Correlates of Complementary and Alternative Medicine Utilization in Depressed, Underserved African American and Hispanic Patients in Primary Care Settings

MOHSEN BAZARGAN, Ph.D.,[1,2] CHIZOBAM O. ANI, M.D., M.P.H.,[1] DAVID W. HINDMAN, Ph.D.,[1,3]
SHAHRZAD BAZARGAN-HEJAZI, Ph.D.,[4,5] RICHARD S. BAKER, M.D.,[2,5] DOUGLAS BELL, M.D.,[5]
and MICHAEL RODRIQUEZ, M.D., M.P.H.[5]

ABSTRACT

Objectives: This study seeks to examine the correlates of complementary and alternative medicine (CAM) use in depressed underserved minority populations receiving medical care in primary care settings.

Methods: A prospective study using interviewer-administered surveys and medical record reviews was conducted at 2 large outpatient primary care clinics providing care primarily to underserved African American and Hispanic individuals located in Los Angeles, California. A total of 2321 patients were screened for depression. Of these, 315 met the Patient Health Questionnaire-9 criteria for mild to severe depression.

Results: Over 57% of the sample reported using CAM sometimes or often (24%) and frequently (33%) for treatment of their depressive symptoms. Controlling for demographic characteristics, lack of health care coverage remained one of the strongest predictors of CAM use. Additionally, being moderately depressed, using psychotherapeutic prescription medications, and poorer self-reported health status were all associated with increased frequency of CAM utilization for treating depression.

Conclusions: The underserved African American and Hispanic individuals meeting the diagnostic criteria for depression or subsyndromal depression use CAM extensively for symptoms of depression. CAM is used as a substitute for conventional care when access to care is not available or limited. Since CAM is used so extensively for depression, understanding domains, types, and correlates of such use is imperative. This knowledge could be used to design interventions aimed at improving care for depression.

INTRODUCTION

There is little doubt that depression represents a significant public health concern for the United States.[1] Major depressive disorders (MDD) are exceptionally common, as they affect up to 11% of the U.S. population yearly.[2] Approximately 5–10% of patients attending primary care settings meet the full DSM-IV diagnostic criteria for major depression,[3–5] with an additional 16% estimated to have subsyndromal depression associated with some functional impairment.[6] Numerous studies demonstrate that patients with untreated depression with co-occurring medical illnesses have higher morbidity and mortality than comparable patients who have their depression treated.[7,8] Additionally, depression is associated with marked impairment in psychosocial function, reduced productivity, increased suicide

[1]Department of Family Medicine, Charles Drew University of Medicine & Science, Los Angeles, CA.
[2]Research Centers in Minority Institutions (RCMI), Charles Drew University of Medicine and Science, Los Angeles, CA.
[3]Los Angeles County–Department of Health Services, Los Angeles, CA.
[4]Department of Psychiatry, Charles Drew University of Medicine & Science, Los Angeles, CA.
[5]Division of General Internal Medicine, David Geffen School of Medicine, UCLA, Los Angeles, CA.

attempts, and increased health care utilization.[9] Remarkably, despite an aggressive awareness campaign of mental health disorders on behalf of the National Institute of Mental Health and the U.S. Surgeon General's Report,[10] there still exists an epidemic of untreated and poorly treated mental disorders in the United States,[11] especially among vulnerable groups such as Hispanics, African Americans, and the underinsured generally.[12–17]

Recent clinic-based screening studies documented that one half of Latino and African American patients suffer from depressive symptoms indicative of psychiatric distress.[18] Yet, data from the National Ambulatory Medical Care Survey show that the rate of office-based visits in which a diagnosis of a depressive disorder was recorded and antidepressant pharmacotherapy was prescribed for Hispanic and African Americans was only 6.2% and 3.6%, respectively.[19] The population-adjusted rate for the use of antidepressant medications for African Americans, however, remains much less than half of that observed in whites. So, although minorities are just a likely as nonminorities to experience severe mental disorders such as anxiety, depression, bipolar disorder, and schizophrenia, they are far less likely to receive treatment.[20] In addition, although psychiatric conditions are often treatable, and the effect of various contemporary psychotropics is frequently dramatic and substantive, it is also true that for the majority of patients, treatment response is incomplete, and many patients continue to require maintenance therapy.[21] Furthermore, the high frequency of undiagnosed MDD results in delay in treatment and higher utilization of nonpsychiatric health care services, particularly in primary care settings, which have now become the *de facto* settings for the treatment of many mental health conditions, and primary care providers are often the sole contacts for more than 50% of patients with mental illness.[22–25]

