

# Depression Care in the United States

## *Too Little for Too Few*

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**Objective:** To determine the prevalence and adequacy of depression care among different ethnic and racial groups in the United States.

**Design:** Collaborative Psychiatric Epidemiology Surveys (CPES) data were analyzed to calculate nationally representative estimates of depression care.

**Setting:** The 48 coterminous United States.

**Participants:** Household residents 18 years and older (N = 15 762) participated in the study.

**Main Outcome Measures:** Past-year depression pharmacotherapy and psychotherapy using American Psychiatric Association guideline-concordant therapies. Depression severity was assessed with the Quick Inventory of Depressive Symptomatology Self-Report. Primary predictors were major ethnic/racial groups (Mexican American, Puerto Rican, Caribbean black, African American, and non-Latino white) and World Mental Health Composite International Diagnostic Interview criteria for 12-month major depressive episode.

**Results:** Mexican American and African American individuals meeting 12-month major depression criteria con-

sistently and significantly had lower odds for any depression therapy and guideline-concordant therapies despite depression severity ratings not significantly differing between ethnic/racial groups. All groups reported higher use of any past-year psychotherapy and guideline-concordant psychotherapy compared with pharmacotherapy; however, Caribbean black and African American individuals reported the highest proportions of this use.

**Conclusions:** Few Americans with recent major depression have used depression therapies and guideline-concordant therapies; however, the lowest rates of use were found among Mexican American and African American individuals. Ethnic/racial differences were found despite comparable depression care need. More Americans with recent major depression used psychotherapy over pharmacotherapy, and these differences were most pronounced among Mexican American and African American individuals. This report underscores the importance of disaggregating ethnic/racial groups and depression therapies in understanding and directing efforts to improve depression care in the United States.

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OVER THE NEXT 20 YEARS, unipolar depression is projected to be the second leading cause of disability worldwide and the leading cause of disability in high-income nations, including the United States.<sup>1</sup> Within the United States, depression is a leading cause of disability among major ethnic and racial groups.<sup>2</sup> There are 2 main modalities of depression care that are efficacious and well tolerated, provided that they are concordant with extant treatment guidelines: pharmacotherapy and psychotherapy.<sup>3</sup> Nevertheless, most Americans who meet diagnostic criteria for major depression are untreated or undertreated.<sup>4,5</sup> Except for clinical samples, depression treatments are commonly aggregated (ie, pharmacotherapy and psychotherapy) in national studies and it is

unclear which treatments are used.<sup>6</sup> Furthermore, because major ethnic/racial groups are aggregated (ie, all Latino individuals as opposed to specific subgroups) in national studies, a practice discouraged by the Surgeon General and the National Institutes of Health, it is unclear if important ethnic/racial group differences are missed.<sup>7</sup>

The Institute of Medicine Unequal Treatment committee defined a disparity as

racial or ethnic differences in the quality of health care that are not due to access-related factors or clinical needs, preferences, and appropriateness of intervention.<sup>8(p32)</sup>

The purpose of this study was to use this Institute of Medicine definition of disparity in an examination of depression care among ethnic/racial minorities in the United States. To evaluate access-related factors, fac-

tors were examined that purportedly enable access to health care. For clinical needs, depression severity was compared between ethnic/racial groups. Patterns of depression treatment use by ethnic/racial groups meeting major depression criteria were used as a proxy for preferences. To evaluate the appropriateness of interventions, only adults who met diagnostic criteria for 12-month major depression were examined. To achieve these objectives, data disaggregated by ethnic/racial groups were used that included depression treatment modalities and adequacy of treatment among nationally representative samples of US adults who met criteria for 12-month major depression.

To better understand patterns of depression care among diverse ethnic/racial groups and formally evaluate Institute of Medicine–based disparity criteria, we applied a modification of the Andersen behavioral model of health services use to analyses of nationally representative population survey data.<sup>9</sup> The behavioral model posits 3 major factors (ie, predisposing, health need, and enabling) related to accessing health services. We predicted that predisposing factors, particularly ethnic/racial, would be associated with access to depression care. Second, we expected that health needs would not differ between ethnic/racial groups. Next, we anticipated that access-related factors would be associated with care but not appreciably affect ethnic/racial differences in depression care.

## METHODS

### DATA COLLECTION

The National Institute of Mental Health Collaborative Psychiatric Epidemiology Surveys (CPES) initiative combines 3 nationally representative studies: the National Survey of American Life, the National Comorbidity Survey Replication, and the National Latino and Asian American Study. The CPES data were collected between February 2001 and November 2003. Sampling weights accounting for unequal probability of selection into the CPES samples and nonresponse rates were created by CPES staff to enable nationally representative analyses of pairs of studies within the CPES. These weights were incorporated in all analyses presented in this study, allowing for the generation of population estimates by analyzing data specific to populations of interest.<sup>10</sup> The CPES data collection used complex multistage area probability sampling methods using sampling frames and sample selection procedures developed as a part of the University of Michigan Survey Research Center National Sample Design.<sup>11</sup> The method used to integrate the individual CPES studies was based on a multiple-frame approach adapted from Hartley<sup>12,13</sup> and described in Heeringa et al.<sup>11</sup>

