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Detection Of Depression Among Low-income Mexican Americans In Primary Care

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Abstract: Between one and two thirds of depressive disorders go undetected in primary care settings. Four hundred ninety-six Mexican American primary care patients from high-poverty areas were screened for depressive symptoms, and 41% endorsed depressive symptoms. Eighty percent of screened patients with depressive symptoms agreed to structured diagnostic interviews and 90% of those interviewed met diagnostic criteria for one or more depressive disorders. Cases of depression detected through this systematic process were compared with evidence of depression detected by providers in medical charts. Provider and study evaluation agreement was poor ($\kappa = 0.13$); providers noted depression in 21% of patients with depressive disorders based on the systematic evaluation. More work is needed to enhance detection of depression in primary care, especially in minority populations.

Key words: Depression, screening, Mexican-American, primary care, detection.

Depressive disorders are common, chronic, and associated with significant functional limitations and economic costs.¹ At least one in six persons in the U.S. will suffer a major depressive episode in their lifetime.² Most people who have one major depressive episode will have another, and the risk of recurrence increases with each additional depressive episode.³ Due to its early onset, prevalence, and associated morbidity and mortality, unipolar major depression ranked fourth among causes of the global disease burden in 1990⁴ and 2000.⁵ The direct and indirect costs of depression in the U.S. were estimated to be over \$83 billion dollars in 2000.⁶

Depressive disorders are especially common in primary care settings. One review estimated the point prevalence of major depressive disorder in primary care settings as ranging from 5–9%,⁷ with a 12-month prevalence of 14%,⁸ which is higher than the 12-month prevalence of 7–10% in the general population.^{2,9} Dysthymic disorder, with a 12-month prevalence of 2.5% in the general population,⁹ is about twice as common in primary care.⁸ Primary care physicians fail to recognize or properly identify between one-third¹⁰ and two-thirds¹¹ of their patients with depression. The crucial role of primary care providers in the detection and management of depressive disorders underscores the need to improve the recognition of depressive disorders as a first step in decreasing the suffering and functional limitations associated with them.

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Numerous factors are associated with the low rate of detection in primary care settings. Patient characteristics including race/ethnicity, gender, socioeconomic status, and somatic symptoms also may be related to the detection of depression in primary care patients.^{12,13} For example, in one study, Hispanic primary care patients with depressive symptoms were one-third as likely to have mental health problems detected as white patients,¹⁴ although this study did not specifically examine the detection of depressive disorders. Regarding cultural differences in reporting depressive symptoms, Hispanics tend to emphasize somatic symptoms and seek help in primary care settings, as opposed to in the mental health sector.¹⁵ Taken together, Hispanics are more likely to seek help in primary care settings for depressive symptoms and are especially likely to have their depressive disorders go undetected: this pattern underlines the urgent need to improve detection and treatment of mental health problems among primary care patients, especially Hispanics. As practice-based quality improvement interventions have been shown to improve care among depressed Hispanics and other minorities,¹⁶ modifying provider behavior and practice methods will help to address the needs of this underserved population.

In general, it is challenging to discern a clear pattern of the epidemiology of depressive disorders in Hispanics in comparison with non-Hispanic whites. Among people seeking behavioral health treatment in New Jersey (40% Medicaid-insured), the prevalence rate of major depression was markedly higher in Hispanics than in non-Hispanic white Americans (27.6% vs. 13.0%).¹⁵ In a national probability sample, more Hispanics than non-Hispanic whites had major depressive disorders (10.8% vs. 7.8%);¹⁷ people in the Hispanic sample were also more likely to have household incomes below the 25th percentile (54% vs. 20%). However, a national probability sample of visits to primary care physicians found depressive disorders to be recorded in a lower proportion of visits for Hispanics than for non-Hispanics (1.5% vs. 2.4%).¹⁸

Other studies of Hispanics that did not include a non-Hispanic participant group may be compared with population-based statistics. For example, averaging immigrant and U.S.-born Mexican Americans, a prevalence rate of 5.1% for major depression¹⁹ may be lower than that of non-Hispanics (8.4%),²⁰ although another study reported a 9.0% prevalence among impoverished urban and rural, immigrant and U.S.-born Mexican Americans,²¹ which is similar to the non-Hispanic white population. U.S.-born Mexican Americans have greater rates of dysthymic disorder than non-Hispanic whites (6.5% versus 4.1%).^{19,20} Taken together, these data are equivocal in elucidating clear patterns of the relative degree of prevalence of depressive disorders among Hispanics versus non-Hispanic whites, although there are some trends indicating greater prevalence among Hispanics. As noted in a previous review,²⁰ there is consistent evidence that U.S.-born Mexican Americans show higher rates of depressive disorders than Mexican immigrants.