A large number of people use some form of complementary and alternative medicine (CAM) in the United States, and some estimates suggest that as many as 42% of the American population used some form of CAM.[26] No simple, uniform answer to the question of why people turn toward CAM can be identified, as the list of motivations will vary depending on which group one asks[27] and they may vary depending on the type of CAM.[28] Among the myriad reasons are the pursuit of wellness and the prevention of illness;[29] patients facing serious illnesses (such as cancer) might turn to CAM as the last resort, or as an adjunct to conventional care. In addition, they may choose CAM because of dissatisfaction with health care providers and medical outcomes, side-effects of drugs or treatments, high health costs (specifically medications), and lack of control in their own health care practices.[30,31] Other patients might prefer CAM because of the belief in the lower risk of side-effects. In general, people are more likely to use CAM for chronic conditions where conventional care provides only partial or palliative symptomatic relief.

There appear to be many factors that influence the recognition or treatment of depression in primary care settings that might also aid the initiation and use of CAM. Some evidence suggests that depressed patients in primary care settings present often with vague somatic complaints rather than with overt complaints of depression[32,33] that might lead to a missed opportunity for diagnosis and encourage affected patients to initiate CAM use. Although a number of barriers to treatment seeking have been identified, including the lack of recognition of emotional problems, preference for CAM, and stigma in white populations,* nonetheless, very little is known about the characteristics of ethnic underserved minority populations with depression receiving care in ambulatory primary care settings. This study seeks to examine the correlates of CAM use in underserved minority populations receiving depression care in primary care settings.

Understanding CAM use for depression is potentially beneficial because it allows for a better appreciation of the role of CAM use in the initiation or adherence to conventional depression treatments. It also allows for an understanding of the role of CAM use for self-care for emotional symptoms, including its effect on patient willingness to discuss mental health symptoms with providers and ultimately its effect on depression case finding in many primary care settings.

METHODS

This study was conducted at 2 large outpatient primary care clinics providing care to primarily underserved African American and Hispanic individuals located in Los Angeles, California. We conducted a prospective study using interviewer-administered surveys and medical record reviews at both study sites over a 1-year period. Face-to-face interviewer-administered surveys were conducted with a systematically selected sample of patients screening positive for depression using the Patient Health Questionnaire-2 (PHQ-2).[34] The surveys included depression assessment using the Patient Health Questionnaire-9,[35–38] CAM use and domains, self-rated health status, and sociodemographic variables. The studies were reviewed and approved by the institutional review boards of UCLA and Charles Drew University of Medicine and Science.

Study population

Participants were eligible to participate in the study if they screened positive for depression using the PHQ-2,[34]

---

*Narrow WE. One-year prevalence of mental disorders, excluding substance use disorders, in the U.S.: NIMH ECA prospective data. Population estimates based on U.S. Census estimated residential population age 18 and over on July 1, 1998.

were older than 18 years, spoke English or Spanish, and consented to a review of their medical records after the interview visit.

Measures

Demographic characteristics including age, gender, ethnicity, education, as well as health care coverage were collected. Additionally, self-rated health status was measured using a standardized 1-item measure with response options ranging from 1 to 5 (excellent to poor). Furthermore, participants' medical records were reviewed to document the use of psychotherapeutic medication and prior depression diagnosis. Participants were considered as having no depression if there was no diagnosis of depression within 9 months of the baseline interviews. Self-reported functional impairment was documented using the 10th item of the PHQ-9 Depression Questionnaire, on which patients indicate the extent that their identified depressive symptoms affected their social, vocational, or personal functioning using a 4-point Likert-type scale, with responses ranging from 0 (not at all) to 3 (extremely difficult).