The CPES interviewers used face-to-face computer-assisted interview technology to collect data from integrated national household probability samples of noninstitutionalized adults. Specially trained nonclinician interviewers administered to respondents the World Mental Health (WMH) Composite International Diagnostic Interview (CIDI), which can be used to compute indicators of past-year DSM-IV diagnoses of a major depressive episode.<sup>14</sup> Fair to good concordance values have been reported between nonclinician-administered WMH-CIDIs and clinician-administered Structured Clinical Interview for DSM-IV reappraisals.<sup>15,16</sup> The overall CPES response rate was 72.3%. Final response rates for the CPES sample design were computed following the best-practice guidelines of the American Association for Public Opinion Research, incor-

porating disproportionate sampling, household screening, and 2-phase sampling for nonresponse follow-up.<sup>11</sup>

### ANALYSIS OF SUBPOPULATIONS

We examined depression care among 5 major ethnic/racial groups who self-identified as Mexican, Puerto Rican, Caribbean black, African American, and non-Latino white. Our primary interest was in depression care among the subpopulation who met DSM-IV criteria for 12-month major depression derived from the WMH-CIDI. Ethnicity/race was the primary predictor of the main depression care outcome measures (see later). Appropriate methods for subpopulation analyses of complex sample survey data were used for estimation of descriptive parameters and estimation of analytic models.<sup>17,18</sup>

### MAIN OUTCOME MEASURES

Two groups of depression care outcomes were examined: pharmacotherapy and psychotherapy. With pharmacotherapy, antidepressant agent use was determined by self-report and pill bottle inventories. Trained interviewers recorded prescription antidepressant generic and trade names from pill bottles during interviews. Generic and trade names were reviewed by 2 board-certified psychiatrists and a psychiatric nurse specialist to verify that the drugs were antidepressants prior to drug coding for the analyses. For psychotherapy, respondents were asked “How many visits” were made to a mental health professional (ie, psychiatrist, psychologist, counselor, social worker, and other health professionals) “in the past 12 months?” and “How many minutes these visits lasted on average?” Lay counselors (eg, pastors) were excluded. The following indicators of past 12-month use of depression care were computed for analysis purposes: (1) any pharmacotherapy; (2) any psychotherapy; (3) either of the aforementioned types of therapy; and (4) combined therapies.

To determine the adequacy of treatment, we relied on the American Psychiatric Association *Practice Guideline for the Treatment of Patients With Major Depressive Disorder*.<sup>3</sup> In this study, guideline-concordant pharmacotherapy was defined as the use of an antidepressant for at least 60 days with supervision by a psychiatrist, or other prescribing clinician, for at least 4 visits in the past year. For psychotherapy, guideline concordance was operationalized as having at least 4 visits to a mental health professional in the past year lasting on average for at least 30 minutes each.

### PRIMARY PREDICTOR MEASURES

Ethnicity/race was the primary Andersen model predisposing factor predictor used among the subpopulation who met 12-month major depression criteria. The 5 major ethnic/racial groups examined were Mexican American, Puerto Rican, Caribbean black, African American, and non-Latino white (reference group).

### DEPRESSION CARE NEED MEASURE

To determine if the need for depression care differed between ethnic/racial groups, we compared symptom severity ratings between groups. The Quick Inventory of Depressive Symptomatology Self-Report was used to measure symptom severity during the worst 2-week period of the past year.<sup>19</sup> The Quick Inventory of Depressive Symptomatology Self-Report is a brief and reliable test that has been validated using other established measures of depression severity (eg, 24-item Hamilton Depression Rating Scale). We opted to compare depression severity ratings (as opposed to symptom counts) since they are a commonly used indicator of need for treatment in clinical trials.

**Table 1. Demographic Characteristics of the Collaborative Psychiatric Epidemiology Surveys Respondents**

Characteristic	% (SE)					
	Total Sample	Mexican American	Puerto Rican	Caribbean Black	African American	Non-Latino White
Sample size	15 762	1442	495	1492	4746	7587
Age, y						
18-34	31.03 (1.10)	52.10 (2.06)	38.78 (2.88)	40.73 (1.72)	36.25 (1.27)	27.80 (1.35)
35-64	52.28 (1.30)	41.43 (2.10)	51.62 (2.20)	48.49 (1.63)	52.13 (1.05)	53.50 (1.63)
≥65	16.70 (0.91)	6.47 (1.03)	9.61 (3.61)	10.78 (2.35)	11.62 (0.66)	18.70 (1.14)
Sex						
F	52.43 (0.80)	46.54 (2.20)	51.05 (2.09)	50.26 (2.92)	56.09 (0.77)	52.55 (1.02)
M	47.57 (0.80)	53.46 (2.20)	48.95 (2.09)	49.74 (2.92)	43.91 (0.77)	47.45 (1.02)
Education, y						
<12	17.65 (0.81)	48.22 (2.13)	34.59 (2.79)	20.14 (1.79)	24.00 (1.13)	13.20 (0.95)
12	31.86 (1.09)	28.44 (1.48)	28.17 (2.20)	30.38 (1.93)	37.88 (0.99)	31.39 (1.39)
13-15	27.04 (0.76)	16.04 (1.49)	25.76 (2.01)	27.33 (3.30)	24.26 (0.87)	28.65 (1.01)
≥16	23.44 (1.07)	7.31 (0.85)	11.47 (1.63)	22.16 (1.44)	13.86 (1.01)	26.76 (1.38)
Insurance						
No	13.42 (0.69)	38.89 (2.64)	15.80 (1.93)	20.95 (1.50)	18.01 (0.80)	9.93 (0.78)
Yes	86.58 (0.69)	61.11 (2.64)	84.20 (1.93)	79.05 (1.50)	81.99 (0.80)	90.07 (0.78)
Income, \$						
0-17 999	19.6 (0.82)	33.2 (3.31)	30.9 (2.03)	19.3 (1.74)	31.3 (1.34)	16.3 (0.95)
18 000-31 999	15.7 (0.65)	19.8 (1.77)	14.3 (2.17)	26.8 (2.06)	24.1 (0.8)	13.9 (0.82)
32 000-54 999	22.8 (0.52)	21.2 (1.7)	19 (2.43)	22.7 (1.68)	23.4 (0.91)	22.9 (0.62)
≥55 000	42 (1.15)	25.8 (2.04)	35.8 (2.75)	31.3 (2.27)	21.2 (1.22)	47 (1.53)
Major depression <sup>a</sup>						
No	91.71 (0.31)	92.01 (0.63)	88.19 (1.43)	92.09 (1.69)	93.29 (0.42)	91.50 (0.38)
Yes	8.29 (0.31)	7.99 (0.63)	11.81 (1.43)	7.91 (1.69)	6.71 (0.42)	8.50 (0.38)
Depression severity score, mean (SE) <sup>b</sup>	14.88 (0.20)	14.83 (0.49)	13.69 (0.71)	13.59 (0.96)	14.91 (0.38)	14.91 (0.24)

