

Use of Complementary and Alternative Medical Therapies among Racial and Ethnic Minority Adults: Results from the 2002 National Health Interview Survey

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Purpose: Complementary and alternative medicine (CAM) use among ethnic minority populations is poorly understood. We sought to examine CAM use in Hispanics, non-Hispanic blacks and non-Hispanic whites.

Methods: We analyzed data from the Alternative Health Supplement to the 2002 National Health Interview Survey (NHIS), including information on 19 different CAM therapies used in the past 12 months.

Results: An estimated 34% of Hispanic, non-Hispanic black and non-Hispanic white adults in the United States used at least one CAM therapy (excluding prayer) during the prior 12 months (2002). CAM use was highest for non-Hispanic whites (36%), followed by Hispanics (27%) and non-Hispanic blacks (26%). Non-Hispanic whites were more likely to use herbal medicine, relaxation techniques and chiropractic more frequently than Hispanics and non-Hispanic blacks. After controlling for other sociodemographic factors, Hispanic and non-Hispanic black races/ethnicities were associated with less CAM use, with adjusted odds ratios (95% confidence intervals) of 0.78 (0.70, 0.87) and 0.71 (0.65, 0.78), respectively. Hispanics cited using CAM because conventional medical treatments were too expensive more frequently than non-Hispanic blacks or whites. Hispanics had the highest provider nondisclosure rates (68.5%), followed by non-Hispanic blacks (65.1%) and non-Hispanic whites (58.1%).

Conclusions: Excluding prayer, Hispanics and non-Hispanic blacks used CAM less frequently than non-Hispanic whites and were less likely to disclose their use to their healthcare provider. Further research is needed to improve our understanding of the disparities in CAM use.

Key words: Hispanics ■ non-Hispanic blacks ■ complementary alternative medicine ■ cultural competency ■ health disparities

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INTRODUCTION

A large number of people use complementary and alternative medicine (CAM) in the United States. In 1997, 42% of the American population used some form of CAM.¹ Patterns of CAM use in minority populations have not been extensively studied. Few surveys have reported on CAM use among adults within non-Anglo/white groups using national probability data. With the increase in the minority population, there has been a demand for research on CAM use by minority populations and by specific minority subgroups.² Additionally, an improved understanding of CAM use among non-Anglo/white populations will enable clinicians to provide more culturally sensitive care to the full range of their culturally diverse patient population.

According to the 2000 U.S. Census, Hispanic and black adults make up over 25% of the total population.³ Unfortunately, previous national CAM sur-

veys^{1,4} have not oversampled racial and ethnic minorities, resulting in numbers that are too small to permit accurate subset analyses of non-Hispanic blacks and Hispanics using national estimates. Recently, a report was issued on CAM use among U.S. adults, using data from the 2002 National Health Interview Survey (NHIS). The report noted that 36% of adults used some form of CAM therapy during the past 12 months when prayer for health reasons was not considered. Although the use of CAM varied according to race/ethnicity, differences by race/ethnicity were not evaluated using adjusted analyses.⁵ Prior to this report on the 2002 NHIS results, one other CAM study provided nationally representative ethnic minority population estimates. However, that study was restricted to the use of five CAM modalities and was based on data collected in 1995.⁶ Surveys of ethnic minorities have been performed in specific clinics serving minority communities, but have limited generalizability.⁷⁻⁹ Race/ethnicity has been reported to affect the specific choices of CAM based on cultural and traditional preferences.¹⁰ Results of a single study suggest that 83% of minority patients who use it do not disclose this information to their physician.¹¹

Despite the population growth of minorities, there is a gap in the current literature available on CAM use by adults of nonwhite racial backgrounds. In this context, our aims were to determine the prevalence of CAM use in ethnic minority populations; to identify how race/ethnicity influences the use of CAM; and to examine the reasons for use and rates of disclosure to medical professionals.

METHODS

Data Source

We analyzed data from the Sample Core component and the Alternative Health Supplement to the 2002 NHIS. The alternative medicine supplement was administered as part of the sample adult questionnaire of the 2002 NHIS. The NHIS is an in-person household survey conducted by the Census Bureau for the National Center for Health Statistics, and it is the principal source of information in the United States on the health of the civilian, noninstitutionalized household population. Using computer-assisted personal interviews, the survey was administered in-person in English and/or Spanish.

