

Treatment of Self-Reported Depression Among Hispanics and African Americans

Mohsen Bazargan, PhD
Shahrzad Bazargan-Hejazi, PhD
Richard S. Baker, MD

Abstract: This study applied the Behavioral Model for Vulnerable Populations framework to examine the correlates of depression and the receipt of medical treatment among low-income Hispanics and African Americans residing in public housing. We compared three groups: those who reported (1) self-diagnosed but without physician-diagnosed depression, (2) depression diagnosed by a physician but who did not receive pharmaceutical treatment, and (3) depression diagnosed by a physician and antidepressant pharmacotherapy consumed by patient. Random samples of 287 adults from three public housing communities were surveyed. Over 48% of this sample reported that they were suffering from depression. One out of three people who reported being depressed also said that a physician had never diagnosed his or her condition. Only 40% of those who said that a physician had diagnosed depression also reported taking antidepressant medication. Untreated depression among underserved racial and ethnic minorities is alarming and points to an urgent need for intervention.

Key words: Depression, African American, Hispanic, behavioral model, vulnerable populations.

Despite an aggressive awareness campaign on mental health disorders emerging from the National Institute of Mental Health and a U.S. Surgeon General's Report,¹ there still exists an epidemic of untreated and poorly treated mental disorders in the United States,² especially among vulnerable groups such as Hispanics, African Americans, and the underinsured generally.³⁻⁷ A recent clinic-based screening study documents that one half of Latino patients suffer from depressive symptoms indicative of psychiatric distress.⁸ Yet, data from the National Ambulatory Medical Care Survey shows that the rate of office-based visits in which

DR. BAZARGAN is an Associate Professor in the Department of Family Medicine and the Research Centers in Minority Institutions (RCMI) at Charles R. Drew University of Medicine & Science. *DR. BAZARGAN-HEJAZI* is an Assistant Professor in the Department of Psychiatry at Charles R. Drew University of Medicine & Science and in the Department of Psychiatry at UCLA. *DR. BAKER* is the Director of RCMI at Charles R. Drew University of Medicine & Science and an Associate Professor at the David Geffen School of Medicine at UCLA. Address correspondence to: Mohsen Bazargan, PhD, Research Centers in Minority Institutions (RCMI), Charles R. Drew University of Medicine and Science, 1731 East 120th Street, Los Angeles CA 90059; Tel: (310) 761-4722; Fax: (310) 631-5915; Email: mobazarg@cdrewu.edu.

Received March 8, 2004; revised October 20, 2004, and December 28, 2004; accepted January 3, 2005.

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.⁹ This national study documents that in 1997 the population-adjusted rate for the use of antidepressant medications among African Americans remained less than half of that observed among whites.

Ample evidence points to an association between higher rates of chronic conditions and symptoms of depression in the adult population.¹⁰⁻¹³ The presence of concomitant depressive symptoms among members of ethnic minority groups who have chronic conditions has been shown to be associated with a substantially greater health burden than the burden borne by their counterparts without depression or by depressed individuals without chronic conditions.^{12,13} Yet, minority patients are more likely to report barriers to seeking help, including perceived separation between mental health and general health, as well as stigma.¹⁴ From a mental health perspective, the underdelivery of health services, higher disability, and greater frequency of medical illness (such as hypertension and diabetes) among Hispanic and African Americans increase their risk of ill health multifold.¹⁵⁻¹⁷

Numerous studies indicate that there is an urgent need for aggressive intervention toward accurately identifying and treating underserved minority individuals with mental disorders. However, little attention has been devoted to understanding how patient characteristics (such as socioeconomic status, ethnicity, health beliefs, and attitudes) and accessibility of medical care influence the underutilization of mental health services. To address this gap in the literature, correlates of self-reported depression and depression treatment among publicly housed Hispanic and African Americans (one of the most vulnerable segments of our population) were examined. A random sample from three public housing communities in Los Angeles, California, was selected.

Public housing communities represent an important and centralized source of community-level information concerning socioeconomically disadvantaged households with children. They provide shelter to low-income families that might otherwise be homeless or forced to live in substandard housing. These communities function as the backbone of the residential safety net, serving a role similar to that of urban public hospitals in the health care safety net. In 1998, 3 million residents occupied the 1.2 million subsidized public housing units in the United States.¹⁸

Conceptual model. This study adopts the revised and expanded Behavioral Model for Vulnerable Populations.^{19,20} The original Behavioral Model, developed by Andersen et al.,¹⁹⁻²³ has been widely used for investigating health service utilization among minority populations. This model represents health care utilization as the end product of a complex pattern of interactions among predisposing, enabling, and need-for-care characteristics. Predisposing characteristics exist prior to the onset of illness and include those characteristics that describe the propensity of individuals to use health care services. The predisposing vulnerable domain includes demographic characteristics, social structural characteristics, childhood characteristics, living conditions, psychological resources, and health belief characteristics.¹⁹

The second part of the behavioral framework for vulnerable populations, namely enabling characteristics, covers the individual's ability to use health care services, should the need arise. The enabling vulnerable domain includes personal/family resources (such as a regular source of care), insurance status, affordability of medical care, income, receipt of public benefits, competing needs, and availability and use of information sources.^{19,20}