<sup>a</sup> DSM-IV criteria for 12-month major depression based on World Mental Health Composite International Diagnostic Interviews.

<sup>b</sup> Quick Inventory of Depressive Symptomatology Self-Report; n=1028;  $F_{4,138}=1.06$ ; probability greater than  $F=0.38$ .

## COVARIATES

The base multivariate models included the additional predisposing factors of age and sex. Ages were grouped into 3 categories (18-34 years, 35-64 years, and >64 years). Additional covariates represented Andersen model enabling factors and included categorical measures of family income (<\$18 000; \$18 000-\$31 999; \$32 000-\$54 999; and ≥\$55 000), education (<12 years; 12 years; 13-15 years; and ≥16 years), health insurance, and household income. Health insurance coverage included Medicare, Medicaid, or TRICARE/CHAMPUS; current or former employee-based coverage; and coverage purchased directly from an insurance company (including group purchasing, eg, AARP [formerly known as the American Association of Retired Persons]).

## ANALYTIC APPROACH

Procedures designed for the analysis of complex sample survey data in the Stata software package were used for analyses on all subpopulations.<sup>20</sup> All statistical estimates were weighted, using the CPES sampling weights to account for individual-level unequal probabilities of selection into the samples, individual nonresponse, and additional poststratification to ensure representation of the US population.<sup>11</sup> Design-based analyses, specifically a Taylor series linearization approach to variance estimation, were used to account for the complex multistage clustered design of the CPES samples when computing estimated standard errors.<sup>21</sup>

First, sample estimates describing demographic characteristics were calculated. Next, ordinary least squares regression models were used to compare the depression severity between the 5 ethnic/racial groups. The following analyses were exclu-

sively focused on the subpopulation of respondents who met WMH-CIDI 12-month major depression criteria. Then, the prevalence of any past-year depression pharmacotherapy and psychotherapy and guideline-concordant therapies use was calculated. Finally, 6 multivariate logistic regression models were fitted. The first set of 3 models was used to predict the probability of pharmacotherapy and/or psychotherapy use by the 5 groups of interest. The second set of models was used to predict the probability of receiving guideline-concordant, minimally adequate pharmacotherapy and/or psychotherapy.

## RESULTS

The CPES sample characteristics and prevalence estimates of 12-month major depression for the 5 ethnic/racial groups are provided in **Table 1**.

## DEPRESSION CARE NEED

The mean values for Quick Inventory of Depressive Symptomatology Self-Report scores between ethnic/racial groups were similar (Table 1). Among respondents meeting 12-month major depression criteria, Mexican American, African American, and non-Latino white individuals had similar depression severity rating scores, which were slightly higher than those of Puerto Rican and Caribbean black individuals. The estimates of the multivariate regression model for our severity outcome, controlling for age and sex, show that ethnic/racial groups did not differ in their mean level of severity relative to

**Table 2. Prevalence of Past-Year Depression Care Use Among Respondents Meeting 12-Month Major Depressive Episode Criteria in the United States<sup>a</sup>**

	% (SE)	
	Use	Guideline-Concordant Use
<b>Pharmacotherapy</b>		
Mexican American	19.25 (4.34)	5.57 (2.66)
Puerto Rican	31.64 (7.83)	12.35 (6.31)
Caribbean black	18.39 (11.43)	0.49 (0.36)
African American	18.28 (2.97)	4.89 (1.13)
Non-Latino white	37.28 (2.11)	12.29 (1.47)
Total sample	33.86 (1.87)	10.98 (1.23)
<b>Psychotherapy</b>		
Mexican American	29.53 (4.89)	11.23 (3.78)
Puerto Rican	42.87 (8.05)	18.75 (5.76)
Caribbean black	23.95 (10.82)	13.25 (10.90)
African American	34.44 (2.91)	13.59 (2.10)
Non-Latino white	47.29 (2.86)	20.62 (1.78)
Total sample	44.44 (2.49)	19.13 (1.51)
<b>Any depression therapy</b>		
Mexican American	33.61 (4.93)	12.07 (3.83)
Puerto Rican	49.19 (7.19)	24.41 (8.01)
Caribbean black	29.21 (11.95)	13.50 (10.90)
African American	39.66 (3.08)	13.97 (2.08)
Non-Latino white	53.96 (3.17)	23.05 (1.88)
Total sample	50.76 (2.76)	21.28 (1.60)
<b>Combined depression therapy</b>		
Mexican American	15.18 (4.39)	4.73 (2.57)
Puerto Rican	25.32 (8.05)	6.69 (3.70)
Caribbean black	13.12 (10.93)	0.23 (0.24)
African American	13.06 (2.44)	4.50 (1.16)
Non-Latino white	30.61 (1.66)	9.85 (1.25)
Total sample	27.55 (1.51)	8.83 (1.05)