Given the prevalence and lack of detection of depressive disorders, there has been an increasing interest in the utility of screening instruments to improve detection in primary care settings. Concise and effective screening measures have been developed (e.g., a two item, self-administered questionnaire²² has demonstrated 96% sensitivity compared with structured diagnostic interviews).^{22,23} Routine screening for depression in clinical practices has been recommended,²⁴ based on evidence that screening and feedback improve patient outcomes²⁵ and are cost-effective.²⁶

The goals of the present study were to screen systematically for the presence of depressive symptoms in Mexican American adults seeking primary care, conduct structured diagnostic interviews of patients who reported depressive symptoms for the purpose of characterizing the prevalence of depressive symptoms and disorders in a Mexican American primary care sample, and compare cases of depression detected through this systematic process with those detected by primary care providers. We predicted that providers would detect depression less frequently than systematic screening and diagnostic evaluations, but made no prediction concerning the overall prevalence of depressive disorders in this sample (because of the equivocal nature of past studies of Hispanic populations, and the lack of focus on specific Hispanic subgroups, such as Mexican Americans, in previous research).

Methods

Participants. Potential participants were people seated in the waiting areas of two rural primary care clinics in Fabens, Texas and Montana Vista, Texas; the population of each community is approximately 8,000. Members of the research staff were available to recruit potential participants approximately 20 hours per week for a 13-month period, resulting in a sample that was collected consecutively during the times research staff members were in the clinic. The two clinics were used sequentially, each for about half of the study period, rather than simultaneously. The clinics were run collaboratively by two universities and the county (they are located on school district property), are in federally designated health professional shortage areas, and serve the surrounding colonias (neighborhoods), which are high-poverty areas (see Results). Nurse practitioners and physicians provide primary care in the clinics.

Procedure and measures. Research staff approached everyone seated in the waiting room and asked if they would be willing to complete a brief screening questionnaire. If a person was willing to proceed, staff first verified that the person was at least 18 years of age and a current patient in the clinic. Patients unwilling to be screened were asked to provide their age, gender, and ethnicity, for comparison with those who were screened, in order to examine the sample's representativeness of the clinic population. Those who indicated they were at least 18 years of age and current patients were escorted to private rooms and administered the Patient Health Questionnaire (PHQ),²⁷ a 27-item questionnaire that queries symptoms associated with several classes of psychiatric disorders and is the screening tool for the Primary Care Evaluation of Mental Disorders (PRIME-MD),²² a structured diagnostic interview. The PHQ identifies who should be administered the PRIME-MD. Participants who endorsed one or both of the cardinal symptoms of depression (anhedonia or dysphoria) were asked to participate in a structured diagnostic evaluation using the PRIME-MD. Participants who agreed to diagnostic evaluation were administered the mood, anxiety, and alcohol use disorder modules of the PRIME-MD.

The interviewers were three clinical psychology graduate students and two post-baccalaureate psychology students. All students had completed didactic courses in diagnostic nomenclature and procedures previously, and for this study, underwent training consisting of observing and then conducting interviews to the point of agreement with the trainer (K.S.) on process and content (response scoring); after

the students were deemed ready to interview study participants, weekly meetings prevented interviewer drift, and emergent supervision was always available by phone. Prior to administration of the PRIME-MD, informed consent was obtained from participants. There were generally two research staff members available at any time, so it is possible but unlikely that potentially eligible persons were not approached for screening during the course of the study.