Although both predisposing and enabling components are necessary conditions for use of health services, they do not suffice to ensure it. To use health care services, the individual also must perceive some illness. Need-for-care characteristics, which involve perceived and evaluated health status, are the most immediate cause of the utilization of health services. Measures of perceived illness may include the symptoms, self-reported health status, and side effects or complications of medical conditions/procedures. Evaluated health measures are actual health problems that the individual is experiencing and those that have been clinically identified or assessed by health practitioners. Implicit in the model is the view that perceived need would better help us to understand care-seeking behavior, whereas evaluated need is more closely related to the type and amount of treatment provided after a patient presents to a medical care provider. This framework presupposes that a clinician's evaluation of the patient may be affected by the patient's vulnerability; similarly, the patients' perception of his or her status may be related to his or her vulnerability. The personal health practices domain includes diet, exercise, self-care, and adherence to care.^{19,20}

Methods

Sample. Data for this investigation were derived from the Services Access in Urban Public Housing study (SAUPH). This study was conducted as a community-based, interviewer-administered, cross-sectional survey designed to identify barriers to health care access for residents of federally mandated and municipally administrated urban public housing developments. A population-based cross-sectional study design was employed to recruit a stratified random sample of heads of households from three geographically well-defined urban public housing communities located in the South, South West, and East sections of Los Angeles county. The Los Angeles County Community Development Commission manages each of these communities. From the sampling frame of 1,394 households in three public housing communities, a 30% random sample of households stratified by community was selected, yielding 418 households as potential participants. Of these households, 27 (6.5%) were ineligible because the occupants did not speak either English or Spanish, or the residence was unoccupied. Of the remaining 391 eligible households, residents of 287 (73.4%) completed the interview. Reasons for nonparticipation included the following: 23 (5.9%) were not contacted or did not show for the interview and 81 (20.7%) refused to participate.

The SAUPH survey questionnaire administered in this study includes items on social and demographic characteristics, use of services, and measures of health status and acculturation, as well as insurance coverage and other benefits programs. Prior to administration, the survey instrument was reviewed and modified to ensure that

questions would be appropriate for a vulnerable population with limited literacy. The English language version of the questionnaire was subsequently translated into Spanish. Three independent translation strategies were used to achieve adequate translations. These strategies included a forward translation, independent back-translation, conceptual equivalence rating, consensus review by a committee of four bilingual persons from four Hispanic groups (Mexican, Puerto Rican, Cuban, and Colombian), and an independent and final retranslation. English and Spanish language versions of the survey instrument were further modified based on the information gained from focus groups that were specifically conducted to test the understanding and the validity of the instrument in the population of interest.

An initial letter to potential participants contained a description of the project, a contact number, and a request for participation. One week later, staff members made telephone calls to potential participants who had not responded to the letter. Up to 10 calls were made alternately during the day, evening, and on Saturdays. Staff members went door to door to recruit potential participants who did not respond to the letter or the phone calls.

Interviewers made appointments to conduct face-to-face interviews either at a local community center or at the participants' homes. Ten public housing residents who were hired and trained as community resident assistants conducted all interviews. Five interviewers were Latinas, four were African Americans, and one was a non-Latino white. All interviewers underwent a 4-week training program that used a standard protocol. The protocol included sessions on interpersonal communication, face-to-face interviewing, probing techniques, telemarketing, introduction to the survey instrument, and mock survey sessions. Each interview lasted approximately 90 minutes. Following the completion of the survey, participants received a payment of \$20 and signed a receipt. This study was reviewed and approved by the Institutional Review Board of the Charles R. Drew University of Medicine and Science.

Statistical analysis. The distribution and frequency of all items were examined and later used to construct independent scales and indices. Reliability analysis was performed to study the properties of measurement scales. The reliability analysis provides information about the relationships between individual items in the scale (SPSS). In the bivariate analysis, chi square tests, and analysis of variance (ANOVA) were performed to document the association between depression and treatment status and predisposing, enabling, and need-for-care characteristics. Finally, by dichotomizing scale variables (using the median), odds ratios (ORs) are provided for all significant bivariate analyses.

Measures: Predisposing characteristics. The distribution of predisposing characteristics used as predictors of depression status among our sample of African American and Hispanic patients is displayed in Table 1. There were nine predisposing characteristics measured: age, gender, education, ethnicity, employment status, family size, ability to speak English, perceived racial/ethnic discrimination, and health locus of control. The perceived racial discrimination scale assesses routine and relatively minor experiences of unfair treatment^{24,25} using eight items forming one index. The scale's stem asks participants: In your day-to-day life, how often

Table 1.**DISTRIBUTION OF (1) PREDISPOSING, ENABLING, AND NEED-FOR-CARE CHARACTERISTICS AND (2) DEPRESSION STATUS AND TREATMENT OF SAMPLE ($n = 258$)**