<sup>a</sup>Based on World Mental Health Composite International Diagnostic Interview. Results are from the Collaborative Psychiatric Epidemiology Surveys.

the non-Latino white referent group. Further, a Wald test ( $F_{4,138}=0.66$ ) showed that the coefficients for the ethnic/racial dummy variables were not jointly different than zero (probability  $>F=0.62$ ). These findings indicated that depression treatment need was not significantly different and therefore was not included in subsequent statistical models.

#### PREVALENCE ESTIMATES OF PAST-YEAR PHARMACOTHERAPY USE AND GUIDELINE-CONCORDANT USE AMONG RESPONDENTS MEETING 12-MONTH MAJOR DEPRESSION CRITERIA

Overall, about 1 in 3 respondents who met WMH-CIDI criteria for 12-month major depression reported having used an antidepressant agent in the past year (**Table 2**). Puerto Rican and non-Latino white individuals reported the highest use, whereas Mexican American, Caribbean black, and African American individuals reported the lowest use of pharmacotherapy.

Among pharmacotherapy users, about one-third had used antidepressant agents according to the study criteria. The guideline-concordant use was highest among

Puerto Rican and non-Latino white individuals and lowest among Mexican American, Caribbean black, and African American individuals.

#### PREVALENCE ESTIMATES OF PAST-YEAR DEPRESSION PSYCHOTHERAPY USE AND GUIDELINE-CONCORDANT USE AMONG RESPONDENTS MEETING 12-MONTH MAJOR DEPRESSION CRITERIA

Psychotherapy use was higher than pharmacotherapy use overall. A similar pattern emerged, with Puerto Rican and non-Latino white individuals reporting the highest use of psychotherapy, and Mexican American, Caribbean black, and African American individuals reporting the lowest use.

The proportions of psychotherapy use that were guideline concordant were higher than for depression pharmacotherapy use. Notably, those proportions were especially higher among Mexican American, Caribbean black, and African American individuals. In a separate logistic regression analysis (not shown), African American individuals (odds ratio [OR], 2.65; 95% confidence interval [CI], 1.47-4.77) reported significantly higher odds of psychotherapy use compared with pharmacotherapy use relative to non-Latino white individuals; however, for Mexican American individuals (OR, 1.58; 95% CI, 0.78-3.20), the association was not significantly different. The proportions of concordant psychotherapy were higher for each ethnic/racial group examined compared with pharmacotherapy. This suggests that in terms of depression care, although still too low, the adherence rate for psychotherapy was higher than for pharmacotherapy.

#### PREVALENCE ESTIMATES OF PAST-YEAR DEPRESSION THERAPY USE AND GUIDELINE-CONCORDANT USE AMONG RESPONDENTS MEETING 12-MONTH MAJOR DEPRESSION CRITERIA

More than half of the respondents who met study criteria for 12-month major depression received at least 1 form of depression care. As before, Mexican American, Caribbean black, and African American individuals were the least likely to have used either pharmacotherapy or psychotherapy in the past year. About 1 in 5 respondents (21.3%) with 12-month major depression had at least 1 form of guideline-concordant therapy in the past year. The proportions of Puerto Rican and non-Latino white individuals who used concordant therapies in the past year were nearly twice those of Mexican American, Caribbean black, and African American individuals.

The overall rate of past-year combined pharmacotherapy and psychotherapy was lower than each independent therapy (eg, psychotherapy alone) and consistently lower in each of the ethnic/racial groups examined. Consistent with the findings shown in Table 2, non-Latino white and Puerto Rican individuals had the highest rates of combined depression therapies compared with African American, Caribbean black, and Mexican American individuals.

**Table 3. Predictors of Past-Year Pharmacotherapy in the United States Among Respondents Meeting 12-Month Major Depressive Episode Criteria<sup>a</sup>**