One adult (aged 18 years or older) was randomly selected from each household to complete this portion of the survey. There were 31,044 completed interviews with a 73.4% final-weighted response rate. Non-Hispanic blacks and Hispanics were oversampled.

Use of Complementary and Alternative Medicine

The Alternative Medicine Supplement elicited information from U.S. adults on 19 nonconventional health therapies. The NHIS categorized these 19 CAM therapies into two groups: provider-/practitioner- and self-care-based. The interviewer began this section of the survey by asking, "Now, I am going to ask you about some other health services you may have used. First, I will ask you about some services for which you may have seen a practitioner. Later, I will ask you about some other health practices you may have done on your own."

The 10 provider- or practitioner-based therapies were identified as acupuncture, Ayurveda, biofeedback, chelation, chiropractic, energy healing therapy/reiki, folk medicine, hypnosis, massage and naturopathy. All respondents were asked "Have you EVER seen a provider or practitioner for any of the following for your own health?" Respondents who answered yes were then asked, "During the past 12 months, did you see a practitioner for [therapy]?"

The eight "self-care-based" therapies included herbal medicine; homeopathy; special diets; mega-/high-dose vitamins; yoga; tai chi; qi gong; and relaxation techniques (i.e., meditation, guided imagery, progressive relaxation, deep breathing exercises). The respondents were asked, "During the past 12 months, did you use [therapy] for your own health or treatment?"

The prayer category included self-prayer, sacrament, prayer chain and/or prayer by others. The respondents were asked, "During the past 12 months, did you pray specifically for the purpose of your OWN health; did you ask or have others pray for your OWN health; did you participate in prayer chain or prayer group for your OWN health; and/or did you have a healing ritual or sacrament performed for your OWN health or treatment?"

Other Health-Related Factors

We included information on the respondents' age (<25, 25-34, 35-44, 45-54, 55-64, ≥65); gender; marital status (defined as married or not married); educational attainment (<high school, high-school graduate, some college, college graduate); annual family income (<\$15,000, \$15,000-\$34,999, \$35,000-\$64,999, ≥\$65,000); race/ethnicity (Hispanic, non-Hispanic white, non-Hispanic black); and region of U.S. residence (Northeast, Midwest, South, West). We also analyzed data on the following: health insurance status (insured or not insured), availability of professional healthcare ("Is there a place that you usually go to when you are sick or need advice about your health—a clinic or health center, doctor's office or HMO, hospital emergency room, hospital outpa-

Table 1. Baseline Characteristics of Respondents*

Characteristics	Total (%)	Hispanic (%)	Non-Hispanic White (%)	Non-Hispanic Black (%)
Population	100	11.5	76.5	11.9
<i>Age (Years)</i>				
<25	13.2	18.8	11.9	16.2
25–34	17.6	24.4	16.1	20.5
35–44	21.3	23.3	20.8	22.9
45–54	18.9	15.4	19.5	18.3
55–64	12.6	8.8	13.6	10.4
>65	16.4	9.3	18.2	11.7
<i>Sex</i>				
Male	48.0	49.1	48.0	44.5
Female	52.0	50.9	52.0	55.5
<i>Marital Status</i>				
Married	57.6	57.2	60.8	37.7
Other	42.4	42.9	39.2	62.3
<i>Education Level</i>				
< High school	9.5	30.6	7.1	10.7
High-school grad	22.2	19.9	22.4	22.6
Some college	35.9	31.9	35.7	41.6
College grad	31.9	16.6	34.4	24.5
<i>Income</i>				
<\$15,000	13.5	17.6	12.7	14.8
\$15,000–\$34,999	19.4	21.7	18.5	23.4
\$35,000–\$64,999	14.7	9.8	15.7	13.0
≥\$65,000	6.3	2.4	7.4	3.2
Other (missing/refused)	46.0	48.4	45.7	45.7
<i>Region</i>				
Northeast	19.3	15.1	20.2	17.4
Midwest	24.9	9.2	28.3	17.9
South	37.7	33.9	35.0	58.2
West	18.8	41.9	16.4	6.5
<i>Self-Perceived Health Status</i>				
Excellent	30.5	29.5	31.6	24.3
Very Good	31.6	28.8	32.3	30.2
Good	25.5	27.9	24.7	28.7
Fair	9.2	11.0	8.5	12.4
Poor	3.0	2.8	2.9	4.3
<i>Insurance—Medical</i>				
Yes	85.7	64.2	89.7	81.3
No	14.3	35.8	10.3	18.7
<i>Usual source of Medical Care</i>				
Yes	87.7	73.4	89.9	87.4
No	11.6	26.1	9.5	11.4
<i>Last visit to Health Professional</i>				
≤6 months	68.6	53.7	71.2	66.8
>6 months ≤1 year	13.6	15.3	13.2	14.8
>1 year, never saw	16.6	29.8	14.6	16.3