Predisposing characteristics	N (%)	Enabling characteristics	N (%)
Age	Mean = 44.6 SD = 16.5	Medical coverage	
< 30	61 (24)	Yes	221 (85)
30 – 44	95 (37)	No	37 (14)
45 – 59	52 (20)	Financial strain index	Mean = 3.9 SD = 0.83
60+ ,	50 (19)	Unable to buy food	120 (47)
Gender		Unable to buy clothes	156 (61)
Male	29 (12)	Unable to pay rent	27 (11)
Female	229 (88)	Unable to pay bills	60 (23)
Ethnicity		Unable to make ends meet	110 (43)
African Americans	114 (44)	MD visits last 12 months	Mean = 5.8 SD = 5.2
Hispanic	144 (56)	Mean MD visits	Mean = 4.2 SD = 0.9
Education (years)	Mean = 9.6 SD = 4.0	Accessibility index	
< 9 th Grade	87 (34)	(difficult vs. little or no diff.)	62 (24)
9 th – 11 th grade	69 (27)	Get medical care	46 (18)
HS diploma	64 (25)	Get a routine Physical exam	39 (26)
Some college	27 (11)	See Doctors when want to	54 (21)
College diploma	11 (04)	Visit MD when is needed	47 (18)
Employment status		Visit MD during office hours	
Unemployed	184 (71)		
Full/part time	74 (29)		
Family Size	Mean = 3.0 SD = 1.7	Needs-for-Care characteristics	N (%)
One person	45 (17)	Self-reported health Status	
Two persons	63 (24)	Excellent	16 (06)
Three persons	51 (20)	Very Good	35 (14)
For or more persons	99 (38)	Good	64 (25)
Ability to Speak English	104 (40)	Fair	101 (39)
US Born	41 (16)	Poor	42 (16)
Speak very well	24 (09)	Mean = 5.8 SD = 5.2	
Speak well	43 (17)	# of chronic condition Disability Status	
Do not speak well	46 (18)	No	206 (80)
Do not speak English at all	Mean = 24.8 SD = 5.6	Yes	52 (20)
Health Locus of Control	Mean = 20.1 SD = 5.9	Complimentary medicine	Mean 2.6 SD = 1.8
Internal	Mean = 23.0 SD = 6.0	For prevention (mean)	Mean = 2.7 SD = 1.9
Chance	Mean = 38.9 SD = 8.6	During sickness (mean)	
Racial discrimination			
Outcome variable			N (%)
Self-report of depression			
No depression			149 (57.8)
Self-diagnosed depression (not seen/confirmed by a doctor)			33 (12.8)
Physician diagnosed (consuming no anti-depression medication)			29 (11.2)
Physician diagnosed (taking prescription medication)			47 (18.2)

have any of the following things happened to you, (with response options ranging from 1 = almost every day to 6 = never): (a) being treated with less courtesy than others; (b) being treated with less respect than others; (c) receiving poorer service than others in restaurants or stores; (d) people acting as if you are not smart; (e) others feeling they are better than you; (f) others thinking you are dishonest; (g)

being called names or insulted; and (h) being threatened or harassed. Williams et al.²⁴ have reported high internal consistency ($\alpha = 0.88$) for this scale; similarly, in our sample, the Cronbach's alpha was 0.87.

The Multidimensional Health Locus of Control (MHLC) scale is employed to assess beliefs concerning the health locus of control.²⁶ The MHLC scale consists of three 6-item scales using the Likert format: (1) internal health locus of control (IHLC) is the extent to which one believes that internal factors are responsible for health/illness; (2) powerful others' health locus of control (PHLC) is the belief that one's health is determined by powerful others; and (3) chance health locus of control (CHLC) measures the extent to which one believes that health and illness is determined by luck or accident. The MHLC scales have also been used in hundreds of studies. Previous studies have shown these scales to be moderately reliable (i.e., they have Cronbach's alphas in the 0.60–0.75 range and test–retest stability coefficients ranging from 0.60–0.70). The scales are presented in a 6-point Likert format ranging from strongly disagree (=1) to strongly agree (=6); scores on these subscales range from 6–36. The internal consistency of these multi-item subscales of our data was marginal: the Cronbach's alphas for IHLC, PHLC, and CHLC were 0.60, 0.65, and 0.61, respectively.

Enabling characteristics. The distribution of the enabling characteristics measured is also listed in Table 1. There were four indices for enabling characteristics: accessibility and availability of medical services, continuity of medical care, affordability (medical coverage), and financial strain. Accessibility and affordability of medical care were measured using two indices. The first index, *accessibility to medical care*, measured responses to five items on a Likert scale (1 = extremely difficult to 5 = not difficult at all). Items include: (1) Overall, how difficult is it for you to get medical care? (2) How difficult is it to see a doctor when you would like medical care? (3) How difficult is it for you to visit a doctor when you need medical care? (4) How difficult is it for you to visit doctors during the hours they are in their offices? and (5) How difficult would it be for you to get a routine physical exam if you wanted one? The mean sum score of the recorded items was calculated; scores ranged from 1–5, with higher values signifying less difficulty attaining medical care. The internal consistency of this multi-item indicator resulted in a Cronbach's alpha reliability of 0.82.

The second index, *affordability of medical care*, comprised one item. This item taps into whether the participants are covered by health insurance. *Financial strains* were measured by six items with responses on a Likert scale (1 = always to 5 = never). Items include: In the past 12 months, how frequently were you unable to (1) buy the kind of food you feel your family should have? (2) buy the amount of food you feel your family should have? (3) buy the clothes you feel your family should have? (4) pay your rent/mortgage? (5) pay your monthly bills? and (6) make ends meet? The average of this summated score represents the financial strain of the household; a higher score (on scale of 1–5) represents fewer financial problems. The internal consistency of this multi-item scale was examined using Cronbach's alpha, which was found to be 0.84. Finally, *continuity of medical care* was assessed by whether the number of office-based physician visits within the past year was below the sample median.