	OR (95% CI)			
	Any Past-Year Pharmacotherapy		Guideline-Concordant Past-Year Pharmacotherapy	
	Model 1	Model 2	Model 1	Model 2
<b>Predisposing factors</b>				
Ethnicity/race				
Non-Latino white	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Mexican American	0.47 (0.26-0.85) <sup>b</sup>	0.54 (0.29-1.03) <sup>c</sup>	0.47 (0.16-1.34)	0.51 (0.16-1.60)
Puerto Rican	0.83 (0.41-1.68)	0.83 (0.41-1.68)	1.04 (0.32-3.34)	1.03 (0.31-3.40)
Caribbean black	0.48 (0.11-2.00)	0.54 (0.13-2.23)	0.04 (0.01-0.18) <sup>b</sup>	0.05 (0.01-0.22) <sup>b</sup>
African American	0.38 (0.25-0.57) <sup>b</sup>	0.40 (0.26-0.62) <sup>b</sup>	0.38 (0.22-0.64) <sup>b</sup>	0.41 (0.24-0.72)
Age, y				
18-34	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
35-64	2.09 (1.40-3.13) <sup>b</sup>	2.03 (1.34-3.09) <sup>b</sup>	1.59 (0.95-2.65) <sup>c</sup>	1.55 (0.90-2.68)
≥65	1.08 (0.47-2.51)	0.93 (0.40-2.13)	1.56 (0.46-5.28)	1.49 (0.46-4.80)
Sex				
F	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
M	0.73 (0.53-1.01) <sup>c</sup>	0.72 (0.52-0.99) <sup>d</sup>	0.87 (0.53-1.43)	0.85 (0.50-1.43)
<b>Enabling factors</b>				
Education, y				
<12		1 [Reference]		1 [Reference]
12		1.03 (0.67-1.57)		0.87 (0.43-1.73)
13-15		1.06 (0.70-1.59)		1.16 (0.56-2.41)
≥16		1.04 (0.61-1.77)		0.89 (0.41-1.94)
Health insurance				
No		1 [Reference]		1 [Reference]
Yes		2.61 (1.49-4.59) <sup>b</sup>		1.51 (0.72-3.18)
Household income, \$				
0-17 999		0.94 (0.54-1.61)		0.73 (0.40-1.33)
18 000-31 999		1.03 (0.54-2.00)		0.47 (0.21-1.06) <sup>c</sup>
32 000-54 999		1 [Reference]		1 [Reference]
≥55 000		0.96 (0.59-1.57)		0.85 (0.43-1.67)

Abbreviations: CI, confidence interval; OR, odds ratio.

<sup>a</sup>Based on World Mental Health Composite International Diagnostic Interview. Results are from the Collaborative Psychiatric Epidemiology Surveys.

<sup>b</sup> $P \leq .01$ .

<sup>c</sup> $P \leq .10$ .

<sup>d</sup> $P \leq .05$ .

Also consistent with our findings in Table 2, non-Latino white and Puerto Rican individuals had the highest guideline-concordance rates for both forms of depression treatment. We examined the proportions of concordant depression therapies among respondents using both therapies (not shown). Most combined therapies use (39.7%) did not meet guideline criteria for either treatment type. About one-third (32.1%) used both therapies according to guidelines, followed by psychotherapy alone (20.5%) and pharmacotherapy only (7.8%). These proportions did not vary significantly between ethnic/racial groups.

#### PREDICTORS OF PHARMACOTHERAPY USE AND GUIDELINE-CONCORDANT USE AMONG RESPONDENTS MEETING 12-MONTH MAJOR DEPRESSION CRITERIA

The predisposing factors predicting past-year depression pharmacotherapy are shown in the first model of **Table 3**. Compared with non-Latino white individuals, Mexican American and African American individuals had significantly lower odds of past-year depression pharmaco-

therapy. With enabling factors added to the model, African American individuals had significantly lower odds of pharmacotherapy use compared with non-Latino white individuals and the lower odds of use by Mexican American individuals was marginally significant. Of the enabling factors, health insurance coverage was significantly associated with higher odds of pharmacotherapy use.

For guideline-concordant past-year depression pharmacotherapy, Caribbean black and African American individuals had significantly lower odds compared with non-Latino white individuals. Adding enabling factors to the previous model had little effect on the low odds of depression pharmacotherapy for the 2 black groups studied. None of the enabling factors were significantly associated with the odds of concordant pharmacotherapy.

#### PREDICTORS OF PSYCHOTHERAPY USE AND GUIDELINE-CONCORDANT USE AMONG RESPONDENTS MEETING 12-MONTH MAJOR DEPRESSION CRITERIA

Mexican American and African American individuals had significantly lower odds of psychotherapy use com-

pared with non-Latino white individuals (**Table 4**). The lower odds of psychotherapy use by Mexican American individuals was reduced to marginal significance by inclusion of enabling factors in the previous model, but the significantly low odds of psychotherapy use by African American individuals was largely unaffected. Health insurance coverage was associated with significantly increased odds of psychotherapy use.

For guideline-concordant psychotherapy use, African American individuals had significantly lower odds compared with non-Latino white individuals, and there was a trend for lower concordant use by Mexican American individuals. When enabling factors were introduced into the model, the statistically significant or nearly significant associations for African American and Mexican American individuals were markedly reduced. Of the enabling factors, education beyond high school level was associated with significantly increased odds of concordant psychotherapy use.

#### PREDICTORS OF ANY DEPRESSION THERAPY USE AND GUIDELINE-CONCORDANT USE AMONG RESPONDENTS MEETING 12-MONTH MAJOR DEPRESSION CRITERIA

Mexican American and African American individuals had significantly lower odds of any depression therapy use (ie, psychotherapy or pharmacotherapy) than non-Latino white individuals (**Table 5**). When enabling factors were added to the model, the difference in odds of depression therapy use for Mexican American individuals was reduced and rendered only marginally significantly lower compared with non-Latino white individuals. Health insurance coverage doubled the odds of any past-year depression therapy use, whereas other enabling factors were not significant.