* Differences among the groups were all significant at p<0.005.

tient department or some other place?" A follow-up question also asked, "Is that place the same place you usually go when you need routine or preventive care, such as a physical exam or check-up?") and utilization of health services (last visit to health professional). We also included self-perceived health status (excellent, very good, good, fair and poor). We used data on reasons for use of CAM and disclosure rates to medical professionals. These questions offered respondents five distinct reasons for using a CAM therapy, which included: "Did you choose [modality] for any of the following reasons?—Conventional treatments would not help you, conventional treatments were too expensive, [modality] with conventional medical treatments would help you, a conventional medical professional suggested you try [modality], or you thought it would be interesting to try [modality]?" Disclosure rates for a certain modality were ascertained by asking the question, "During the past 12 months, did you let any of these conventional medical professionals know about the use of [modality]?"

Statistical Analyses

All analyses used SUDAAN, version 8.1 (Research Triangle Institute, Research Triangle Park, NC),¹² to account for the complex sample design of the NHIS.

Population estimates were calculated using NHIS weights, which are calibrated to census totals for gender, age and race/ethnicity of the 2002 U.S. population. SUDAAN uses Taylor series linearization to compute standard errors and test statistics. Descriptive analytic techniques were used to examine the prevalence of CAM use; the most common modality used; insurance coverage; reasons for use; and disclosure rates to a medical professional. Within each of the racial/ethnic categories (Hispanic, non-Hispanic blacks and non-Hispanic whites), we used Chi-squared tests of independence to compare characteristics of CAM users and nonusers. We used multivariable logistic regression analysis to assess the association between race/ethnicity as an independent variable and the use of CAM, after controlling for all other background variables. We selected variables for testing in our model based upon the results of previous national studies, as well as our own clinical experience and entered all of these variables into the final model simultaneously. Variables tested in our model are listed in Table 1. We constructed two separate models, the first defining the dependent variable as the use of CAM excluding prayer, and the second the use of CAM including prayer.

To avoid any inconsistencies caused by different definitions of CAM, we will present our data with and without prayer.

RESULTS

There were 31,044 completed interviews, with a 73.4% final weighted response rate. Non-Hispanic blacks and Hispanics were oversampled. Of the 31,044 respondents, 29,990 were self-identified as Hispanics, non-Hispanic blacks and non-Hispanic whites and were the subjects of further analysis. Of these, 10,113 (34% weighted) reported using at least one CAM therapy, excluding prayer, during the past year.

Characteristics of the population shown in Table 1 are categorized by race/ethnicity. The racial/ethnic groups were compared to one another. Differences among the groups were all significant at $p < 0.005$. In our sample, non-Hispanic blacks and Hispanics each accounted for approximately 12% of the total population.

Table 2 compares CAM users to nonusers. Across groups, users tended to be between 35 and 54 years old, female, have an educational level beyond high school, have higher incomes, have a usual source of medical care and had visited a health professional within the past six months. Among non-Hispanic blacks and non-Hispanic whites, worsening health status was associated with less CAM use. Among Hispanics, worsening health status appeared to be associated with increased use. Hispanics and non-Hispanic blacks with medical insurance tended to use CAM more, while insurance status appeared to have little effect on CAM use among non-Hispanic whites.