Need-for-care characteristics. The distribution of need-for-care characteristics measured is also listed in Table 1. There were four need-for-care characteristic indices: self-rated health status, number of physician-diagnosed chronic conditions, use of alternative medicine, and disability status. *Medical status* was assessed by asking the respondents to check off items on a list of eight medical conditions, all of which were diagnosed by a doctor (diabetes, hypertension, heart problems, lung and respiratory diseases, arthritis, gastrointestinal diseases, obstetrical/gynecological problems, and blood circulation problems). In addition, a standard *perceived self-rated health status* was measured by asking “Would you say your health, in general, is excellent, very good, good, fair, or poor?” and “In the past 12 months, how frequently have you been sick?” with response options of always (= 1) to never (= 5). *Disability status* was measured by a dummy code. A disabled person was coded as 1 and a nondisabled person was coded as 0.

Complementary and alternative medicine (CAM) was assessed using 22 items forming two indices. Each scale is associated with 11 items regarding (1) traditional remedies, (2) herbal remedies, (3) home remedies, (4) vitamin therapy, (5) prayer, (6) consulting a psychic, (7) consulting a Christian faith healer, (8) consulting a priest/pastor, (9) consulting an herbalist, (10) consulting a spiritual healer (*curandero*, voodoo, mystic), and (11) use of over-the-counter medicine. Participants were asked to report how frequently they used the above-mentioned alternative sources of care in the past 12 months (1) to prevent sickness and (2) when feeling sick. The scales were presented in a 5-point Likert format ranging from 1 (always) to 5 (never), and average scores on these subscales ranged from 1–5. Therefore, the first subscale represents the use of alternative health care and self-medication for preventive purposes, whereas the second subscales represent the use of alternative health care during sickness. Within these domains, Cronbach’s coefficient alphas for the 11 variables were greater than 0.64.

The outcome measure, the self-report of depression and receiving medical treatment among Hispanic and African Americans in public housing, was measured by asking participants to report whether they were depressed, if a doctor told them that they were depressed, and finally, whether they were taking any prescription medication for their depression.

Results

Table 1 shows detailed characteristics of the heads of household. The mean age of the heads of household was 45 years ($SD = 16.5$); the range was 18–88 years. The majority of respondents (89%) reported a female head of household. The majority of the heads of households (60%) reported having no high school diploma. Seventy-three percent of our sample reported being unemployed and over 87% reported at least one chronic medical condition. Table 2 shows that 48% of this sample reported that they were suffering from depression. However, one out of three persons who reported being depressed also reported that no physician had ever diagnosed them for that condition. *Conversely*, only 40% of those who said that a physician had diagnosed them also reported being on antidepressant medication.

The first three columns of Table 2 set up a comparison of those with and without depression. Our data show that age, size of family, perceived racial discrimination, financial strain, accessibility and availability of medical services, continuity of care, perceived health status, number of chronic illnesses, use of complementary and alternative medicine, and disability status are all significantly associated with depression. Odds ratios for those variables that showed significant associations with depression status are provided. Comparing those who reported no depression with those who claimed to be depressed, Table 2 indicates that those who reported (1) being older (OR = 2.1), (2) living in less crowded housing (OR = 0.55), (3) a higher level of perceived racial discrimination (OR = 1.7), (4) less accessibility to medical care (OR = 2.1), (5) a greater number of doctor's visits, (6) more financial problems (OR = 0.41), (7) a greater number of major chronic conditions (OR = 4.3), (8) poorer perceived health status (OR = 4.8), (9) greater dependence on alternative medicine (OR = 0.57 and OR = 0.55 for CAM for prevention and during sickness, respectively), and (10) being disabled (OR = 2.9), were more likely to be depressed.

The second three columns of Table 2 set up a comparison of physician-diagnosed respondents with self-diagnosed respondents. Age, ethnicity, employment status, size of family, affordability (health coverage), number of doctor's visits within last 12 months, perceived health status, and disability status were significantly associated with diagnoses of depression. Similarly, ORs for statistically significant associations are provided. Our data indicate that (1) African Americans (compared with Hispanic; OR = 0.2), (2) those who were younger (OR = 4.7), (3) those who were unemployed (OR = 0.29), (4) those who lived in more crowded housing (OR = 0.31), (5) those who reported less frequent MD visits (OR = 6.0), (6) those with fewer chronic conditions (OR = 4.8), (7) those with a higher level of perceived health status (OR = 6.2), and (8) those who were not disabled (OR = 6.5) were all more likely to report that they had depression that had not been diagnosed by a physician.