Depression severity was assessed using PHQ-9.[35–38] The PHQ-9 is a brief, 9-item, self-report depression assessment measure specifically developed for use in primary care settings. The PHQ-9 scores each of the 9 DSM-IV criteria for depression through the patients' self-reported presence of each of the symptoms over a 2-week period as "0" (Not at All), "1" (Several Days), "2" (More than Half the Days), to "3" (Nearly Every Day), with possible scores ranging from

TABLE 1. CHARACTERISTICS OF STUDY SAMPLE AND BIVARIATE ANALYSIS (X^2 TEST) OF COMPLEMENTARY AND ALTERNATIVE MEDICINE UTILIZATION IN DEPRESSED PATIENTS IN PRIMARY CARE SETTINGS ($n = 415$)

		Complementary and alternative medicine utilization			
Independent variables	Total N (%)	Never/rarely N (%)	Moderate N (%)	Frequent N (%)	p-value
Age					0.657
<45	119 (29)	57 (48)	27 (23)	35 (29)	
45-59	211 (51)	83 (39)	54 (26)	74 (35)	
≥60	85 (21)	38 (45)	20 (34)	27 (32)	
Gender					0.038
Male	94 (23)	33 (35)	32 (34)	29 (31)	
Female	321 (77)	145 (45)	69 (22)	107 (33)	
Ethnicity					0.033
Hispanic	276 (66)	133 (48)	62 (23)	81 (29)	
African Americans	85 (21)	25 (29)	24 (28)	36 (42)	
Others	54 (13)	20 (37)	15 (28)	19 (35)	
Education					0.172
<6th grade	163 (41)	79 (49)	32 (20)	52 (32)	
9th–11th grade	64 (16)	26 (41)	20 (31)	18 (28)	
High school diploma	81 (20)	33 (41)	19 (24)	29 (36)	
College	93 (23)	30 (32)	28 (30)	35 (38)	
Medical care coverage					0.001
No	218 (53)	111 (51)	51 (26)	79 (40)	
Yes	197 (47)	67 (34)	50 (23)	57 (26)	
Self-rated health status					0.040
Excellent–Good	83 (20)	35 (42)	13 (16)	35 (42)	
Fair-Poor	332 (80)	143 (43)	88 (27)	101 (30)	
Self-reported functional impairment					0.845
No impairment	119 (29)	53 (45)	27 (23)	39 (33)	
With impairment	296 (71)	125 (42)	74 (25)	97 (33)	
Clinical depression diagnosis					0.500
No	293 (70)	128 (44)	74 (25)	91 (31)	
Yes	122 (30)	50 (41)	27 (22)	45 (45)	
Rx used for depression					0.261
No	299 (72)	132 (44)	76 (25)	91 (30)	
Yes	116 (28)	46 (40)	25 (22)	45 (39)	
Depression severity (PHQ-9)					0.012
Mild (PHQ < 10)	98 (24)	43 (44)	26 (27)	29 (30)	
Moderate (PHQ 10–14)	103 (25)	35 (34)	22 (21)	46 (45)	
Moderately severe (PHQ 15–19)	131 (32)	70 (53)	25 (19)	36 (28)	
Severe (PHQ ≥20)	81 (20)	28 (35)	28 (35)	25 (31)	

PHQ, Patient Health Questionnaire.

TABLE 2. COMPLEMENTARY AND ALTERNATIVE MEDICINE
UTILIZATION IN DEPRESSED PATIENTS IN PRIMARY CARE SETTINGS
($n = 415$)

Variables	N	%
CAM use		
Never or rarely use	178	42.9
Moderate use	101	24.3
Frequent use	136	32.8
Type of CAM used		
Whole medical systems		
Yes	32	7.7
No	383	92.3
Mind–body medicine		
Yes	198	47.4
No	217	52.3
Biologically based practices		
Yes	239	57.6
No	176	42.4
Manipulative and body-based practices		
Yes	37	8.9
No	378	91.1

CAM, complementary and alternative medicine.

0 to 27. The PHQ-9 has demonstrated usefulness as an assessment tool for the diagnosis of depression in primary care with acceptable reliability, validity, sensitivity, and specificity (PHQ-9 score ≤ 10 has a sensitivity of 88% and a specificity of 88% for major depression).

