Use and Disclosure of Complementary Health Approaches in US Adults With Cardiovascular Disease

Fuschia M. Sirois, PhD, BSc[a,*], Linghui Jiang, MSPH[b], and Dawn M. Upchurch, PhD, LAc[b]

Evidence indicates that use of Complementary Health Approaches (CHAs) is common in patients with cardiovascular disease (CVD) and has benefits and risks. Yet, disclosure of CHA use to physicians is not uniformly high. The present study aimed to assess the prevalence and patterns of CHA use and disclosure in patients with CVD in a nationally representative US sample. Use of specific CHA modalities and the predictors and reasons for nondisclosure were examined. In the 2012 National Health Interview Survey, a nationally representative sample of adults aged 18+ was used, and 12,364 patients who reported being diagnosed with CVD were analyzed using weighted bivariate and logistic regression. Analyses revealed that 34.75% of patients with CVD had used CHA in the previous year. Women, those with higher education and income, who had functional limitations, greater mental distress, and healthier lifestyles were significantly more likely to use CHA. Nonvitamin, nonmineral supplements was the most prevalent CHA used (19.22%). Rates of nondisclosure were highest among younger and better educated CHA users. In patients with CVD who did not disclose CHA use to their physician (33.67%), 45.51% said the reason was because physician did not ask; 8.75% said the reason was because they were not using CHA at the time. In conclusion, over 1/3 of patients with CVD used CHA in the previous year, and nonvitamin, nonmineral supplements were the most commonly used modality. The findings underscore the importance of provider-initiated communication about CHA use in patients with CVD to minimize the potentially harmful consequences of nondisclosure. **(Am J Cardiol 2018;122:170–174)**

Complementary Health Approaches (CHAs) consist of a diverse set of healing approaches of differing practices, health systems, and products that are not generally considered part of conventional medicine. CHA is an increasingly popular health-care option in cardiac patients,[1] with the prevalence of CHA use reported to be as high as 61% when used in general, and 82% when used specifically to treat cardiovascular disease (CVD).[2] Yet, disclosure of CHA use to physicians is not uniformly high.[2] Nondisclosure of CHA poses some potential risks because nonvitamin, nonmineral (NVNM) and herbal products, one of the most commonly used groups of CHA in cardiac patients,[3,4] can interact with medications or have adverse effects on the cardiovascular or hemostatic system.[5] For example, herbal products such St. John's Wort decrease serum digoxin concentration, whereas Hawthorn increases the effects of digoxin.[4] Products such as Ma-huang (also known as ephedra) can increase heart rate and blood pressure,[5] and result in adverse cardiovascular effects such as stroke and myocardial infarction (MI).[1] Full disclosure of CHA use, whether for CVD or other health issues, is crucial to minimize patient harm. The purpose of the present study was to assess the prevalence and patterns of CHA use and disclosure in patients with CVD in a nationally representative US sample, as well as the reasons for nondisclosure, using the 2012 National Health Interview Survey (NHIS) data containing the most recent CHA information.

Methods

The NHIS 2012, the most recent NHIS survey, was the source of the data used for these analyses. The NHIS is an ongoing, cross-sectional household interview survey of the US civilian, noninstitutionalized population and uses a multistage area probability design.[6] Every 5 years, an Adult Alternative Medicine supplement is administered to a randomly selected adult aged 18 or older in the household (Sample Adult Core) (n = 34,525). In 2012, the Sample Adult Core response rate was 79.7%.[6] For this analysis, the sample included all adults who completed the Alternative Medicine Supplement and stated they were diagnosed with a heart condition. Following earlier research that used the 2002 NHIS to investigate CVD and CHA users (11), we created a composite measure of CVD that included patients in the NHIS who said they had ever been diagnosed by a physician for having (1) hypertension, (2) coronary heart disease, (3) angina, (4) heart attack, or (5) any other kind of heart disease. Based on these criteria, the final analytic sample size was 12,364. The study was exempt from human subjects and from the university's institutional review board because the data are deidentified and publicly available.

[a]Department of Psychology, University of Sheffield, Sheffield, United Kingdom; and [b]Department of Community Health Sciences, Fielding School of Public Health, University of California, Los Angeles, Los Angeles, California. Manuscript received January 23, 2018; revised manuscript received and accepted March 13, 2018.

Funding for this research was provided by the National Center of Complementary and Integrative Health (NCCIH) of the National Institutes of Health (NIH), Bethesda, Maryland to Dr Upchurch, Grant Number AT002156.

See page 173 for disclosure information.

*Corresponding author: Tel: +44 (0) 114 222 6552

E-mail address: f.sirois@sheffield.ac.uk (F.M. Sirois).

0002-9149/$ - see front matter
https://doi.org/10.1016/j.amjcard.2018.03.014

Measures: The primary outcome was use of any type of CHA in the past 12 months. Adults were first asked if they had ever used any of over 20 types of specific CHA modalities (e.g., acupuncture, massage, yoga, meditation, natural products, and so on), and if they responded affirmatively, were then asked if it was used in the past 12 months. Any mention of CHA was coded as a "yes." The final variable was coded as a dichotomy. In addition, we also reported on use of the top 10 types of specific CHA modalities. In patient with CVD who were recent CHA users, we also examined prevalence of nondisclosure of CHA use to their conventional healthcare provider (almost entirely physicians, over 96%) and the reasons mentioned for not disclosing.