Finally, the last column of Table 2 provides correlates of self-reported depression and receipt of treatment in our sample. Using ANOVA and chi square tests, four categories of self-reported depression and receiving treatment were compared: (1) self-report of no depression, (2) self-diagnosed but not physician-diagnosed depression, (3) depression diagnosed by a physician but pharmaceutical treatment not received, and (4) depression diagnosed by a physician and antidepressant pharmacotherapy taken. Table 2 shows that participants who were diagnosed by a physician and consumed prescribed antidepressants were the oldest of all four groups (average age of prescribed anti-depressant users is 12 years older than average age of self-diagnosed; chi square = 6.6; $p < 0.05$ or $F = 6.6$; $p < 0.05$). Depressed individuals who were not diagnosed by a physician lived in households with a smaller number of residents than those who were diagnosed and medicated ($F = 4.1$; $p < 0.05$). Physician-diagnosed subjects were less likely to be working part- or full-time than undiagnosed or nondepressed individuals (chi square = 10.3; $p < 0.05$). Similarly, those diagnosed with depression but not consuming medication were among the participants with the most difficulty speaking English ($F = 2.6$; $p < 0.05$). Those who reported depression were among the participants with a lower level of perceived

Table 2.**CORRELATES OF SELF-REPORTS OF DEPRESSION STATUS AND RECEIVING TREATMENT AMONG THE HEADS OF HOUSEHOLD**

Independent variables/factors	Not-depressed vs. depressed			Self-diagnosed vs. MD-diagnosed (n = 109)			Depression status (n = 258) F or (²) test
	OR	95% CI	p	OR	95% CI	p	
Predisposing Characteristics	2.10	1.24-3.43	0.005	4.70	1.95-12.10	0.001	(32.5)
Gender (female)	—	—	—	—	—	—	—
Ethnicity (African-Americans)	—	—	—	0.20	0.20-0.90	0.040	—
Health locus of control	—	—	—	—	—	—	—
Internal	—	—	—	—	—	—	2.9
Chance	—	—	—	—	—	—	—
Powerful others	—	—	—	—	—	—	—
<i>Vulnerable domains</i>							
Employment status (employed)	—	—	—	0.20	0.15-0.73	0.009	(9.4)
Family size	0.55	0.32-0.91	0.023	0.31	0.13-0.73	0.008	3.7
Ability to speak English	—	—	—	—	—	—	—
Racial discrimination	1.70	1.14-2.75	0.040	—	—	—	3.2
Enabling Characteristics							
Accessibility	2.12	1.30-3.50	0.004	—	—	—	4.6
Medical coverage (no insurance)	—	—	—	1.84	1.07-3.17	0.027	(6.9)

<i>Vulnerable domains</i>							
Financial strain	0.41	0.25-0.68	0.001	—	—	—	6.9
Number of MD visits (12 months)	2.32	1.50-3.85	0.001	6.00	2.47-15.24	0.001	8.5
Need-for-care characteristics							
Self-rated health status	4.74	2.74-8.20	0.001	6.21	2.40-16.10	0.001	20.1
Chronic conditions (<i>n</i>)	4.34	2.46-7.66	0.001	4.80	1.81-12.00	0.001	28.5
<i>Vulnerable domains</i>							
Disability status (disabled)	2.97	1.58-5.58	0.001	6.50	1.83-23.30	0.004	(25.3)
CAM for prevention	0.57	0.34-0.90	0.024	—	—	—	3.9
CAM during sickness	0.55	0.34-0.92	0.026	—	—	—	3.2

Abbreviations: CAM, complimentary and alternative medicine CI, confidence intervals; OR, odds ratio; —, nonsignificant coefficient.

OR for scale variables are calculated by dichotomizing them from median. For example, OR = 1.7 for racial discrimination indicates that those who identified above the median for racial discrimination index are 1.7 times more likely than those below the median to report that they are suffering from depression.

All reported coefficients in the last columns are statistically significant: $p < 0.05$.

racial/ethnic discrimination ($F = 3.2$; $p < 0.05$). Those who were not diagnosed with depression as well as those diagnosed with depression with no medication reported the highest level of financial strain ($F = 6.9$; $p < 0.05$). In addition, prescribed antidepressant users reported poorer physical health status than all others ($F = 44.1$; $p < 0.05$). Those who were diagnosed by a physician, but were not using prescribed antidepressants, reported the lowest level of affordability ($F = 3.6$; $p < 0.05$) and most difficulty ($F = 4.6$; $p < 0.05$) in the utilization of medical services.

Undiagnosed individuals with depression were found to have the lowest number of office-based physician visits, whereas those who consumed prescription antidepressants reported the highest level of continuity of care ($F = 2.9$; $p < 0.05$). Furthermore, self-diagnosed individuals reported the highest level of dependence on traditional remedies and alternative medicine among all groups ($F = 3.9$ and 3.2 ; $p < 0.05$ for both traditional remedies and use of over-the-counter medication, respectively). In addition, those who consumed prescribed antidepressants were identified with the lowest level of internal locus of health control ($F = 3.0$; $p < 0.05$). Finally, a higher percentage of subjects consuming anti-depressant drugs were detected among those who were disabled (chi square = 23.6; $p < 0.05$).

Discussion

This study documents a significant gap in seeking mental health care and treatment of depression among underserved minority adults living in public housing. Forty-eight percent of our sample reported that they were suffering from depression. Yet, one out of three suffering from symptoms of depression had never gone to a physician for these symptoms. In addition, 40% of those who were diagnosed with depression by a physician reported using no therapeutic treatment. African Americans and Latinos have been shown more likely than whites to terminate mental health treatment prematurely.⁵ Our data show that both the ability to speak English and affordability are factors that are significantly associated with the use of antidepressant medications among those diagnosed with depression by health practitioners. These findings point to disparities between members of minority groups who seek mental health treatment and their majority group counterparts.