Finally, 15 items were employed to assess how frequently participants used CAM for the treatment of symptoms of depression during the 12-month period prior to the interview. These items included the following possible types of alternative medicine: (1) traditional remedies; (2) herbal remedies; (3) home remedies; (4) vitamin therapy; (5) prayer; (6) consulting a psychic; (7) consulting a faith healer; (8) consulting a priest/pastor; (9) consulting a traditional healer/practitioner (*curandero*, voodoo, mystic); (10) use of acupuncture; (11) relaxation and massage therapy; (12) use of *S*-adenosyl-L-methionine (SAMe); (13) St. John's wort; (14) 5-hydroxytryptophan; or (15) exercise. Frequency of use of any of the above types of CAM were measured via participant self-report with responses ranging from 1 = always to 5 = never. For each domain, the Cronbach's coefficient α was greater than .64. These types of CAM use were also categorized into the following four major CAM domains: (1) whole medical systems, (2) mind–body medicine, (3) biologically based practices, and (4) manipulative and body-based practices.

Statistical analysis

At the descriptive level, the distribution and frequency of all variables were examined. In the bivariate analysis, χ^2 tests were performed to document the association between the CAM utilization and independent variables. Multinomial

logistic regression was used to examine the association between independent variables and CAM utilization.

RESULTS

A total of 2321 patients were screened for depression using the PHQ-2.[34] Screening for depression was conducted to ensure an oversampling of patients with a likelihood of depression. From these, a total of 589 were eligible to participate in the study and 415 participants were enrolled into the study. Of these, 315 met the PHQ-9 criteria for mild to severe depression (PHQ-9 >10). The mean age for participants was 50.2 years (standard deviation [SD] = 11). Sixty-six percent (66%) ($n = 276$) were Latino and 21% ($n = 85$) were African American. About 47% ($n = 197$) of participants had no form of health insurance. In addition, about 23% (94) and 77% (321) were male and female, respectively. Table 1 further outlines the distribution of clinician diagnosis of depression (documented in medical record), self-reported functional impairment, and self-reported depression severity using PHQ-9.

The frequency of use of alternative health care for treatment of depressive symptoms in our sample is shown in Table 2. Forty-three percent (43%) of our sample indicated that they never or rarely used CAM, whereas 24% reported using CAM sometimes or often, and another 33% indicated that they use CAM frequently for treatment of their depressive symptoms. Among CAM users, biologically based practices were the most frequently reported (58%), followed by mind–body medicine (47%), manipulative and body-based practices (9%), and whole medical systems (8%). Our data reveal that nearly 13% of our sample reported utilizing SAMe, St. John's wort, or 5-hydroxytryptophan for treatment of their depressive symptoms. In addition, 22% of participants reported using a relaxation technique. Interestingly, 1 of 3 of the sample reported that they had used vitamin therapy for treatment of depressive symptoms.

Bivariate analysis was employed to examine the relationship between CAM use, demographic variables, self-reported health status, severity of depression, clinician diagnosis of depression, and psychotherapeutic prescription, with results reported in Table 1. Results indicated that at the bivariate level, 5 of the independent variables showed a statistically significant relationship with the use of alternative health care at $p < 0.05$. These were (1) gender; (2) ethnicity; (3) health care coverage; (4) severity of depression; and (5) self-rated health status. Participants with no health care coverage, those with moderate depressive symptoms, with a higher level of self-rated health status, male, and African Americans were more likely to use alternative health care for treatment of depression.

Multinomial logistic regression was used to examine the

TABLE 3. MULTINOMIAL LOGISTIC REGRESSION BETWEEN INDEPENDENT VARIABLES AND COMPLEMENTARY AND ALTERNATIVE MEDICINE UTILIZATION IN DEPRESSED PATIENTS IN PRIMARY CARE SETTINGS ($n = 415$)

