequently, as evidenced by the frequency of use of both types of treatments during the same week for the same illness. However, when care from the health centers was difficult to obtain, CAM therapy use was more frequent. While patients may have had no qualms about combining the 2 approaches, they may have used 1 form of treatment more frequently when the other was not available.

Despite the common use of CAM therapies, discussions about CAM therapy use with clinicians were infrequent. It is possible that participants avoided these discussions because of fear of criticism from the physician or that the medical staff did not ask these questions because of time constraints.[14] Whatever the reason, discussions about CAM therapy use were associated with improved health care ratings. Qualitative studies with focus groups that were done before our large-scale survey showed patients' desires to work with medical staff who understand and support their use of CAM therapies.[14] Multivariate analysis of the data collected from our study population identified discussions about CAM therapy use as an independent correlate of overall ratings of health care quality.[29] A clinician's willingness to discuss CAM therapy use may imply that the clinician has an understanding of the patients' culture. Ideally, discussions about CAM therapy use should be conducted in a nonjudgmental and educated manner so that patients avoid feeling criticized. Although we did not evaluate the quality of the discussions reported by patients, it is possible that objective, sympathetic discussions about CAM therapy use can further improve health care ratings.

There are several limitations to our study. First, because this was a cross-sectional study, our ability to determine causality was limited. Although we were able to show associations between discussions and better health care ratings, we were unable to prove that these discussions caused better ratings. Second, data on certain known correlates of CAM therapy use, such as attitudes about CAM therapy use, health insurance coverage for CAM therapies, and availability of CAM therapies, were not collected for our survey. Third, the generalizability of this survey is limited to Vietnamese and Chinese Americans who visited the particular community health centers we studied. By not including those who did not visit health centers and thus may have been more likely to use CAM therapies alone, we may have underestimated the frequency of CAM therapy use among Chinese and Vietnamese Americans. By restricting our study to 11 health centers nationally, our results may not be generalizable to other centers or to other patients who receive care in other settings. Fourth, our respondents were primarily first-generation immigrants; therefore, our results are not generalizable to second- or third-generation Asian Americans. Additionally, our study population was composed of Vietnamese and Chinese Americans who had limited proficiency with the English language, and the use of CAM therapies among this group may be higher than among the broader population of Chinese and Vietnamese Americans. Our study is nevertheless the largest survey of Chinese and Vietnamese Americans who had limited proficiency with the English language, and it is a first step toward understanding the patterns of CAM therapy use among this population.

The common use of CAM therapies and the benefits obtained from discussions about CAM therapy use may be unique among this immigrant population, but it also may be true for other non-Western immigrant populations.[30,31] Clinicians need to be fully aware of the belief systems and practices of their patients' cultures. Improved understanding of how the belief systems differ and how these differences influence health care practices will further optimize care for diverse patient populations. ■

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Contributors

A.C. Ahn originated the study, performed and interpreted the data analysis, and wrote the article. Q. Ngo-Metzger originated and designed the survey, supervised data collection, and assisted with writing the article. A.T.R. Legedza provided statistical expertise, assisted with data analysis, and modified the article. B.R. Clarridge and M.P. Massagli designed the survey, collected data, and modified the article. R.S. Phillips supervised

all parts of the study, including survey development and collection, data interpretation, and preparation of the article.

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Human Participant Protection

The survey was approved by the Beth Israel Deaconess Medical Center institutional review board. All participants signed informed consent forms.

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