Underdiagnosed and Undertreated Depression Among Racially/Ethnically Diverse Patients With Type 2 Diabetes

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OBJECTIVE—To examine racial/ethnic differences in the prevalence of depressive symptoms and in provider recognition of depression among Latino, Asian, and non-Hispanic white patients with type 2 diabetes.

RESEARCH DESIGN AND METHODS—Patients ($n = 1,209$) with type 2 diabetes were recruited from five university-affiliated primary care clinics for an observational study.

RESULTS—Vietnamese American (133, 59.4%) and Mexican American (351, 50.2%) patients were more likely to report symptoms consistent with clinical depression (Center for Epidemiological Studies Depression [CES-D] scale score ≥ 22) than non-Hispanic whites (119, 41.6%; F [2, 1206] = 8.05, $P < 0.001$). Despite comparable diabetes care, Vietnamese and Mexican patients with high depressive symptoms were less likely to be diagnosed and treated than non-Hispanic whites (all P values < 0.001). Minority patients who reported low levels of trust in their provider were less likely to have been diagnosed or treated for depression (adjusted odds ratio 0.65, 95% CI 0.44–0.98, $P < 0.05$).

CONCLUSIONS—Innovative strategies are needed to improve recognition of depressive symptoms in minority patients.

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Although routine depression screening of adults in primary care is recommended (1), only about half of the depressed patients who present for care are recognized (1,2). Linguistic and cultural barriers (3,4) may exacerbate this underdiagnosis and undertreatment of depression in the 21 million Americans who have limited English-language skills (5). Untreated comorbid depression can have serious clinical implications for patients with diabetes, as depression contributes to poor self-care, less treatment-related adherence, and poor glycemic control (6,7). Given the paucity of information on the mental health status of type 2 diabetic patients with limited English proficiency, this study examined racial/ethnic differences in the prevalence of depressive symptoms and in provider detection of clinical depression. We hypothesized that minority patients would be more likely to report symptoms indicative of clinical depression, but would be less likely to have been diagnosed and treated compared with non-Hispanic whites.

RESEARCH DESIGN AND METHODS

Data were collected at five primary care clinics affiliated with an academic medical center in Southern California (8). Patients were excluded if they were age ≥ 80 years, had a diagnosis of schizophrenia, or could not speak English, Spanish, or Vietnamese. Of the eligible patients approached, 76% consented to complete the baseline survey and to allow access to their medical record information, laboratory, and administrative data. Patients completed an informed consent and a Health Insurance Portability and Accountability Act (HIPAA) waiver to obtain consent to review their medical charts. The research design, survey questions, and study procedures were approved by the University of California, Irvine's Institutional Review Board.

An 11-item version of the Center for Epidemiological Studies Depression (CES-D) scale (9) was used to assess severity of depressive symptoms. This version, abbreviated from the full 20-item CES-D, has been validated against other psychiatric measures of depression in ethnically diverse samples (4) and exhibited good internal consistency for each racial/ethnic group (Cronbach α ranged from 0.90–0.92). Scores on the abbreviated measure were rescaled to have the same range of values as the full measure. A cutoff score ≥ 22, which has been shown to have good sensitivity and specificity for screening for major depressive disorder among chronically ill patients (10), was used to indicate clinically relevant levels of depressive symptoms.

Technical quality of diabetes care was measured using performance measures for process of care (e.g., annual performance of HbA_{1c}, lipids, blood pressure, and foot and eye examinations), as specified by the National Committee for Quality Assurance (NCQA) Diabetes Recognition Program (11). Three measures of provider recognition and treatment were collected: *1*) documentation of a diagnosis of depression in patients' medical records (e.g., in the problem list, chart notes, or referrals to mental health providers), 2) documentation of a prescription for an antidepressant medication either being currently taken by the patient or prescribed by a provider in the year before study enrollment, and 3) patient report of having seen a mental health provider (e.g., psychologist, psychiatrist, counselor) in the past year.

Group differences in patient characteristics were evaluated using ANOVA (Table 1). Logistic regressions were conducted to examine racial/ethnic differences in the technical quality of diabetes care and in the detection and treatment of depression among the subsample of patients with depressive symptoms. These

Table 1—*Patient characteristics, diabetes quality measures, and physician recognition and treatment of depressive symptoms*