Independent variables	χ^2	p-value	Never/rarely vs. moderate use		Never/rarely vs. frequent use	
			Exp (B)	CI	Exp (B)	CI
Age (yrs)	2.70	0.260	1.012	0.99–1.04	1.05	0.99–1.04
Gender	3.31	0.191				
Male			1.77	0.95–3.30	1.16	0.63–2.16
Female			1.00	—	1.00	—
Ethnicity	3.512	0.476				
Hispanic			0.81	0.33–1.96	0.75	0.32–1.77
African Americans			1.07	0.40–2.89	1.43	0.57–3.58
Others			1.00	—	1.00	—
Education (yrs)	4.39	0.111	1.23	0.99–1.04	1.05	0.87–1.28
Medical care coverage	14.36	0.001				
No			1.91	1.91–3.32	2.56	1.55–4.26
Yes			1.00	—	1.00	—
Self-rated health status (1–5)	7.93	0.019	1.45	1.01–2.09	0.87	0.64–1.17
Rx Used for depression	6.86	0.032				
No			1.12	0.64–2.21	0.56	0.33–0.97
Yes			1.00	—	1.00	—
Depression severity (PHQ-9)	17.27	0.008				
Mild (PHQ <10)			0.83	0.38–1.80	0.90	0.42–1.94
Moderate (PHQ 10–14)			0.69	0.31–1.53	1.65	0.79–3.46
Moderately severe (PHQ 15–19)			0.40	0.19–0.82	0.58	0.29–1.17
Severe (PHQ ≥20)			1.00	—	1.00	—

The reference category is Never/Rarely (use complementary and alternative medicine) = 1.

The χ^2 statistics is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model.

CI, 95% confidence interval for Exp (B); PHQ, Patient Health Questionnaire.

Nagelkerke $R^2 = 0.170$.

-2 Log Likelihood = 781.3.

χ^2 for overall model with $df_{22} = 64.9$ ($p < 0.0001$).

association between independent variables and CAM utilization. The independent variables included in the logistic regression model were first examined for colinearity. Table 3 reports the regression estimates of the effects of the independent variables on the use of alternative health care for treatment of depression. Our data show that 4 variables were associated with increased frequency of alternative health care utilization for treating depression. These variables were (1) lack of health care coverage; (2) being moderately depressed; (3) using psychotherapeutic prescription medications; and (4) poorer self-reported health status. Controlling for demographic characteristics, health care coverage remained one of the strongest predictors of CAM use. Those without health care converge were 1.9 and 2.6 times more likely to utilize moderate and high levels of CAM use, respectively, than their counterparts with health care insurance ($p < 0.001$). Those with a moderate level of depression symptoms, as indicated on PHQ-9, are among the most frequent users of CAM ($p < 0.008$). In addition, participants who do not take psychotherapeutic medications are also least likely to use CAM (odds ratio [OR] = 0.56). Finally, when moderate users of CAM are compared with nonusers, participants with a higher level of self-rated health status are more likely to use CAM (OR = 1.45).

DISCUSSION

This study shows that underserved African American and Hispanic individuals meeting the diagnostic criteria for depression or subsyndromal depression use CAM extensively for symptoms of depression. Over 57% of the sample reported using CAM sometimes or often (24%) and frequently (33%) for treatment of their depressive symptoms. Findings from our study are consistent with recent research showing 51% of Mexican American and 44% of African American women who reported themselves as having been diagnosed with depression also reported past-year use of CAM.[39] Previous studies show that the use of CAM is more common among people with psychiatric problems than in the rest of the population because fatigue, insomnia, chronic pain, anxiety, and depression are among the most commonly reported reasons for the use of complementary and alternative ther-

apies in community surveys.[26,40,41] Results from the few previous studies of the use of CAM among psychiatric outpatients reported in the literature are consistent with this speculation in showing high rates of CAM use.[39,42–50] Additionally, a national survey of CAM use[51] reported that the use of such treatments is more common among people with self-defined anxiety and depression than among people with any other commonly occurring chronic condition other than back or neck problems.

Controlling for demographic characteristics and other related variables, lack of health care coverage remains the strongest correlate of CAM use among this disadvantaged minority sample. These findings lead to some reasonable speculation that CAM among minority underserved individuals serves as a substitute for conventional care when access to care is limited or not available. Indeed, consistent with this notion, a recent study to determine the correlates of alternative health care utilization among Hispanic and African American adults residing in public housing[26,42] suggested that minority underserved populations utilize CAM as a substitute for conventional medical care.

Our data show that participants who were prescribed psychotherapeutic medications are also more likely to use CAM to treat their symptoms of depression than those who were not prescribed psychotherapeutic medications. Additionally, this study documented that those with moderate levels of depression are more likely to use CAM, when they are compared with those with severe depression. Therefore, one may also argue that some underserved minority individuals with depression symptoms use CAM as both complementary and initial step toward treatment of their depression-related symptoms. Stigma attached to psychiatric conditions may further deter patients from seeking such treatment from the conventional medical sector. In addition, African Americans typically have significantly lower rates of depression treatment seeking than whites[52] and higher treatment dropout rates than whites.[10] Yet African Americans and Hispanics are less likely than white persons to find antidepressant medication acceptable.