Gender was coded as a dichotomy. Age was coded ordinally (18 to 29, 30 to 49, 50 to 64, 65+) as was education (high school or less, some college, baccalaureate, or higher) and income (≤$34,999, $35,000 to $49,999, $50,000 to $74,999, $75,000 to $99,000, and ≥$100,000). Race and ethnicity were based on self-report, with any mention of being Hispanic/Latino given priority (Hispanic, non-Hispanic white, non-Hispanic black, non-Hispanic Asian, Other). Marital status was coded categorically (married, cohabitating, divorced/separated/widowed, never married). Current health status was operationalized as having any functional limitation (yes, no), mental distress as measured by the Kessler K6 scale[7] (yes, no), and a healthy behavior index that was a composite score of the total number of healthy behaviors out of 4 (not smoking, little or moderate alcohol consumption, normal body mass index, and adequate physical activity).

Univariate descriptive statistics and bivariate associations between each covariate and any type of CHA use were computed. Design-based *F* tests were employed for bivariate analysis. Logistic regression was used for multivariate analyses, and adjusted odds ratios and 95% confidence intervals are presented. All analyses were weighted using the individual sampling weights to account for complex sample design. Analyses were conducted with Stata statistical software version 13.1.[8]

Results

Over three-quarters of adults with CVD were 50 and older; about three-quarters were white, followed by black, Hispanic/Latino, Asian, and other races (see Table 1). The vast majority were born in the United States. They tended to be of lower socioeconomic status (SES), with the majority completing high school or less and in the lowest income category. Most were either currently married or divorced, separated, or widowed. Over half reported at least some functional limitation, but less than 5% scored higher on the K6 scale. Over 1/3 reported less than 2 healthy behaviors. They were less likely to be Hispanic/Latino, foreign born, college graduates, or have higher incomes, or to be cohabiting, divorced, or widowed. Lastly, they were more likely to be never married, have functional limitations, higher K6 score, and less likely to engage in a greater number of healthy behaviors (see Supplementary Table S1.)

Overall, just over 1/3 of patients with CVD used CHA in the past year (Table 1). At the bivariate level, there were significant differences between those who used CHA and those who did not except for functional limitations and mental distress. CHA use was higher among women, younger adults, Asians, whites, and other races, among those who were US born, and had higher SES. CHA was highest among cohabiting and married adults and incrementally increased as the

Table 1
Demographic, health, and health behavior characteristics, prevalence of Complementary Health Approaches (CHA) use, and logistic regression results of CHA use, adults with cardiovascular diseases, National Health Interview Survey, 2012 (n = 12,364)

		CHA use	AOR	95% CI
Total	100.00%	34.75%	–	–
Sex				
Male	45.76%	32.26%***	1.00	–
Female	54.24%	36.85%	1.42	(1.29, 1.56)
Age (years)				
18–29 years old	5.20%	40.25%***	1.00	–
30–49 years old	19.50%	38.41%	0.92	(0.71, 1.18)
50–64 years old	33.61%	37.69%	0.85	(0.66, 1.09)
65+ years old	41.69%	29.91%	0.55	(0.45, 0.76)
Race/ethnicity				
NH-White	72.59%	37.90%***	1.00	–
Hispanic	8.84%	26.33%	0.71	(0.60, 0.84)
NH-Black	14.66%	23.11%	0.53	(0.47, 0.60)
NH-Asian	3.05%	39.31%	1.02	(0.79, 1.12)
NH-Other	0.86%	37.68%	1.06	(0.66, 1.71)
Nativity				
Born in US	88.52%	35.35%***	1.00	–
Foreign born	11.48%	30.17%	0.94	(0.79, 1.12)
Education attainment				
High school and less	45.41%	24.46%***	1.00	–
Some college	30.98%	39.26%	1.71	(1.53, 1.92)
College and above	23.60%	48.63%	2.27	(2.01, 2.57)
Annual family income				
$ 0–34,999	46.19%	27.48%***	1.00	–
$ 35,000-49,999	14.64%	35.43%	1.29	(1.12, 1.480
$ 50,000-74,999	16.11%	39.14%	1.35	(1.17, 1.57)
$ 75,000-99,000	9.11%	45.61%	1.68	(1.39, 2.02)
$ 100,000+	13.96%	45.97%	1.46	(1.229, 1.731)
Marital status				
Married	43.93%	36.54%***	1.00	–
Cohabiting	3.76%	39.99%	1.10	(0.94, 1.28)
Divorced/separated/ widowed	38.16%	31.72%	1.28	(1.02, 1.61)
Never married	14.15%	36.00%	1.05	(0.94, 1.17)
Functional limitation				
Limited	59.43%	35.48%	1.00	–
Not limited	40.57%	33.69%	1.49	(1.34, 1.65)
K6 scores				
0–12	95.15%	34.64%	1.00	–
13–24	4.85%	36.91%	1.28	(1.04, 1.57)
Healthy behavior index (continuous)			1.38	(1.29, 1.46)
Healthy behavior index				
0	4.71%	23.23%***	–	–
1	36.04%	28.01%	–	–
2	43.18%	36.44%	–	–
3	14.20%	47.98%	–	–
4	1.87%	60.91%	–	–

NH = non-Hispanic; AOR = adjusted odds ratio; CI = confidence interval.
Notes: Weighted percentages and AOR. Bivariate results based on design-based *F* test.
*** p <0.001. See text for further detail.