Table 3 demonstrates the 12-month prevalence of use of CAM therapies. Among the three groups, CAM use (excluding prayer) was highest in non-Hispanic whites (36%), followed by Hispanics (27%) and non-Hispanic blacks (26%). Prayer use was highest among non-Hispanic blacks (67%) and lowest among non-Hispanics whites (59%) and Hispanics (57%). Excluding prayer, which was used by 44% of the population, the most commonly used therapies among the three groups were herbal medicine (19%), relaxation techniques (14%), chiropractic (7%), yoga (5%) and massage (5%). Non-Hispanic whites tended to use herbal medicine, relaxation techniques and chiropractic more frequently than Hispanics and non-Hispanic blacks.

Table 4 compares the reasons for CAM use and nondisclosure rates among the three groups. Across the three groups, approximately 30% of respondents reported that one reason to use CAM was that "it would be interesting to try CAM" and there were no significant differences by ethnicity. A similar percentage of respondents overall reported believing that "CAM with conventional medicine would help," with non-Hispanic whites citing this reason more commonly than Hispanics and non-Hispanic blacks.

Table 2. CAM Users vs. Nonusers by Race/Ethnicity

Characteristics	Hispanic (%)			Non-Hispanic White (%)			Non-Hispanic Black (%)		
	Users	Nonusers	P Value	Users	Nonusers	P Value	Users	Nonusers	P Value
<i>Age (Years)</i>			<0.001			<0.001			<0.001
<25	15	20		11	13		14	17	
25-34	23	25		17	16		21	20	
35-44	23	23		23	19		24	22	
45-54	18	14		22	18		22	17	
55-64	11	8		14	13		11	10	
>65	10	9		13	21		8	13	
<i>Sex</i>			<0.001			<0.001			0.003
Male	44	51		42	52		41	46	
Female	56	49		58	48		59	54	
<i>Marital Status</i>			0.37			0.39			0.88
Married	56	58		61	61		37	38	
Other	44	42		39	39		63	62	
<i>Education Level</i>			<0.001			<0.001			<0.001
< High school	31	46		7	15		11	25	
High-school grad	20	21		22	30		22	30	
Some college	32	23		36	31		42	32	
College grad	17	8		34	22		25	12	
Other (missing/refused)	1	3		0.3	1		1	2	
<i>Income</i>			<0.001			<0.001			<0.001
<\$15,000	17	18		14	12		15	15	
\$15,000–\$34,999	24	21		21	17		28	22	
\$35,000–\$64,999	13	9		19	14		19	11	
≥\$65,000	4	2		9	6		6	2	
Other (missing/refused)	42	51		38	50		32	51	
<i>Region</i>			<0.001			<0.001			<0.001
Northeast	18	14		20	20		20	16	
Midwest	12	8		29	28		22	17	
South	30	35		30	38		49	61	
West	40	42		21	14		9	6	
<i>Self-Perceived Health Status</i>			<0.001			<0.001			0.08
Excellent	26	31		32	31		24	24	
Very Good	26	30		34	31		33	29	
Good	32	27		23	25		29	29	
Fair	13	10		7	9		11	13	
Poor	4	2		3	3		4	4	
Refused	0	0		0	0		0	0	
<i>Insurance—Medical</i>			<0.001			0.39			<0.001
Yes	70	62		90	90		85	80	
No	30	38		10	10		15	20	
<i>Usual Source of Medical Care</i>			<0.001			<0.001			<0.001
Yes	81	70		92	89		92	86	
No	19	29		8	10		8	12	
Other	0.0	0.6		0.1	1		0.0	2	
<i>Last Visit to Health Professional</i>			<0.001			<0.001			<0.001
≤ 6 months	65	50		76	68		76	64	
>6 months ≤ 1 year	16	15		12	14		13	15	
>1 year, never saw	19	3		11	17		11	18	

Hispanics were more likely than non-Hispanic whites and non-Hispanic blacks to believe that "conventional medical treatments were too expensive." Hispanics had the highest nondisclosure rates (68.5%), followed by non-Hispanic blacks (65.1%) and non-Hispanic whites (58.1%).