This study is one of the first attempts to better understand the correlates of the self-reported use of alternative health care among underserved Hispanics and African American individuals meeting the diagnostic criteria for depression or subsyndromal depression receiving care in public primary care settings. Even though the recent studies show conflicting results on efficacy of CAM in depression and anxiety,[53–56] since CAM is used so extensively for depression, understanding domains, types, and correlates of such use is imperative. This knowledge could be used to design interventions aimed at improving care for depression. Increasing consumption of CAM for depression-related symptoms by uninsured ethnic-racial groups in the United States calls for more attention to CAM use and its potential to aid conventional medical and mental services delivery. Additionally, it is particularly important for primary care and mental health

professionals to increase their own awareness of the types of complementary and alternative therapies that their patients may be using by asking their patients what type of CAM they may be taking and by improving communication with their patients about the benefits and potential risks of these therapies.[39,45] Training initiatives such as integrated CAM education in medical school and other health profession school curricula as well as training through continuing medical education and other related activities may help enhance a patient-centered approach addressing patients' use of CAM therapies.

The main shortcoming of this study is the cross-sectional design. Future studies should aim at (1) evaluating the temporal associations between CAM use and symptomatic depression management; (2) examining the complex decision-making process that predicts CAM use as an alternate or complementary depression self-care treatment modality; and (3) assessing the relationship between CAM use, conventional depression treatment, and objective and subjective outcomes for depression care. Additionally, we did not ask any question on use of homeopathy, Ayurveda, and Traditional Chinese Medicine (TCM). However, in an open-ended question, participants were asked about other products, remedies, etc., and none mentioned homeopathy or Ayurveda and TCM. Finally, some forms of CAM may be of greater appeal to some ethnic groups than others; therefore, additional studies with much larger sample sizes are needed to examine the association between type of CAM and ethnicity.

ACKNOWLEDGMENTS

REFERENCES

1. Robins LN, Regier DA, eds. Psychiatric Disorders in America: the Epidemiologic Catchment Area Study. New York: The Free Press, 1991.
2. Katzelnick DJ, Simon GE, Pearson SD, et al. Randomized trial of a depression management program in high utilizers of medical care. Arch Fam Med 2000;9:345–351.
3. Depression Guideline Panel. Depression in Primary Care: Volume 1. Detection and Diagnosis. Clinical Practice Guideline, Number 5 [AHCPR Publication No. 93-0550]. Rockville, MD: U.S. Department of HHS, Public Health Service, Agency for Health Care Policy and Research, 1993:23–75.
4. Luber MP, Hollenberg JP, Williams-Russo P, et al. Diagnosis, treatment, comorbidity, and resource utilization of de-

pressed patients in a general medical practice. Int J Psychiatry Med 2000;30:1–13.

5. Ballenger JC. Clinical guidelines for establishing remission in patients with depression and anxiety. J Clin Psychiatry 1999; 60(suppl 22):29–34.

6. Williams JW Jr, Kerber CA, Mulrow CD, et al. Depressive disorders in primary care: Prevalence, functional disability, and identification. J Gen Intern Med 1995;10:7–12.

7. Roose SP, Glassman AH, Seidman SN. Relationship between depression and other medical illnesses. JAMA 2001;286: 1687–1690.

8. Consoli SM. Depression and associated organic pathologies, a still under-estimated comorbidity: Results of the DIALOGUE study [in French]. Presse Med 2003;32:10–21.

9. Stewart WF, Ricci JA, Chee E, et al. Cost of lost productive work time among US workers with depression. JAMA 2003; 289:3135–3144.

10. Sue S, Zane N, Young K. Research on psychotherapy with culturally diverse populations. In: Handbook of Psychotherapy and Behavior Change, 4th ed. New York: John Wiley & Sons, 1994:783–817.

11. U.S. Department of Health and Human Services. Mental Health: Culture, Race, and Ethnicity—a Supplement to Mental Health: A Report of the Surgeon General. Rockville, MD. U.S. Department of HHS, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, 2001.