The characteristics in the vulnerable domains of the behavioral model are the core concepts that explain the self-reporting of depression and the receipt of medical treatment among our random sample of underserved, publicly housed adult heads of household. Perceived health status, affordability and financial strain, as well as continuity of medical care significantly correlate with self-reported depression. Our study echoes the recent U.S. Surgeon General's Report showing that many Americans have limited access to mental health services.⁶ Particularly, members of minority groups have less access than others and this may contribute to poorer outcomes.²⁷ Health insurance coverage facilitates seeking treatment; widening the scope of coverage would benefit members of minority groups multifold.³ Minority individuals lack private health insurance in disproportionate numbers, a gap that coverage from public sources cannot eliminate.⁶

Our data show that the use of complementary and alternative treatments significantly correlates with self-reported depression. Community- and clinic-based

research reveal converging evidence pointing to multiple factors leading to the use of alternative medicine among disadvantaged minority populations.²⁸⁻³³ Emerging evidence associates financial strain, accessibility to, and affordability of conventional medical care with the use of alternative health care among underserved minorities.³⁴ Therefore, further research examining the use of CAM among minority populations with depression and other mental illnesses is needed.

We found that the perception of discrimination and racism is significantly correlated with depression status in our sample of Hispanics and African Americans. This finding agrees with previous research reporting that racism and discrimination are two factors contributing to depression in ethnic minority groups.⁴ Underserved minority individuals encounter racism and discrimination on a daily basis, which can lead to emotional distress.³⁵⁻³⁷ When a person perceives an act as racist, his or her psychological and physiologic stress responses are triggered.⁴ The cross-sectional nature of this study limits, however, our ability to postulate a causal relationship between the outcome variable and the measure of discrimination.

The data show that, in our sample, perceived health status and number of chronic conditions stand out as two of the major factors associated with self-reported depression. Indeed, numerous studies have documented that the prevalence of depression is greater in minority groups with poor health status.^{4,13} However, our data reveal that health status is related to the treatment of depression. Interestingly, those who have poorer health status and are diagnosed with depression by a physician are more likely to use antidepressant medication than their counterparts who report better physical health. Yet, among those who reported suffering from symptoms of depression, those with poorer health are more likely to report that a physician had diagnosed their depression. This might mean that only those suffering substantially from poorer health get into formal treatment, and those with less severe health conditions wait until their physical condition deteriorates before they see a doctor. The process of self-realization of mental illness and of seeking mental health care are important research items that must be widely investigated, particularly among underserved minority groups, if an effective intervention reducing mental health disparities between different segments of the population is to be achieved.

Our data statistically document an association between receiving treatment for depression and continuity of care (frequency of office-based physician visits). Those who reported a lack of continuity of care were less likely than others to be diagnosed for depression by a physician. This finding points to a need for greater efforts, particularly in inner-city communities and public housing settings, toward providing more continuity of care among underserved populations. Continuity as well as a consistent source of care may help bridge the gap in access to mental health services for minority populations. It merits emphasis that one out of two heads of household in our sample reported no continuity or regular source of care.

The gender difference in the rate of prevalence and incidence of depression is one of the most consistent findings in psychiatric epidemiology.³⁸⁻⁴¹ Our data, however, show no gender differences in reporting self-diagnoses of depression. We can offer at least two plausible explanations for these findings. First, one recent longitudinal population-based study reported no significant gender differences in

self-reporting symptoms of depression, even after taking into account the higher level of depressive symptoms in women and the influence of other covariates.³⁹ This study documented similar depressive symptoms among men and women in this community sample.³⁹ Second, only 12% ($n = 29$) of our sample were men, and the severe skewing of data resulting from this small male sample may generate insufficient power for detecting an association between gender and self-report of depression. It is important to notice that national data released by the U.S. Department of Housing and Urban Development¹⁸ reports that women head almost 80% of homes in public housing, a circumstance reflected in our sample.

This study is one of the first attempts to better understand the correlates of self-reported depression status among underserved Hispanics and African Americans. Review of the existing research on depression shows that these minority groups (both people who claimed they are suffering from depression but had never been diagnosed by a physician, as well as those who do not consume antidepressant medication even though they have been diagnosed for depression by a health care practitioner) have been largely excluded from depression research. The assessment of self-reported, everyday mental conditions is important because "the subjective beliefs that people hold about the situation in which they find themselves may or may not correspond to objective reality, but they are powerful forces nevertheless."⁴² Our data provide some opportunities to identify the sociopsychological characteristics of members of minorities with self-reported depression.

Our study has several limitations that should be taken into account in the interpretation of our results. The selection of subjects from low-income housing provides a homogeneous group, which limits our ability to identify the potential impact of culture and income relative to mainstream communities. However, to our knowledge, this is the first community-based survey that has allowed a direct comparison of African Americans and Hispanic Americans, with respect to detection and treatment of depression. It is therefore notable that among people from the same communities and of similar socioeconomic status, race/ethnicity is not a significant differentiating factor in this domain. Instead, the predominant factors relate to access to care. Although our study provides important information concerning access to care and utilization of care for depression in low-income inner-city communities, these results cannot be uniformly generalized to all similar communities. It is not unlikely that the professional diagnoses and treatment of depression observed in this study represent an upper limit relative to nonpublic housing inner-city communities. Low-income single parent families, the elderly, and the disabled are overrepresented in public housing communities. These population groups fulfill eligibility requirements and have greater access to public insurance (Medicaid and Medicare) than the general population residing in low-income communities. This view is supported by the relatively low rate of uninsured subjects in our sample (14%) compared with estimates for surrounding neighborhoods (36%).⁴³ Moreover, the mere fact that a person resides in public housing indicates an ability to successfully negotiate the social service system. Because of the characteristics of the subjects (specifically minority persons with low incomes residing in public housing), generalizations of these findings to other

racial/ethnic groups or to African Americans or Hispanics who do not share these characteristics must be made cautiously. Finally, this is a cross-sectional study, which severely limits establishing a causal relationship between the independent and outcome variables.