Table 5 shows the results from multivariable analysis. After controlling for sociodemographic factors, we found that CAM use (excluding prayer) was most common among women, persons with higher education, higher levels of income, those without insurance, persons with fair-poor health status and western U.S. residents. CAM use was least common among non-Hispanic blacks, Hispanics and those who had not seen a health professional within the past six months. However, if the definition of CAM included prayer, CAM use was most common in non-Hispanic blacks 1.62 (1.48, 1.77) and Hispanics 1.22 (1.11, 1.34), compared to non-Hispanic whites.

DISCUSSION

The overall use of CAM was common within the NHIS study population. Approximately 34% of respondents used at least one CAM therapy (excluding prayer) within the past 12 months. Hispanics, as well as non-Hispanic blacks, used CAM less frequently than non-Hispanic whites. Prayer use was highest among non-Hispanic blacks. One-third of all of the participants responded that their reason for CAM use was that "CAM with conventional medical treatments would help" and "it would be interesting to try CAM." Hispanics were more likely to report using CAM because "conventional medical treatments were too expensive." Hispanics and non-Hispanic blacks had higher rates of nondisclosure to their healthcare provider than non-Hispanic whites.

Our findings are inconsistent with those reported by Mackenzie et al.⁶ They studied 3,789 persons from the 1995 National Comparative Survey of Minority Health Care of the Commonwealth Fund. While we found that 34% of respondents used CAM in the past year, they reported that 43.1% of the respondents reported using one or more CAM modalities (defined by five items: herbal medicine, acupuncture, chiropractic, traditional healer and home remedy) within the past 12 months. Although they reported a prevalence of herb use similar to our findings, they reported higher herb use in Hispanics and African Americans compared to our findings. For chiropractic, they reported a similar overall prevalence to our findings, but reported higher use among African Americans and Hispanics compared to our findings. Acupuncture was used similarly in both studies. We were unable to make direct comparisons for use of traditional healers and home reme-

dies, as NHIS did not ask about these therapies. For folk medicine, we found that 0.1% of the populations used folk medicine, while Mackenzie et al. reported 3% overall use. Their study revealed that the use of CAM overall was similar among all ethnic groups, however, differences occurred among modalities. Possibly, these inconsistencies between studies are attributable to differences in wording of questions, sample selection or secular trends.

In 2002, using the 1999 NHIS, Ni et al. estimated lower overall use of CAM (28.9%) and reported that non-Hispanic whites had the highest use compared to other groups,¹³ consistent with our findings.

Smaller studies in minority populations are limited by the lack of national generalizability. One study concluded that 77% of Mexican Americans (n=547) in the El Paso, Texas region used CAM.⁸ A study conducted in New Mexico found that herbal remedies were used by 61% of the population. Hispanics used herbs more than whites (77% vs. 47%). The authors concluded that ethnicity (Hispanic culture) was related to the use of herbal remedies.¹⁴ A study comparing the use of CAM among whites, African Americans and Hispanics was conducted in New York City. The study revealed that more than half of the sample had used a CAM treatment or remedy. Racial and ethnic differences in CAM use were minimal.⁷ The variability and inconsistency of CAM use estimates may be attributable to discrepant definitions of CAM,^{1,4,6,14,15} geographic variation of use,^{6-8,13,16-18} exclusion of non-English-speaking populations^{1,4,7,14} and exclusion of those without a telephone.^{1,4,6,14}

The correlates of CAM use we identified were consistent with previous studies.^{1,4,6,13,14} Being female, having more years of formal education, higher-income status, living in the west and being ages 25–64 have all been associated with higher rates of CAM use. These associations are similar to findings for CAM use in non-Hispanic whites.¹ The association between worsening self-perceived health and CAM use has been documented repeatedly in studies involving non-Hispanic whites.^{4,11,13,14} Hispanics with a worsening self-perceived health status used CAM more often than whites. Respondents were also more likely to use CAM if they had visited a health professional within the last six months.¹³

We found that prayer, herbal medicine, relaxation techniques and chiropractic were used most commonly. These findings are also consistent with previous studies.^{1,4,13} The significant differences we observed in the rates of certain therapies by ethnicity were of interest. For example, chiropractors were used by 8.8% of non-Hispanic whites, in contrast to 3.8% of Hispanics and 2.7% of non-Hispanic blacks. A number of possible explanations may account for these differences, such as the lack of diversity among chiro-

practitioners,¹⁹ location of chiropractors' offices or cultural beliefs about chiropractors.