12. Barkin SL, Balkrishnan R, Manuel J, et al. Health care utilization among homeless adolescents and young adults. J Adolesc Health 2003;32:253–256.

13. Chung H, Teresi J, Guarnaccia P, et al. Depressive symptoms and psychiatric distress in low income Asian and Latino primary care patients: Prevalence and recognition. Community Ment Health J 2003;39:33–46.

14. Gelberg L, Andersen RM, Leake BD. The Behavioral Model for Vulnerable Populations: Application to medical care use and outcomes for homeless people. Health Serv Res 2000; 34:1273–1302.

15. Minsky S, Vega W, Miskimen T, et al. Diagnostic patterns in Latino, African American, and European American psychiatric patients. Arch Gen Psychiatry 2003;60:637–644.

16. Skaer TL, Sclar DA, Robison LM, et al. Trends in the rate of depressive illness and use of antidepressant pharmacotherapy by ethnicity/race: An assessment of office-based visits in the United States, 1992–1997. Clin Ther 2000;22:1575–1589.

17. Kirmayer LJ, Weinfeld M, Burgos G, et al. Use of health care services for psychological distress by immigrants in an urban multicultural milieu. Can J Psychiatry Rev Canadienne Psychiatrie 2007;52:295–304.

18. Bazargan M, Baker RS, Bazargan S. Correlates of recency of eye examination among elderly African-Americans. Ophthalmic Epidemiol 1998;5:91–100.

19. Bazargan M, Johnson KH, Stein JA. Emergency department utilization among Hispanic and African-American under-served patients with type 2 diabetes. Ethn Dis 2003;13:369–375.

20. Snowden LR. Bias in mental health assessment and intervention: Theory and evidence. Am J Public Health 2003;93:239–243.

21. Druss BG, Rosenheck RA. Association between use of unconventional therapies and conventional medical services. JAMA 1999;282:651–656.

22. Callahan EJ, Bertakis KD, Azari R, et al. The influence of depression on physician–patient interaction in primary care. Fam Med 1996;28:346–351.

23. Montano DE, Manders DB, Phillips WR. Family physician beliefs about cancer screening: Development of a survey instrument. J Fam Pract 1990;30:313–319.

24. Regier DA, Goldberg ID, Taube CA. The de facto U.S. mental health services system: A public health perspective. Arch Gen Psychiatry 1978,35:685–693.

25. Murray CJL, Lopez AD. The Global Burden of Disease: A Comprehensive Assessment of Mortality and Disability from Diseases, Injuries, and Risk Factors in 1990 and Projected to 2020. Boston: Harvard University Press, 1996.

26. Eisenberg DM, Davis RB, Ettner SL, et al. Trends in alternative medicine use in the United States, 1990–1997: Results of a follow-up national survey. JAMA 1998;280:1569–1575.

27. Ernst E, Rand JI, Stevinson C. Complementary therapies for depression: An overview. Arch Gen Psychiatry 1998;55:1026–1032.

28. Bann CM, Parker CB, Bradwejn J, et al. Assessing patient beliefs in a clinical trial of Hypericum perforatum in major depression. Depression Anxiety 2004;20:114–122.

29. Eliason BC, Huebner J, Marchand L. What physicians can learn from consumers of dietary supplements. J Fam Pract 1999;48:459–463.

30. Shaffer D, Fisher P, Dulcan MK, et al. The NIMH Diagnostic Interview Schedule for Children Version 2.3 (DISC-2.3): Description, acceptability, prevalence rates, and performance in the MECA Study. Methods for the Epidemiology of Child and Adolescent Mental Disorders Study. J Am Acad Child Adolesc Psychiatry 1996;35:865–877.

31. Shua-Haim J, Ross J. Alternative medicine in geriatrics: Competing with or complementing conventional medicine? Clin Geriatr 1999;7.

32. Walters P. Tylee A. Early recognition and management of depression in primary care. In: Mai; M, Lopez-Ibor JJ, Sartorius N, et al. eds. Early Detection and Management of Mental Disorders. Chichester, UK: John Wiley & Sons, 2005:249–277.

33. Aragones E, Labad A, Pinol JL, et al. Somatized depression in primary care attenders. J Psychosom Res 2005;58: 145–151.