	Non-Hispanic white	Mexican American	Vietnamese American	P
n	286	699	224	
Patient characteristics*				
Age (years)	60.4 [10.5][a]	55.5 [10.7][b]	66.3 [9.8][c]	<0.001
Sex (% male)	54.6[a]	32.8[b]	41.5[c]	<0.001
Marital status (% married)	69.5[a]	53.3[b]	66.2[a]	<0.001
Limited English language proficiency (%)	9.1[a]	87.4[b]	97.3[c]	<0.001
Insurance status (%)				
Uninsured	0.04[a]	37.0[b]	0.01[a]	<0.001
Medicare	45.1[a]	26.8[b]	67.0[a]	<0.001
Medicaid/MSI	15.0[a]	41.8[b]	34.8[b]	<0.001
Time since diabetes diagnosis (years)	8.6 [7.1][a]	9.7 [7.4][b]	8.7 [7.4][a]	0.04
Number of chronic conditions (n)	2.3 [1.3][a]	1.9 [1.1][b]	1.9 [1.0][b]	<0.001
Depression severity (% ≥22)	41.6[a]	50.2[b]	59.4[c]	<0.001
Indicators of quality care: diabetes process measures†				
n	119	351	133	
Annual HbA$_{1c}$ test (%)	94.0	94.8	97.9	
Adjusted OR (95% CI)	—	1.67 (0.48–5.86)	3.38 (0.62–18.42)	
Annual LDL test (%)	89.7	91.1	97.9	
Adjusted OR (95% CI)	—	0.97 (0.38–2.46)	4.47 (0.93–21.59)	
Annual urinalysis for microalbumin (%)	70.1	81.3	76.3	
Adjusted OR (95% CI)	—	2.36 (1.22–4.56)	1.50 (0.77–2.95)	
Annual foot exam (%)	99.2	99.1	98.9	
Adjusted OR (95% CI)	—	1.97 (0.10–40.63)	0.77 (0.04–16.68)	
Annual eye exam (%)	55.6	52.2	74.2	
Adjusted OR (95% CI)	—	1.04 (0.59–1.83)	2.28 (1.22–4.26)	
Physician recognition and treatment†				
Diagnosis of depression noted in chart (%)	45.0	30.0	14.0	
Adjusted OR (95% CI)	—	0.60 (0.34–1.07)	0.22 (0.11–0.42)‡	
Antidepressant/sedative medications noted in chart (%)	57.3	26.8	23.8	
Adjusted OR (95% CI)	—	0.29 (0.16–0.51)‡	0.22 (0.12–0.40)‡	
Diagnosis and/or medications noted in chart (%)	63.0	36.2	23.3	
Adjusted OR (95% CI)	—	0.36 (0.20–0.64)‡	0.21 (0.11–0.37)‡	
Both diagnosis and medications noted in chart (%)	39.0	20.3	11.3	
Adjusted OR (95% CI)	—	0.44 (0.24–0.82)‡	0.21 (0.10–0.42)‡	
Diagnosis and/or medications and/or saw mental health provider (%)	68.1	39.9	37.6	
Adjusted OR (95% CI)	—	0.35 (0.20–0.63)‡	0.30 (0.17–0.53)‡	

Superscripts that differ in the same row indicate values that are significantly different from each other. Diabetes quality measures are based on NCQA and Diabetes Alliance recommended indicators. Table entries for "Indicators of quality care: diabetes process measures" are based on medical record abstraction for all primary care visits during the year before date of completion of the CES-D for patients seen at participating University of California, Irvine Medical Center clinics. Table entries are percent performance of each indicator, averaged within and across racial/ethnic groups. For process measures, 61 cases were omitted because of incomplete process of care data. MSI, Medical Services Initiative; OR, odds ratio. *Table entries for patient characteristics are means [SD] unless otherwise noted. †Analyses were conduced on the subset of patients who screened positive (CES-D score ≥22) for depressive symptoms and included adjustments for the following variables: age, sex (1 = male, 2 = female), marital status (1 = not currently married, 2 = currently married), duration of diabetes (years), number of chronic conditions (modified Charlson to provide a weighted count of 14 conditions), and insurance status (1 = currently insured, 2 = currently uninsured). ‡P ≤ 0.01.

analyses included the following variables as covariates: age, sex, marital status, duration of diabetes, number of chronic conditions, and insurance status. The Bonferroni procedure was used to control for type I error across multiple comparisons. Two-tailed P values ≤ 0.01 were considered statistically significant.

Finally, we evaluated patient-level factors associated with physician recognition and treatment of depression in minority patients with high levels of depressive symptoms using a logistic regression model entering patient sociodemographic characteristics, health status, and doctor-patient relationship characteristics (i.e., trust in provider [12], language concordance [13], duration of relationship with doctor [14], and number of appointments in the past year).

RESULTS—Mexican American (87.4%) and Vietnamese American (97.3%) patients had largely limited English proficiency. More Vietnamese American (59.4%) and Mexican American (50.2%) patients reported symptoms consistent with clinical depression (CES-D score ≥22) compared with whites (41.6%; F [2, 1206] = 8.05, P < 0.001).

Despite comparable process quality among patients with symptoms indicative of depression, significant racial/ethnic differences in mental health diagnosis and treatment were found. Specifically, there were no ethnic/racial differences in recommended processes of diabetes care.

Compared with non-Hispanic whites, however, Mexican American and Vietnamese American patients with depressive symptoms were significantly less likely to have had a diagnosis of depression and/or prescription for an appropriate medication noted in their chart (all P values < 0.001) and were less likely to have any depression treatment noted (all P values < 0.001), even after adjustment for covariates. Consistent with our hypothesis, a higher proportion of minority patients reported symptoms indicative of clinical depression, yet were less likely to be diagnosed and treated compared with non-Hispanic whites.

Logistic regression models examining patient characteristics associated with recognition or treatment of depression showed that, among Hispanic and Vietnamese patients, individuals who report low levels of trust in their provider were less likely to have been diagnosed or treated for depression (data not shown, adjusted odds ratio 0.65, 95% CI 0.44–0.98, $P < 0.05$).

CONCLUSIONS—Despite comparable quality of diabetes care, physicians appeared not to recognize or treat depressive symptoms adequately, particularly among minority patients. This situation appeared to be particularly problematic for minority patients who reported low levels of trust in their provider, highlighting the importance of a high-quality doctor-patient relationship in addressing depressive symptoms.

There are several limitations to this study. First, although the CES-D has been widely used in community studies of depression, it also may reflect general psychological distress and diabetes-specific depression, which are both different from clinical depression (15). Nevertheless, because patients who display high levels of distress have worse diabetes outcomes, greater attempts are needed to target the underlying causes of the distress. Second, there are other possible explanations for the lack of agreement between the provider- and patient-reported depressive symptoms other than lack of provider recognition. Chart reviews may not reflect providers' awareness of depression because providers may hesitate to document emotional symptoms.

In summary, the findings suggest that without culturally appropriate interventions in primary care, depression will continue to be suboptimally detected and managed in minority patients, and racial and ethnic disparities will persist.

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