All research staff were Hispanic and fluently bilingual (Spanish and English). Because of concerns about a high rate of functional illiteracy in this population, participants were asked if they would prefer to complete the questionnaire on their own, or to have the researcher administer it to them via interview. A valid version of the PHQ in Spanish has been developed;²⁸ however, to assure that the PHQ and PRIME-MD were appropriate for the local Spanish used along the U.S.-Mexico border, the measures were checked using translation and back-translation methods.²⁹

To determine if providers had detected depression in the six months prior to the study evaluation, participants' medical charts were examined through systematic review for any references to depression in problem lists or chart notes, or prescriptions for antidepressants, in the six months prior to the study evaluation. A structured chart abstraction form was used to note the presence or absence of references to depression on the problem list, in chart notes, or any prescriptions for antidepressants. A binary summary score was retained for analysis for each person as positive based on the presence of any one of these three indicators of depression, versus negative findings on all three indicators. One coder performed all chart reviews; a second coder reviewed randomly selected charts ($n=44$, approximately 10% of the total number of determinant cases ($n=447$: people who endorsed neither anhedonia nor dysphoria on the PHQ or endorsed one item and completed the PRIME-MD)). A comparison of coders' binary summary scores (evidence or no evidence of depression) indicated acceptable inter-rater reliability, $\kappa = 0.81$.

This study was approved by the Institutional Review Boards at the University of Texas at El Paso and the University of North Carolina at Charlotte. The results of the evaluation were placed in participants' charts. Participants who met criteria for a depression diagnosis were offered behavioral treatment; if behavioral treatment was declined or if any participant wanted referral information, that information was provided.

Results

Sample characteristics. The results of our recruitment, screening, and diagnostic evaluations are depicted in Figure 1. In total, 537 people sitting in the waiting room were approached for screening: 41 were not clinic patients, 10 declined screening, and 486 agreed to participate in the screening. The 486 participants who completed the screening averaged 45.53 years of age ($SD = 16.5$; range 18–92); 83.9% were female and 97.4% were of Hispanic ethnicity and of Mexican origin. The vast majority of the participants (98.8%) completed the measures via interview rather than self-administered self-report and in Spanish (81.7%).

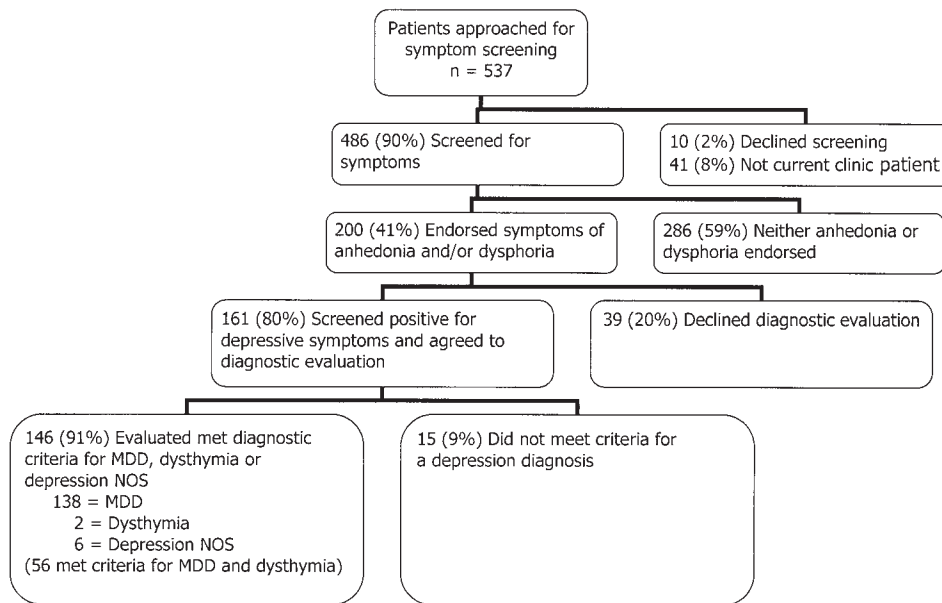


Figure 1. Recruitment, screening, and diagnostic results

A comparison of the demographic characteristics of the potential participants who declined to be screened with those of participants who completed screening was performed. No significant differences between the groups were found for age or ethnicity, but men were overrepresented among potential participants who declined to be screened (40% of those who declined vs. 15% of those who agreed to be screened; $\chi^2 (1) = 4.32, p < 0.05$).