Future studies are needed to explore how race/ethnicity, culture, beliefs, and patient preferences influence the expression of depressive symptoms by patients, the interpretation of these symptoms by providers, and how these factors influence patient and provider practices (the work reported by Alvidrez et al.⁴⁴ is a good example). Research is also needed to identify strategies that will make currently recommended therapy (antidepressant medications and counseling) more acceptable to racial/ethnic minorities and to identify alternative or complementary strategies (e.g., faith based, family centered, or CAM based) that are effective and culturally acceptable.

Detection of clinically significant depression among racial/ethnic minorities, particularly those who are socioeconomically disadvantaged, will most likely be enhanced if the clinician recognizes the increased probability of an atypical or nonspecific clinical presentation and the need to probe more deeply to elicit depressive symptoms. Increased adherence to therapeutic recommendations can be facilitated by engaging the patient to identify patient preferences, patient beliefs, and perceived barriers to therapy.

Summary. Untreated depression among our sample of underserved racial/ethnic minority members is alarming and points to an urgent need for intervention and further investigation. Our data provide a snapshot of undiagnosed and untreated individuals with self-awareness of depression. Depressive disorder is a common mental disease that is widely distributed, particularly among individuals with physical comorbidity. Lack of accessibility to and affordability of medical care significantly contribute to inadequate treatment for depression. Emphasis on screening and expansion of treatment must be accompanied by a parallel emphasis on reaching underserved minority populations, particularly those who are younger, uninsured, and faced with financial and language barriers. Finally, our data point to an urgent need for further multiethnic studies on the use of CAM among individuals with mental disorders.

Acknowledgments

The research reported in this paper was supported by National Institutes of Health grant G12 RR0 3026-17 from the National Center for Research Resources/RCM. In addition, this paper was supported by the National Center on Minority Health and Health Disparities grant 5P20MD000182-02 and a grant by the HRSA (1 D72CS04179-01).

Notes

1. Glass RM. Awareness about depression: important for all physicians. *JAMA* 2003;289(23): 3169-70.
2. 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(23): 3095-105.

3. Snowden LR. Bias in mental health assessment and intervention: theory and evidence. [review]. *Am J Public Health* 2003;93(2):239-43.
4. Saez-Santiago E, Bernal G. Depression in ethnic minorities: Latinos and Latinas, African Americans, Asian Americans, and Native Americans. In: Bernal G, Trimble JE, Burlew, AK et al, eds. *Handbook of racial & ethnic minority psychology*, vol. 4. Thousand Oaks, CA: Sage, 2003:401-28.
5. Sue S, Zane N, Young K. Research on psychotherapy with culturally diverse populations. In: Bergin AE, Garfield SL, eds. *Handbook of psychotherapy and behavior change*, 4th ed. New York: John Wiley & Sons Inc, 1994:261-74.
6. U.S. Department of Health and Human Services (DHHS). *Mental health: culture, race, and ethnicity—a supplement to Mental health: a report of the Surgeon General*. Rockville, MD; DHHS, Substance Abuse and Mental Health Service Administration, Centers for Mental Health Services, 2001.
7. Minsky S, Vega W, Miskimen T, et al. Diagnostic patterns in Latino, African American, and European American psychiatric patients. *Arch Gen Psychiatry* 2003;60(6):637-44.
8. 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 Feb;39(1):33-46.
9. Skaer TL, Sclar DA, Robison LM, Galin RS. 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 Dec;22(12):1575-89.
10. Gary TL, Crum RM, Cooper-Patrick L, et al. Depressive symptoms and metabolic control in African-Americans with type 2 diabetes. *Diabetes Care* 2000 Jan;23(1):23-9.
11. Reiff M, Schwartz S, Northridge M. Relationship of depressive symptoms to hypertension in a household survey in Harlem. *Psychosom Med* 2001 Sep-Oct;63(5):711-21.
12. Black SA. Increased health burden associated with comorbid depression in older diabetic Mexican Americans. Results from the Hispanic Established Population for the Epidemiologic Study of the Elderly survey. *Diabetes Care* 1999 Jan;22(1):56-64.
13. Dunlop DD, Song J, Lyons JS, et al. Racial/ethnic differences in rates of depression among preretirement adults. *Am J Public Health* 2003 Nov;93(11):1945-52.
14. Van Hook MP. Women's help-seeking patterns for depression. *Soc Work Health Care* 1999;29(1):15-34.
15. Bazargan M, Barbre AR. The effects of depression, health status, and stressful life-events on self-reported memory problems among aged blacks. *Int J Aging Hum Dev* 1994;38(4):351-62.
16. Bazargan M, Bazargan S, King L. Paranoid ideation among elderly African American persons. *Gerontologist* 2001 Jun;41(3):366-73.
17. Black SA, Markides KS, Ray LA. Depression predicts increased incidence of adverse health outcomes in older Mexican Americans with type 2 diabetes. *Diabetes Care* 2003 Oct;26(10):2822-8.
18. Burke P, U.S. Department of Housing and Urban Development (HUD). *A picture of subsidized households in 1998*. Washington, D.C.: HUD USER, 1998.
19. 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 Feb;34(6):1273-302.
20. Barkin SL, Balkrishnan R, Manuel J, et al. Health care utilization among homeless adolescents and young adults. *J Adolesc Health* 2003 Apr;32(4):253-6.