There was a surprisingly low rate of folk medicine (0.2%) use among Hispanics in the NHIS survey. This is contradictory to three decades of anthropological research.^{20,21} By contrast, previous surveys of Hispanic patients have estimated the use of folk medicine (curanderos and other traditional practitioners) at rates ranging between 4% and 7%.^{15,16}

Since 1998, the use of prayer for health concerns has increased. Recently, McCaffrey et al.²² demonstrated that 35% of respondents used prayer for health concerns in a national study conducted in 1997. We estimate that 44.5% of respondents used prayer, with non-Hispanic blacks and Hispanics having the highest rates, 60.8% and 47.3%, respectively. For several decades, the influence of religion and prayer among African Americans^{23,24} and Hispanics^{25,26} has been well-documented, although less is known about prayer for health concerns. Recently, Dessio et al. concluded that African-American women were more likely to utilize religion/spiritual-

ity for health reasons than women of other races/ethnicities.²⁷ The high use of prayer may be attributed to the central theme of religious and spiritual beliefs as an integral part of many traditional health systems.²⁸

Hispanics were more likely to choose CAM, "because conventional treatments were too expensive." This finding is consistent with observations of *The White House Commission* that reported that underserved populations use CAM therapies because they cannot afford access to conventional care.²⁹ Hispanics have less access to professional medical care than non-Hispanic whites and many may turn to alternative forms of medical care (folk/home remedies, family and community healers).³⁰ Despite equal rates of participation in the workforce, only 43% of Latinos are covered by employment-based health insurance, compared to 73% coverage of non-Hispanic whites.³¹ Our survey revealed that Hispanics were least likely to have medical coverage, followed by non-Hispanic blacks and whites. Hispanics and non-Hispanic blacks with medical insurance tended to use CAM more, yet

Table 3. Comparison of Prevalence and Frequency of Use of CAM Therapies by Race/Ethnicity

Type of Therapy	Total (%)	Hispanic (%)	Non-Hispanic White (%)	Non-Hispanic Black (%)	P Value
CAM Use					
Any CAM without prayer	34.0	26.6	36.4	26.4	<0.001
Any CAM with all prayer	59.6	57.0	58.7	67.4	<0.001
Any CAM with prayer except self-prayer	48.0	42.3	48.0	53.8	<0.001
Acupuncture	1.0	1.1	1.0	0.7	0.14
Ayurvedic	0.07	0.03	0.07	0.07	0.31
Biofeedback	0.1	0.1	0.2	0.1	0.43
Chelation	0.03	0.02	0.04	0.0	0.02
Chiropractic	7.5	3.8	8.8	2.7	<0.001
Energy Healing	0.5	0.4	0.6	0.4	0.12
Folk Medicine	0.1	0.2	0.1	0.1	0.21
Herbal Medicine	18.6	17.0	19.2	14.1	<0.001
Homeopathy	1.7	1.4	1.9	0.6	<0.001
Hypnosis	0.3	0.04	0.3	0.2	<0.001
Massage	4.9	2.7	5.5	2.4	<0.001
Mega/High-Dose Vitamins	2.9	1.2	3.2	2.3	<0.001
Naturopathy	0.2	0.2	0.3	0.1	0.13
Qi Gong	0.2	0.2	0.3	0.2	0.38
Relaxation Techniques	14.0	9.8	14.8	13.6	<0.001
Special Diets	3.4	2.3	3.8	2.2	<0.001
Tai Chi	1.2	1.0	1.2	1.1	0.55
Yoga	5.1	2.9	5.6	2.6	<0.001
Prayer					
All prayer	43.5	47.3	40.8	60.8	<0.001
Sacrament	2.0	2.4	1.8	2.7	0.006
Self-prayer	41.9	45.1	38.8	58.3	<0.001
Prayer chain	9.3	9.6	8.0	17.8	<0.001
Prayer by others	23.9	25.0	21.2	39.7	<0.001

insurance status had no influence among whites in bivariable analyses. Insurance status has been examined by two studies with contradictory results.^{5,12} In our regression model, we found that respondents who were uninsured were more likely to use CAM.