Among participants who endorsed anhedonia or dysphoria and agreed to diagnostic evaluation ($n = 161$), information was gathered regarding household income and educational attainment as part of the PRIME-MD. On average, these participants reported completing 8.20 years of formal education ($SD = 4.04$). Over three-quarters (81%) of the participants had total family incomes in the previous year of less than \$15,000.*

Point prevalence of depressive symptoms and disorders. Among the 486 participants screened, 200 (41%) reported anhedonia and/or dysphoria. As we described above, participants who endorsed one or both symptoms were invited to participate in a structured diagnostic interview, the PRIME-MD. One hundred and sixty one (161) of the 200 (80%) participants agreed to undergo further evaluation. Reasons given for not wanting to participate in a full evaluation included feeling too ill to participate, being called in for their appointment, not wanting to know if

* Household income data were not obtained on all persons who were screened, only those who completed the PRIME-MD. 2000 census data³⁰ for the clinics' tracts (El Paso County 103.20 and 105.03) show median household incomes of \$32,659 and \$20,000 with 23% and 39% with incomes below the poverty level, respectively, suggesting that participants with anhedonia or dysphoria may have been more impoverished than was characteristic of the areas surrounding the clinics.

they had a diagnosis of depression, or not wanting to take the time to complete the diagnostic evaluation because they were too busy or unable to attend any treatment being offered if diagnosed with depression.

Among the 161 participants who completed the PRIME-MD, 146 met diagnostic criteria for one or more depressive disorders. Therefore, among participants who endorsed anhedonia or dysphoria during the screening process and agreed to a diagnostic interview, 91% had a depressive disorder verified in the diagnostic interview. (Among the 15 participants not meeting criteria for a depressive disorder was one participant who met criteria for bipolar disorder and consequently did not warrant a unipolar depressive disorder diagnosis as the primary problem (as bipolar disorder takes precedence).) Among those participants with depressive disorders, Major Depressive Episode ($n=138$) was most common, followed by Dysthymia ($n=58$), and Depressive Disorder NOS ($n=6$) according to DSM-IV criteria.¹ These numbers total more than 161 because 56 participants met criteria for both Major Depressive Episode and Dysthymia; only 2 met criteria for a diagnosis of dysthymia alone.

Taken together, at least 146 of 486 participants (30%) met DSM-IV criteria for one or more depressive disorders. This estimate is conservative and may underestimate actual prevalence because not all individuals who endorsed anhedonia or dysphoria agreed to a diagnostic evaluation.

Detection of depressive disorders by primary care providers. To compare the results of our systematic screening and diagnostic evaluation with evidence of providers' detection of depression, participants' charts were reviewed for documented evidence of detection of depression (problem list, notes, prescriptions for antidepressants). In particular, as antidepressants may be prescribed for reasons other than depressive disorders, our criteria may be considered relatively lenient in coding cases as detected.

Once indeterminate cases were excluded (people who endorsed anhedonia or dysphoria during screening but declined further evaluation, $n=39$), the diagnostic status of the remaining cases based on our evaluation (negative screens and negative diagnoses versus positive diagnoses) was compared with evidence of depression in the chart review. These data are summarized in Table 1. Overall, agreement between providers and study evaluations was poor ($\kappa = 0.13$; $\chi^2(1) = 10.22$, $p < 0.001$); providers appeared to have detected 30 of the 146 patients with depressive disorders (20.55%), which resulted in low sensitivity (0.21) and positive and negative predictive values (0.51, 0.70, respectively), but high specificity (0.90).

Discussion

The goals of the present study were to screen systematically for the presence of depressive symptoms in Mexican American adults seeking primary care, conduct structured diagnostic interviews of patients who screened positive for depression, and compare cases of depression detected through this systematic process to those detected by primary care providers. It is challenging to compare our results with those of previous research, because of differences in methodology. Regarding depressive symptoms, 41% of our participants reported anhedonia, dysphoria, or both. A study

Table 1.**COMPARISON OF PROVIDER DETECTION OF DEPRESSION VERSUS THE SCREENING AND DIAGNOSTIC EVALUATION RESULTS**

	Negative depression screen or diagnosis	Positive depression diagnosis	Row totals
No depression noted in patient chart	272	116	388
Depression noted in patient chart	29	30	59
Column totals	301	146	447

Note: 39 participants with an indeterminant diagnostic status (endorsed anhedonia or dysphoria during screening but declined to participate in a diagnostic evaluation) were excluded.