34. Kroenke K, Spitzer RL, Williams JB. The Patient Health Questionnaire-2: Validity of a two-item depression screener. Med Care 2003;41:1284–1292.

35. Spitzer RL, Kroenke K, Williams JB. Validation and utility of a self-report version of PRIME-MD: The PHQ primary care study. Primary Care Evaluation of Mental Disorders. Patient Health Questionnaire. JAMA 1999;282:1737–1744.

36. Rost K, Smith J. Retooling multiple levels to improve primary care depression treatment. J Gen Intern Med 2001;16:644–645.

37. Kroenke K, Spitzer RL, Williams JB. The PHQ-9: Validity of a brief depression severity measure. J Gen Intern Med 2001; 16:606–613.

38. Kroenke K, Spitzer R. The PHQ-9: A new depression and diagnostic severity measure. Psychiatr Ann 2002;32:509–521.

39. Wu P, Fuller C, Liu X, et al. Use of complementary and alternative medicine among women with depression: Results of a national survey. Psychiatr Serv 2007;58:349–356.

40. Astin JA. Why patients use alternative medicine: Results of a national study. JAMA 1998;279:1548–1553.

41. Eisenberg DM, Kessler RC, Foster C, et al. Unconventional medicine in the United States: Prevalence, costs, and patterns of use. N Engl J Med 1993;328:246–252.

42. Bazargan M, Norris K, Bazargan-Hejazi S, et al. Alternative healthcare use in the under-served population. Ethn Dis 2005; 15:531–539.

43. Glass RM. Awareness about depression: Important for all physicians. JAMA 2003;289:3169–3170.

44. Kessler RC, Berglund P, Demler O, et al. The epidemiology of major depressive disorder: Results from the National Comorbidity Survey Replication (NCS-R). JAMA 2003;289: 3095–3105.

45. Badger F, Nolan P. Use of self-chosen therapies by depressed people in primary care. J Clin Nurs 2007;16:1343–1352.

46. Pellegrini N, Ruggeri M. The diffusion and the reason for the use of complementary and alternative medicine among users of mental health services: A systematic review of literature [in Italian]. Epidemiol Psichiatr Sociale 2007;16:35–49.

47. Fang L, Schinke SP. Complementary alternative medicine use among Chinese Americans: Findings from a community mental health service population. Psychiatr Serv 2007;58:402–404.

48. Kessler RC, Soukup J, Davis RB, et al. The use of complementary and alternative therapies to treat anxiety and depression in the United States. Am J Psychiatr 2001;158:289–294.

49. Pilkington K, Rampes H, Richardson J. Complementary medicine for depression. Expert Rev Neurother 2006;6:1741–1751.

50. Davidson JR, Rampes H, Eisen M, et al. Psychiatric disorders in primary care patients receiving complementary medical treatments. Compr Psychiatry 1998;39:16–20.

51. MacLennan AH, Wilson DH, Taylor AW. The escalating cost and prevalence of alternative medicine. Prev Med 2002;35: 166–173.

52. Sue S, Fujino DC, Hu LT, et al. Community mental health services for ethnic minority groups: A test of the cultural responsiveness hypothesis. J Consult Clin Psychol 1991;59:533–540.

53. Meeks TW, Wetherell JL, Irwin MR, et al. Complementary and alternative treatments for late-life depression, anxiety, and sleep disturbance: A review of randomized controlled trials. J Clin Psychiatry 2007;68:1461–1471.

54. John PJ, Sharma N, Sharma CM, et al. Effectiveness of yoga therapy in the treatment of migraine without aura: A randomized controlled trial. Headache 2007;47:654–661.

55. Saeed SA, Bloch RM, Antonacci DJ. Herbal and dietary supplements for treatment of anxiety disorders. Am Fam Physician 2007;76:549–556.

56. Thachil AF, Mohan R, Bhugra D. The evidence base of complementary and alternative therapies in depression. J Affect Disord 2007;97:23–35.

Address reprint requests to:
Mohsen Bazargan, Ph.D.
Research Centers in Minority Institutions (RCMI)
Charles Drew University of Medicine and Science
1731 East 120th Street
Los Angeles, CA 90059

E-mail: mobazarg@cdrewu.edu