21. Bazargan M, Baker RS, Bazargan S. Correlates of recency of eye examination among elderly African-Americans. *Ophthalmic Epidemiol* 1998 Jun;5(2):91-100.
22. Bazargan M, Johnson KH, Stein JA. Emergency department utilization among Hispanic and African-American under-served patients with type 2 diabetes. *Ethn Dis* 2003 Summer;13(3): 369-75.
23. Andersen R, Bozzette S, Shapiro M, et al. Access of vulnerable groups to antiretroviral therapy among persons in care for HIV disease in the United States. HCSUS Consortium. HIV Cost and Services Utilization Study. *Health Serv Res* 2000 Jun;35(2):389-416.
24. Williams DR, Yu Y, Jackson JS, Anderson NB. Racial differences in physical and mental health. *Journal of Health Psychology* 1997;2:335-351.
25. Essed P. Understanding everyday racism: an interdisciplinary theory. Newbury Park, CA: Sage, 1991.
26. Wallston KA, Wallston BS, DeVellis R. Development of the Multidimensional Health Locus of Control (MHLC) scales. *Health Educ Monogr* 1978 Spring;6(2):160-70.
27. U.S. Department of Health and Human Services. Healthy people 2010: with understanding and improving health and objective for improving health, vol. 1, 2nd ed. Washington, D.C.: Government Printing Office, 2000.
28. Padilla R, Gomez V, Biggerstaff SL, et al. Use of curanderismo in a public health care system. *Arch Intern Med* 2001 May 28;161(10):1336-40.
29. Factor-Litvak P, Cushman LF, Kronenberg F, et al. Use of complementary and alternative medicine among women in New York City: a pilot study. *J Altern Complement Med* 2001 Dec;7(6):659-66.
30. Ibrahim SA, Siminoff LA, Burant CJ, et al. Variation in perceptions of treatment and self-care practices in elderly with osteoarthritis: a comparison between African American and white patients. *Arthritis Rheumatism* 2001 Aug;45(4):340-5.
31. Mazur LJ, De Ybarrondo L, Miller J, et al. Use of alternative and complementary therapies for pediatric asthma. *Tex Med* 2001;97(6):64-8.
32. Najm W, Reinsch S, Hoehler F, et al. Use of complementary and alternative medicine among the ethnic elderly. *Altern Ther Health Med* 2003 May-Jun;9(3):50-7.
33. Barnett MC, Cotroneo M, Purnell J, et al. Use of CAM in local African-American communities: community-partnered research. *J Natl Med Assoc* 2003 Oct;95(10):943-50.
34. Bazargan M, Norris K, Akhanjee L et al. Alternative health care use among underserved Hispanic and African Americans. *Ethnicity & Disease* 2005 (in press).
35. Alderete E, Vega WA, Kolody B, et al. Lifetime prevalence of and risk factors for psychiatric disorders among Mexican migrant farmworkers in California. *Am J Public Health* 2000 Apr;90(4):608-14.
36. Clark R, Anderson NB, Clark VR, et al. Racism as a stressor for African Americans. A biopsychosocial model. *Am Psychol* 1999 Oct;54(10):805-16.
37. Williams DR, Harris-Reid M. Race and mental health: emerging patterns and promising approaches. In: Horowitz AV, Scheid T, eds. *A handbook for the study of mental health: social context, theories, and systems*. New York: Cambridge University Press, 1999:295-314.
38. Takkinen S, Gold C, Pedersen NL, et al. Gender differences in depression: a study of older unlike-sex twins. *Aging Ment Health* 2004 May;8(3):187-95.
39. Bogner HR, Gallo JJ. Are higher rates of depression in women accounted for by differential symptom reporting? *Soc Psychiatry Psychiatr Epidemiol* 2004 Feb;39(2):126-32.

40. Simonds VM, Whiffen VE. Are gender differences in depression explained by gender differences in co-morbid anxiety? *J Affect Disord* 2003 Dec;77(3):197-202.
41. Black SA, Markides KS, Miller TQ. Correlates of depressive symptomatology among older community-dwelling Mexican Americans: the Hispanic EPESE. *J Gerontol B Psychol Sci Soc Sci* 1998 Jul;53(4):S198-208.
42. Cutler SJ, Grams AE. Correlates of self-reported everyday memory problems. *J Gerontol* 1998 May;43(3):S82.
43. Los Angeles County Department of Health Services. Key indicators of health by service planning area 2002/2003. Los Angeles, CA: LA County Department of Health Services, 2004. <http://lapublichealth.org/wwwfiles/ph/hae/ha/keyhealth.pdf>.
44. Alvidrez J, Havassy BE. Racial distribution of dual-diagnosis clients in public-sector mental health and drug treatment settings. *J Health Care Poor Underserved* 2004 Feb;16(1): 53-62.