For any guideline-concordant past-year depression therapy among respondents meeting 12-month major depression criteria, Mexican American and African American individuals had significantly lower odds. With the inclusion of enabling factors, African American individuals had significantly lower odds of any concordant depression therapy compared with non-Latino white individuals, and the odds for Mexican American individuals were no longer significant. Of the enabling factors examined, higher education was associated with increased odds of having past-year guideline-concordant depression therapy.

#### PREDICTORS OF COMBINED DEPRESSION THERAPY USE AND GUIDELINE-CONCORDANT USE AMONG RESPONDENTS MEETING 12-MONTH MAJOR DEPRESSION CRITERIA

African American (OR, 0.34; 95% CI, 0.22-0.53) and Mexican American (OR, 0.46; 95% CI, 0.23-0.93) individuals reported significantly lower odds of past-year combined depression therapy compared with non-Latino white individuals (data not shown). Following aforementioned results patterns, the inclusion of enabling factors had little effect on the odds for African American individuals, but the odds for Mexican American individuals

were only marginally significant. Health insurance coverage (OR, 2.37; 95% CI, 1.21-4.66) was associated with significantly increased odds of combined depression therapy use.

For past-year combined guideline-concordant therapies, Caribbean black individuals (OR, 0.02; 95% CI, 0.00-0.18) and African American individuals (OR, 0.44; 95% CI, 0.25-0.79) had significantly lower odds compared with non-Latino white individuals. Adding enabling factors to the previous model had little effect on the significantly low odds for Caribbean black and African American individuals for combined depression therapy.

#### COMMENT

Although depression is a leading cause of disability in the United States, few Americans with recent major depression receive any form of standard care and even fewer receive care that is concordant with the American Psychiatric Association guideline.<sup>3</sup> Ethnicity and race were found to be important determinants of receiving pharmacotherapy, psychotherapy, or any form of treatment and care that meets the current guideline for depression care. By disaggregating ethnic/racial groups, we were able to specify which subgroups, namely African American and Mexican American, were the least likely to receive depression care, especially guideline-concordant care.<sup>3</sup> The ethnic/racial treatment differences found herein were in the context of indistinguishable depression need or severity between groups. Our findings underscore the importance of disaggregating ethnic/racial groups to understand which ones are using what types of depression treatment to unravel disparities in care. By disaggregating depression treatment types, we provided detailed patterns of major depression care use and guideline-concordant use among major ethnic/racial groups in the United States that have been overlooked.<sup>22,23</sup> Ultimately, this greater specificity may provide useful insights for better targeting mental health care to minority populations and improving depression care for all Americans.

In this national study of depression care, psychotherapy was used at higher rates than pharmacotherapy. The differences in therapy modality were most prominent among African American and Mexican American individuals, the 2 groups who reported the lowest rates of any depression treatment use. More importantly perhaps was our finding that psychotherapy users were more likely to receive guideline-concordant therapy compared with depression pharmacotherapy. The differences between guideline-concordant psychotherapy and pharmacotherapy use were highest among Caribbean black, African American, and Mexican American individuals, respectively. One possible explanation for the higher use and guideline-concordant use of psychotherapy than pharmacotherapy found in this study is that psychotherapy may have a comparably higher specificity of use for major depression. Although our findings and hypothesis will require further inquiry for support, the findings herein demonstrate the value of disaggregating treatment types to better characterize mental health

**Table 4. Predictors of Past-Year Psychotherapy in the United States Among Respondents Meeting 12-Month Major Depressive Episode Criteria<sup>a</sup>**

	OR (95% CI)			
	Any Past-Year Psychotherapy		Guideline-Concordant Past-Year Psychotherapy	
	Model 1	Model 2	Model 1	Model 2
<b>Predisposing factors</b>				
Ethnicity/race				
Non-Latino white	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Mexican American	0.52 (0.31-0.89) <sup>b</sup>	0.58 (0.32-1.05) <sup>c</sup>	0.50 (0.23-1.07) <sup>c</sup>	0.65 (0.29-1.44)
Puerto Rican	0.89 (0.45-1.73)	0.88 (0.43-1.79)	0.91 (0.42-1.95)	1.13 (0.50-2.59)
Caribbean black	0.42 (0.14-1.26)	0.46 (0.17-1.29)	0.62 (0.09-4.09)	0.74 (0.14-4.02)
African American	0.59 (0.41-0.83) <sup>d</sup>	0.61 (0.41-0.93) <sup>d</sup>	0.60 (0.40-0.90) <sup>d</sup>	0.72 (0.48-1.09)
Age, y				
18-34	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
35-64	1.76 (1.24-2.50) <sup>d</sup>	1.72 (1.20-2.45) <sup>d</sup>	1.10 (0.70-1.72)	1.05 (0.63-1.74)
≥65	0.80 (0.35-1.87)	0.71 (0.30-1.68)	0.77 (0.28-2.09)	0.74 (0.28-1.94)
Sex				
F	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
M	0.79 (0.52-1.20)	0.80 (0.53-1.20)	0.88 (0.60-1.29)	0.97 (0.65-1.44)
<b>Enabling factors</b>				
Education, y				
<12		1 [Reference]		1 [Reference]
12		0.94 (0.64-1.39)		1.09 (0.59-2.04)
13-15		1.05 (0.67-1.66)		2.21 (1.30-3.75) <sup>d</sup>
≥16		1.12 (0.65-1.96)		2.64 (1.41-4.95) <sup>d</sup>
Health insurance				
No		1 [Reference]		1 [Reference]
Yes		1.74 (1.20-2.52) <sup>d</sup>		1.68 (0.83-3.40)
Household income, \$				
0-17 999		1.01 (0.68-1.49)		1.08 (0.66-1.78)
18 000-31 999		0.88 (0.53-1.46)		0.76 (0.43-1.34)
32 000-54 999		1 [Reference]		1 [Reference]
≥55 000		0.92 (0.57-1.49)		1.05 (0.61-1.82)

Abbreviations: CI, confidence interval; OR, odds ratio.