by Eisenman and colleagues³¹ revealed that among 512 Hispanic impoverished primary care patients in community clinics, 147 (28.7%) had symptoms of depression when the same screening instrument was employed. Anhedonia and/or dysphoria among our sample were endorsed nearly one and a half times more frequently than they were in the Eisenman study.³¹ While the mental health status of Hispanics of varying countries of origin has not been sufficiently studied, the difference in the rate of depressive symptoms between the two studies may be partially attributable to the difference in country of origin: our sample was 97.4% Hispanic of Mexican origin, and the latter sample was 37% of Mexican origin. Indeed, the Eisenman study³¹ suggested that Hispanics of Mexican origin may be more likely to report depressive symptoms than Hispanics from other countries.

Concerning depressive disorders, our results indicate that, conservatively, 39% of Mexican American patients seeking care in a primary care clinic met criteria for one or more depressive disorders (146 cases detected through our evaluation plus 29 additional cases detected by providers (see Table 1) out of 447). In comparison, among a national probability sample of adults from 54 to 65 years of age, the one-year unadjusted prevalence of major depression among Hispanics was 10.8%.¹⁷ The participants in the current study were seeking primary care services at a publicly-operated clinic in a rural setting, were impoverished, were of a broader age range, and were evaluated for other depressive disorders in addition to major depression. All of these factors lead us to expect a higher rate of depression than was found in the sample in the national probability study cited. In contrast, among a stratified random sample of Hispanics and African Americans living in public housing in Los Angeles, over 40% reported themselves to be suffering from depression.³² In another study, among Hispanics seeking mental health care, 44.4% met criteria for a depressive disorder.¹⁵ Certainly, patients seeking mental health services would be expected to have more depressive disorders than the general primary care population. A 39% point prevalence of depressive disorders in our sample, however, is many

times greater than the point prevalence reported previously among Hispanics in primary care (1.5%)¹⁸ or in general primary care samples.^{7,8}

The primary care providers for participants in our study appeared to detect less than one quarter of the cases of depression that were identified through our systematic screening and diagnosis. Depression may go undetected as a result of the characteristics of primary care practices, including large patient volumes, short visit durations, and lack of provider awareness of or efficacy in the evaluation of depressive symptoms.³³ Our results, together with the higher rates of detected depression found in some other studies^{10, 11, 34} (including among Hispanic patient samples³⁵) suggest that work remains to be done to enhance the detection of depressive disorders by primary care providers, and to support providers with resources for the appropriate treatment of detected depressive disorders.

However, several possible explanations for the lack of agreement between provider and study evaluations in addition to lack of provider recognition must be noted. For example, there is the possibility that unmeasured intervening events resulted in false negatives or false positives: patients who had not visited the clinic in the previous six months and developed a depressive disorder subsequent to their last visit would not have had the opportunity to have their depression detected. Conversely, patients who were recognized as having a depressive disorder at their last visit and treated may have improved by the time of the study evaluation. In addition, structured chart reviews may have limited validity in reflecting providers' awareness of depression;³⁶ lack of documentation of depression may occur for a number of reasons, including hesitation to document emotional symptoms and disagreement regarding the severity or type of psychiatric diagnosis present.³⁷ As Hispanic primary care patients may be less likely than non-Hispanic whites to find antidepressant medication acceptable,³⁸ and as Hispanics with depression diagnoses may be less likely to use antidepressants than non-Hispanic whites,³⁹ providers may be reluctant to document their depressive symptoms, anticipating resistance to pharmacotherapy.

Shortcomings of the current study included our use of a consecutive sample seeking primary care services, and having 39 participants with anhedonia and/or dysphoria (approximately 20% of all participants with these symptoms) decline to participate in a diagnostic evaluation, including a disproportionate number of men declining participation. On balance, the number of potential participants who declined to be screened was quite low (n=10), suggesting that our staff and screening methods were generally acceptable. We did not obtain information on all participants' household incomes, so we cannot know the extent to which the interviewed participants' incomes were characteristic of the clinic population. We also did not query participants about their country of birth, so we cannot know if the higher apparent prevalence of depressive disorders in our sample is partially due to a predominance of U.S.-born Mexican Americans, given the greater prevalence of depressive disorders in that group than among Mexican-born immigrants. In the future, researchers wishing to understand the impact of depression among Hispanics must consider potential differences among Hispanics of different countries of origin, and the relationships between their immigration and acculturation status and depressive symptoms. Although the PRIME-MD is a highly structured interview,

the use of less experienced interviewers may have led to unmeasured errors or biases in the results as the study interviews were not taped and coded for reliability by an expert.