Several studies have suggested that CAM therapies are used in conjunction with conventional medicine.^{1,4,12,14} We found that seeing a health professional within the past six months was associated with the use of CAM. This may suggest either that CAM users tend to be active in promoting their own health¹⁹ or that sicker people see their health professionals and use CAM more often.

Despite the frequent use of CAM in these populations, discussion about CAM with conventional health providers is infrequent, particularly among Hispanics and non-Hispanic blacks. Previous studies have consistently shown nondisclosure rates at about 63–72%.³² To our knowledge, this is the first study to show ethnic differences in disclosure rates. It is possible that subjects avoided discussion of CAM out of fear of criticism from the doctor, or the medical staff did not think to ask about CAM use due to time constraints.¹⁷ Additionally, even without the language barriers that certain minorities face in the medical encounter, English-speaking, nonwhite patients may not inform their doctors of nonconventional treatments because they may think them irrelevant, are embarrassed to discuss them, feel the doctor will object or want to avoid being viewed as unsophisticated.^{19,20} This underscores the need for proactive inquiry on the part of physicians to ask all

patients, especially minority patients, about their CAM use.

There are several limitations to this study. First, the survey is based on self-reported data, making it subject to recall bias. Second, and most significantly, despite the improved sampling and collection strategies employed by the NHIS to capture ethnic minority responses, there appears to be both ethnocentric and medico-centric bias in the survey instrument, which may have contributed to an underestimation of the prevalence of CAM, especially among nonwhite ethnic groups.³³ For example, in the herbal medicine questions, the instrument sought information regarding the use of 35 specifically named herbs, but failed to ask about the herbs more commonly used by ethnic minorities. Among Hispanics, cat's claw, rue, aloe vera and eucalyptus are frequently used,^{7,14} but these were not named in the questionnaire. Herbs named in the NHIS survey questions tended to be those widely used by middle class, non-Hispanic whites and those to be marketed as manufactured products; yet, Hispanics and non-Hispanic blacks commonly use nonprocessed and often home-grown herbs, in addition to or instead of, manufactured herbal products.

Additionally, in the folk medicine category, the NHIS asked about only two systems in particular—curanderismo (a traditional Latin-/Mexican-American folk healing system)³⁴ and Native-American (nontribally differentiated). It failed to ask about other folk medicine systems, such as Espiritismo (translation: Spiritism), shamanism, Santería (the

Table 4. Reasons for Use and Disclosure Rates of CAM Users among Races/Ethnicities

	Total (%)	Hispanic (%)	Non-Hispanic White (%)	Non-Hispanic Black (%)	P Value
<i>Reason for Use</i>					
Conventional treatments would not help you	16.9	14.6	18.0	11.4	<0.001
Conventional treatments were too expensive	8.0	12.0	7.7	7.9	<0.001
CAM with conventional medical treatments would help you	32.3	29.8	33.8	26.5	<0.001
A conventional medical professional suggested you try CAM	15.8	14.3	16.4	14.7	0.007
You thought it would be interesting to try CAM	30.0	29.7	31.0	26.9	0.081
<i>Disclosure to Conventional Medical Professional</i>					
No	60.2	68.5	58.1	65.1	<0.001