<sup>a</sup>Based on World Mental Health Composite International Diagnostic Interview. Results are from the Collaborative Psychiatric Epidemiology Surveys.

<sup>b</sup> $P \leq .05$ .

<sup>c</sup> $P \leq .10$ .

<sup>d</sup> $P \leq .01$ .

care use and means for improving care delivery. In addition, although we did not directly assess treatment preferences, our findings regarding higher psychotherapy use are consistent with previous studies reporting higher acceptability for psychotherapy over pharmacotherapy, especially among ethnic/racial minorities facing disparities in depression care.<sup>24-26</sup>

Overall, Puerto Rican individuals had the highest prevalence of 12-month major depression compared with the other ethnic/racial groups examined in this study, a finding consistent with the higher overall rates of psychiatric disorders and dual diagnoses.<sup>27,28</sup> Paradoxically, Puerto Rican individuals, along with Caribbean black individuals, had the lowest depression severity ratings of the ethnic/racial groups. Puerto Rican individuals had rates of depression treatment use and concordant use that were similar to, and in some instances higher than, those of non-Latino white individuals. The reasons for the relatively “good” depression care among Puerto Rican individuals are encouraging and perhaps attributable to their nonimmigrant status and greater English-language dominance in this population. However, the differences in access and quality of care are not always detectable because of the convention of

“lumping” rather than “sorting” Latino subgroups in US health databases. Lumping makes it nearly impossible to identify determinants of health care quality for ethnic/racial subgroups. What is clear from our study is that disparities in depression care among Latino individuals are predominantly found among Mexican American individuals. The public mental health significance of our finding is that Mexican American individuals represent more than two-thirds of Latino individuals in the United States.<sup>29</sup> Our findings indicate that efforts to reduce disparities in care among Latino individuals should especially focus on Mexican American individuals. Furthermore, our findings show that disparities in depression care for Mexican American individuals were attenuated by factors that enable access to health care and may guide efforts for reducing disparities in health care.

Health insurance coverage was associated with higher depression care but not guideline-concordant use among respondents who met 12-month major depression criteria. This suggests that while health insurance coverage may enable better access to depression care it does not ensure “better” care. More education was associated with higher guideline-concordant psychotherapy use but

**Table 5. Predictors of Past-Year Pharmacotherapy and Psychotherapy in the United States Among Collaborative Psychiatric Epidemiologic Survey Respondents Meeting 12-Month Major Depressive Episode Criteria<sup>a</sup>**

	OR (95% CI)			
	Any Past-Year Depression Therapy		Any Guideline-Concordant Past-Year Depression Therapy	
	Model 1	Model 2	Model 1	Model 2
<b>Predisposing factors</b>				
Ethnicity/race				
Non-Latino white	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
Mexican American	0.50 (0.30-0.83) <sup>b</sup>	0.57 (0.32-1.01) <sup>c</sup>	0.48 (0.23-0.99) <sup>d</sup>	0.60 (0.28-1.28)
Puerto Rican	0.89 (0.49-1.61)	0.89 (0.47-1.67)	1.11 (0.46-2.64)	1.32 (0.52-3.35)
Caribbean black	0.44 (0.16-1.27)	0.51 (0.19-1.34)	0.57 (0.09-3.61)	0.68 (0.13-3.66)
African American	0.56 (0.39-0.80)	0.58 (0.38-0.89) <sup>b</sup>	0.54 (0.37-0.79) <sup>b</sup>	0.63 (0.43-0.95) <sup>d</sup>
Age, y				
18-34	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
35-64	2.06 (1.49-2.84)	2.00 (1.43-2.82) <sup>b</sup>	1.20 (0.77-1.88)	1.16 (0.70-1.90)
≥65	0.96 (0.41-2.24)	0.82 (0.35-1.92)	0.84 (0.33-2.13)	0.82 (0.33-2.03)
Sex				
F	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]
M	0.68 (0.46-1.00) <sup>d</sup>	0.69 (0.47-1.00) <sup>d</sup>	0.83 (0.59-1.17)	0.88 (0.61-1.26)
<b>Enabling factors</b>				
Education, y				
<12		1 [Reference]		1 [Reference]
12		1.09 (0.73-1.64)		1.06 (0.58-1.94)
13-15		1.08 (0.67-1.74)		1.77 (1.03-3.03) <sup>d</sup>
≥16		1.18 (0.65-2.15)		1.89 (1.04-3.42) <sup>d</sup>
Health insurance				
No		1 [Reference]		1 [Reference]
Yes		2.02 (1.45-2.81) <sup>b</sup>		1.62 (0.82-3.21)
Household income, \$				
0-17 999		0.97 (0.66-1.43)		0.97 (0.60-1.56)
18 000-31 999		0.83 (0.50-1.36)		0.77 (0.42-1.40)
32 000-54 999		1 [Reference]		1 [Reference]
≥55 000		0.83 (0.54-1.26)		1.09 (0.61-1.95)

Abbreviations: CI, confidence interval; OR, odds ratio.