In conclusion, among nearly 500 impoverished Mexican American patients in rural community-based primary care clinics, 2 in 5 endorsed depressive symptoms, and of those, the vast majority met diagnostic criteria for one or more depressive disorders. A minority of patients with depressive disorders had been identified by their providers as having these disorders. As rural, impoverished, minority patients are at particular risk for suffering from depression, there is a great need to enhance its detection and to provide resources for the appropriate treatment of detected depressive disorders.

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Notes

1. American Psychiatric Association. Diagnostic and statistical manual of mental disorders: DSM IV, 4th ed. Washington, DC: American Psychiatric Association, 1994.
2. Kessler RC, Berglund P, Demler O, et al. The epidemiology of major depressive disorder: results from the National Comorbidity Study Replication (NCS-R). *JAMA* 2003 Jun 18;289(23):3095–105.
3. Solomon DA, Keller MB, Leon AC, et al. Multiple recurrences of major depressive disorder. *Am J Psychiatry* 2000 Feb;157(2):229–33.
4. Murray CJL, Lopez AD. Global mortality, disability, and the contribution of risk factors: Global Burden of Disease Study. *Lancet* 1997 May 17;349(9063):1436–42.
5. Üstun TB, Ayuso-Mateos JL, Chatterji S, et al. Global burden of depressive disorders in the year 2000. *Brit J Psychiatry* 2004 May;184:386–92.
6. Greenberg PE, Kessler RC, Birnbaum HG, et al. The economic burden of depression in the United States: how did it change between 1990 and 2000? *J Clin Psychiatry* 2003 Dec;64(12):1465–75.
7. Depression Guideline Panel. Depression in primary care, Vol. 1. Detection and diagnosis. Clinical practice guideline, Number 5. Guideline: Depression associated with medications. Rockville, MD: U.S. Department of Health and Human Services, Agency for Health Care Policy and Research, 1993.
8. Steiner M, Bell B, Browne G, et al. Prevalence of dysthymic disorder in primary care. *J Affect Disord* 1999 Aug;54(3):303–8.
9. Kessler RC, McGonagle KA, Zhao S, et al. Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States. Results from the National Comorbidity Survey. *Arch Gen Psychiatry* 1994 Jan;51(1):8–19.
10. Rost K, Zhang M, Fortney J, et al. Persistently poor outcomes of undetected major depression in primary care. *Gen Hosp Psychiatry* 1998 Jan;20(1):12–20.
11. Klinkman MS, Coyne JC, Gallo S, et al. False positives, false negatives, and the validity of the diagnosis of major depression in primary care. *Arch Fam Med* 1998 Sep–Oct;7(5):451–61.