“way of the saints”) or about the use of community healers, such as bonesetters, midwives and sobadores (massagers). Espiritismo is a system in which mental and spiritual healing is carried out by healers, using energy and/or trance and has been described as a community healing resource in a variety of Latino populations.^{35,36} Santería is a magico-religious system combining historical spiritual traditions of the Yoruba of West Africa with selected elements of European Catholicism. Santería was developed in Cuba in the decades following the Spanish importation of African slaves; it came to the United States with Cuban and Puerto Rican immigrants.^{37,38} Sobadores (massagers) are lay healers who specialize in the use of manual massage techniques to treat symptoms and putative physical causes of both conventionally recognized ailments and culture-specific folk illnesses.^{34,39,40} Contrary to our results, several convenience sample studies have estimated that Hispanics were higher users of herbal and home remedies^{14,41-43} and curanderos.^{14,41}

These limitations suggest that multi/interdisciplinary (e.g., anthropology, folklore, botany, ethnobotany and sociology) collaboration is critical to designing culturally appropriate survey instruments to avoid unconscious ethnocentric bias in categorization and definitions. A further limitation, since NHIS is largely restricted to a multiple-choice format, is that little information was available on items such as health beliefs, customs and attitudes towards CAM. This too suggests the value of

Table 5. Multivariable Analysis of Characteristics Associated with CAM Use*

Characteristics	Outcome: Use of CAM Adjusted Prevalence Odds Ratios ** (95% Confidence Interval)
<i>Race/Ethnicity</i>	
Non-Hispanic white	1.0
Non-Hispanic black	0.71 (0.65, 0.78)
Hispanic	0.78 (0.70, 0.87)
<i>Age, Years (%)</i>	
<25	1.0
25-34	1.07 (0.95, 1.20)
35-44	1.26 (1.13, 1.40)
45-54	1.34 (1.19, 1.50)
55-64	1.30 (1.15, 1.47)
>65	0.87 (0.77, 0.99)
<i>Sex</i>	
Male	1.0
Female	1.46 (1.37, 1.56)
<i>Marital Status</i>	
Other	1.0
Married	0.89 (0.84, 0.95)
<i>Education Level</i>	
< High school	1.0
High-school grad	1.45 (1.30, 1.61)
Some college	2.14 (1.94, 2.36)
College grad	2.92 (2.61, 3.26)
<i>Income</i>	
<\$15,000	1.0
\$15,000-\$34,999	1.06 (0.96, 1.17)
\$35,000-\$64,999	1.11 (0.99, 1.25)
≥\$65,000	1.11 (0.95, 1.29)
Other	0.71 (0.64, 0.78)
<i>Region</i>	
Northeast	1.0
Midwest	1.07 (0.97, 1.18)
South	0.82 (0.76, 0.90)
West	1.41 (1.28, 1.56)
<i>Self-Perceived Health Status</i>	
Excellent, very good, good	1.0
Fair, poor	1.20 (1.08, 1.32)
<i>Insurance—Medical</i>	
Yes	1.0
No	1.19 (1.07, 1.32)
<i>Usual Source of Medical Care</i>	
Yes	1.0
No	0.94 (0.84, 1.04)
<i>Last Visit to Health Professional</i>	
≤ 6 months	1.0
>6 months ≤ 1 year	0.77 (0.71, 0.83)
>1 year, never saw	0.59 (0.53, 0.65)

* CAM defined without the prayer category; ** The adjusted prevalence odds ratios (PORs) were calculated from logistic coefficients.

interdisciplinary collaboration and multimethod studies to obtain a fuller picture of CAM use and rationales across populations.⁴³

In summary, our results demonstrate that the rates of CAM use in ethnic minorities are considerably less than in non-Hispanic whites. Excluding prayer, most racial/ethnic minorities do not use CAM as commonly as non-Hispanic whites. Racial/ethnic minorities are less likely to disclose their use of CAM to their healthcare professional. The successful delivery of health services to minorities must include an increased awareness and appreciation for the cultural context of their CAM use by examining health belief systems and their potential effect on health behaviors and outcomes. An improved understanding of their use of CAM may also help address health disparities and inequalities in the United States. Further research is needed among minority populations to provide us with a greater understanding of their use of CAM to serve their needs within the current health system. Understanding the barriers that minorities face regarding nondisclosure of CAM use to their healthcare providers is necessary. Research is also needed to develop more culturally sensitive questionnaires.

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