<sup>a</sup>Based on World Mental Health Composite International Diagnostic Interview.

<sup>b</sup> $P \leq .05$ .

<sup>c</sup> $P \leq .10$ .

<sup>d</sup> $P \leq .01$ .

not use in general, which is consistent with previous work on mental health treatment adherence.<sup>30</sup> The precise reasons for this incongruity between use and guideline-concordant use are not entirely clear from this study; however, this may reflect interactions between patient nonadherence and inadequacies in patient monitoring by prescribing clinicians. For Caribbean black and African American individuals, however, neither health insurance coverage nor any other factor examined in this study explained their lower pharmacotherapy use, which is consistent with previous work.<sup>31,32</sup> African American individuals may find antidepressant agents less acceptable than other groups<sup>33,34</sup>; however, alternative explanations require further exploration. One alternative health care delivery-side explanation is that the large differences in depression care use by ethnic/racial groups in the United States suggest unmet need that may stem from “separate and unequal” sources of health care.<sup>35,36</sup>

Recent research indicates that perceived discrimination in general and perceptions of bias within the health care context can shape health care seeking and adherence behaviors. For example, perceived discrimination has been associated with delays or failure to seek treatment

for African American and Latino individuals.<sup>37-39</sup> Other studies have also related perceived discrimination by African American and Latino individuals with the use of alternative care instead of conventional care and with lower levels of satisfaction with care.<sup>40,41</sup> These studies have not focused on depression care, but this research suggests that future research should explore the extent to which patients’ subjective experiences of racial bias may affect their access and use of mental health care.

To our knowledge, this is the first national study to examine specific depression therapy types by disaggregated major ethnic/racial subgroups who met diagnostic criteria for major depression. By doing so, we revealed important patterns of therapy use by specific ethnic/racial groups that were masked in previous research.<sup>23,42</sup> Specifically, we demonstrated that Latino disparities in depression care occurred among Mexican American individuals. Additionally, the level of depression care for Puerto Rican individuals is generally similar to non-Latino white individuals and in some instances is superior. This study used sophisticated sampling procedures that make it among the largest and most inclusive studies of depression care use among Americans, regard-



less of health care insurance coverage. Such inclusiveness, we believe, avoids potential sampling biases in administrative medical record studies where only patients with access to health care are examined. Avoiding this sampling bias is essential to evaluating ethnic/racial disparities in health care since national estimates of health insurance coverage among ethnic/racial minorities are lower than among non-Latino white individuals.<sup>29</sup>

Although our results are most likely the best estimates to date, our study should be interpreted in the context of several limitations. The CPES excluded homeless or institutionalized persons, which could underestimate the unmet need for treatment of depressive disorders, particularly among ethnic/racial minorities who are incarcerated at a higher rate than non-Latino white individuals nationally.<sup>43</sup> Second, as a diagnostic instrument, the WMH-CIDI has a modest sensitivity and high specificity for detecting “true” psychiatric disorders (eg, major depression) among CPES respondents.<sup>4,32</sup> Thus, it is likely that some cases with “true” psychiatric disorders were missed, which could artificially inflate the proportion of respondents without mental disorders using depression care. Third, our definition of guideline concordance may have influenced our estimates. Although we examined only mental health professionals providing psychotherapy, we were unable to determine if the specific types of psychotherapy (eg, cognitive-behavioral) reported were “evidence based” as prescribed in the American Psychiatric Association guideline.<sup>3</sup> Additionally, our use of the American Psychiatric Association guideline did not consider brief and chronic depressive conditions, which may be missed by our definition of concordant use. Fourth, concerted efforts to “harmonize” the CPESs for use among the various ethnic/racial groups may have introduced unrecognized errors that could have affected the results of this study. Given the magnitude of inequalities in depression care that we observed, the main inferences of our work should be stable.

## CONCLUSIONS

Most Americans with recent major depression go untreated or undertreated. Our findings underscore the importance of disaggregating ethnic/racial groups. Failing to do so obscures depression care research, especially for the largest and fastest-growing segment of the US population, Latino individuals, and especially Mexican American individuals.<sup>4,7</sup> Consistent with previous studies that have aggregated depression therapy, we found that ethnic/racial group was an important predictor of depression care in the United States.<sup>23,32</sup> In contrast to previous work that has aggregated Latino groups, we found striking inequities in depression care and guideline-concordant use for Mexican American individuals.<sup>4,7</sup> Nationally, psychotherapy was used by higher proportions of Americans with recent depression. Interestingly, lack of health insurance coverage partially explained disparities in depression care for Mexican American individuals, but not for African American individuals, suggesting other factors may be contributing to their differences.

With the recent passing of a US Mental Health Parity Act, our findings should provide guidance to better-

enabled mental health to improve the depression care of all Americans and for reducing disparities among ethnic/racial minorities. Improving mental health care at common points of service delivery (eg, primary care) and improving the availability of preferred depression therapies may be needed. Collaborative care models that provide depression therapy choices show promise for improving care, patient outcomes, and clinician satisfaction, while containing costs.<sup>44,45</sup> Finally, new independent research may be needed to explore adherence, efficacy, and cost efficacy of different depression therapies within and between ethnic/racial groups.

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