12. Kerr LK, Kerr LD Jr. Screening tools for depression in primary care: the effects of culture, gender, and somatic symptoms on the detection of depression. *West J Med* 2001 Nov;175(5):349–52.
13. Alvidrez J, Havassy BE. Racial distribution of dual-diagnosis clients in public sector mental health and drug treatment settings. *J Health Care Poor Underserved* 2005 Feb;16(1):53–62.
14. Borowsky SJ, Rubenstein LV, Meredith LS, et al. Who is at risk of nondetection of mental health problems in primary care? *J Gen Intern Med* 2000 Jun;15(6):381–8.
15. Minsky S, Vega W, Miskimen T, et al. Diagnostic patterns in Latino, African American, and European American psychiatric patients. *Arch Gen Psychiatry* 2003 Jun;60(6):637–44.
16. Miranda J, Duan N, Sherbourne C, et al. Improving care for minorities: can quality improvement interventions improve care and outcomes for depressed minorities? Results of a randomized, controlled trial. *Health Serv Res* 2003 Apr;38(2):613–30.
17. 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.
18. Harman JS, Schulberg HC, Mulsant BH, et al. The effect of patient and visit characteristics on diagnosis of depression in primary care. *J Fam Practice* 2001 Dec;50(12):1068.
19. Burnam MA, Hough RL, Karno M, et al. Acculturation and lifetime prevalence of psychiatric disorders among Mexican Americans in Los Angeles. *J Health Soc Behav* 1987 Mar;28(1):89–102.
20. Escobar JI, Hoyos Nervi C, Gara MA. Immigration and mental health: Mexican Americans in the United States. *Harvard Rev Psychiatry* 2000 Jul;–Aug;8(2):64–72.
21. Vega WA, Kolody B, Aguilar-Gaxiola S, et al. Lifetime prevalence of DSM-III-R psychiatric disorders among urban and rural Mexican Americans in California. *Arch Gen Psychiatry* 1998 Sep;55(9):771–8.
22. Spitzer RL, Williams JB, Kroenke K, et al. Utility of a new procedure for diagnosing mental disorders in primary care. The PRIME-MD 1000 study. *JAMA* 1994 Dec 14;272(22):1749–56.
23. Whooley MA, Avins AL, Miranda J, et al. Case-finding instruments for depression. Two questions are as good as many. *J Gen Intern Med* 1997 Jul;12(2):439–45.
24. U.S. Preventive Services Task Force. Screening for depression: recommendations and rationale. *Ann Intern Med* 2002 May 21;136(10):760–4.
25. Pignone MP, Gaynes BN, Rushton JL, et al. Screening for depression in adults: a summary of the evidence for the U. S. preventive services task force. *Ann Intern Med* 2002 May 21;136(10):765–6.
26. Valenstein M, Vijan S, Zeber JE, et al. The cost-utility of screening for depression in primary care. *Ann Intern Med* 2001 Mar 6;134(5):345–60.
27. Spitzer RL, Kroenke K, Williams JBW. Validation and utility of a self-report version of PRIME-MD: The PHQ primary care study. *JAMA* 1999 Nov 10;282(18):1737–44.
28. Diez-Quevedo C, Rangil T, Sanchez-Planell L, et al. Validation and utility of the patient health questionnaire in diagnosing mental disorders in 1003 general hospital Spanish inpatients. *Psychosom Med* 2001 Jul–Aug;63(4):679–86.
29. Brislin RW, Lonner WJ, Thorndike RM. *Cross-cultural research methods*. New York: John Wiley & Sons, 1973.
30. Health Resources and Services Administration (HRSA). HRSA Geospatial data warehouse. Rockville, MD: HRSA, 2003. Available at <http://datawarehouse.hrsa.gov>.
31. Eisenman DP, Gelberg L, Liu H, et al. Mental health and health-related quality of life among adult Latino primary care patients living in the United States with previous exposure to political violence. *JAMA* 2003 Aug 6;290(5):627–34.

32. Bazargan M, Bazargan-Hejazi S, Baker RS. Treatment of self-reported depression among Hispanics and African Americans. *J Health Care Poor Underserved* 2005 May;16(2):328–44.
33. Cabana MD, Rushton JL, Rush AJ. Implementing practice guidelines for depression: applying a new framework to an old problem. *Gen Hosp Psychiatry* 2002 Jan–Feb;24(1):35–42.
34. McQuaid JR, Stein MB, Laffaye C, et al. Depression in a primary care clinic: the prevalence and impact of an unrecognized disorder. *J Affect Disord* 1999 Sep;55(1):1–10.
35. 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.
36. Olfson M, Tobin JN, Cassells A, et al. Improving the detection of drug abuse, alcohol abuse, and depression in community health centers. *J Health Care Poor Underserved* 2003 Aug;14(3):386–402.
37. Tiemens BG, VonKorff M, Lin EH. Diagnosis of depression by primary care physicians versus a structured diagnostic interview: understanding discordance. *Gen Hosp Psychiatry* 1999 Mar–Apr;21(2):87–96.
38. Cooper LA, Gonzalez JJ, Gallo JJ, et al. The acceptability of treatment for depression among African-American, Hispanic, and white primary care patients. *Med Care* 2003 Apr;41(4):479–89.
39. Sleath B, Shih YC. Sociological influences on antidepressant prescribing. *Soc Sci Med* 2003 Mar;56(6):1335–44.