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Racial and Ethnic Disparities in Detection and Treatment of Depression and Anxiety Among Psychiatric and Primary Health Care Visits, 1995–2005

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Abstract

Context—Recent evidence questions whether formerly documented disparities in care for common mental disorders among African Americans and Hispanics still remain. Also, whether disparities exist mainly in psychiatric settings or primary health care settings is unknown.

Objective—To comprehensively examine time trends in outpatient diagnosis and treatment of depression and anxiety among ethnic groups in primary care and psychiatric settings.

Design and Setting—Analyses of office-based outpatient visits from the National Ambulatory Medical Care Study from 1995–2005 (n = 96,075).

Participants—Visits to office-based primary care physicians and psychiatrists in the United States.

Main Outcome Measures—Diagnosed with depression or anxiety, received counseling or a referral for counseling, received an antidepressant prescription, and any counseling or antidepressant care.

Results—In these analyses of 10-year trends in treatment of common mental disorders, disparities in counseling/referrals for counseling, antidepressant medications, and any care vastly improved or were eliminated over time in psychiatric visits. Continued disparities in diagnoses, counseling/referrals for counseling, antidepressant medication, and any care are found in primary care visits.

Conclusions—Disparities in care for depression and anxiety among African Americans and Hispanics remain in primary care. Quality improvement efforts are needed to address cultural and linguistic barriers to care.

Keywords

depression; anxiety; mental health; treatment; diagnosis; ethnic disparities

Common depressive and anxiety disorders are often under-diagnosed and under-treated, with disparities in detection and appropriate care noted in earlier studies of African Americans and Hispanics.¹⁻⁴ Although some recent data on disparities in general health care, including care for depression, question whether disparities are large enough to merit policy focus,⁵ other data demonstrate disparities for at least some groups persist in mental health care.⁶ In this paper, we examine trends in disparities in recognition and treatment of common depressive and anxiety disorders for African Americans and Hispanics, as compared with whites, over a 10-year period.

Both depressive and anxiety disorders can be effectively treated with antidepressant medication and structured psychotherapies in either psychiatric or primary health care settings.^{7,8} During the past decade, treatment rates for depression have generally increased across primary and specialty care among all race/ethnic groups,^{9,10} with a significant increase in the use of antidepressants and a decline in psychotherapy.¹¹ Some data suggest disparities in diagnosis and treatment combined across sectors have narrowed for minorities, although absolute rates of care have remained lower among nonwhites.¹¹ Two recent studies have demonstrated that disparities in mental health care are worsening.^{6,12}

To better understand mental health care disparities, the health care setting must be taken into consideration. Disparities may be different across primary care and psychiatric sectors for at least 2 reasons. First, changes in depression care differ by sector. Earlier studies note that although visits for depression doubled from 1985 to 1993–1994,¹² much of the increase in antidepressant prescriptions was among psychiatrists.^{11,12} More recently, data from 1990 to 1992 compared with 2001–2003 found that overall treatment for mental disorders increased 2.6-fold in the primary care sector and 2.2-fold in psychiatric settings.¹³ Similarly, medication treatment for panic disorder increased from 1992 through 1999, and prescribing differences between psychiatrists and primary care providers narrowed over time.¹⁴ Second, mechanisms for disparities might differ across the 2 sectors. Ethnic minorities are far less likely to be seen in psychiatry than in primary care.¹ Once minorities get to psychiatric care, lower rates of diagnostic accuracy may result in disparities. In primary care, disparities may result from failure to detect depression or anxiety in minority patients. In this article, we examine disparities in depression and anxiety care separately in psychiatric and primary care settings.

Our examination of mental health care disparities is informed by the Institute of Medicine (IOM) report,¹⁵ where a disparity is defined as any difference in the use of health services after adjusting for preferences and health care needs. The IOM definition contrasts with measures of disparity based on unadjusted differences between groups,¹⁶ or measures based on adjustment for socioeconomic variables such as income.¹⁷ The IOM approach regards socioeconomic factors such as income or insurance as potential mediators of disparities in health care. For example, if Hispanics are more likely to be uninsured and uninsurance is associated with poor access, insurance mediates disparities of this group.¹⁸ Recent data suggest 1-year rates of depression are relatively similar across white,¹⁹ Hispanic,²⁰ and black²¹ populations in the United States, suggesting that health care need should be similar across ethnic groups. Because racial/ethnic differences may exist in awareness and help-seeking for mental health conditions²² and recognition of depression/anxiety may lead to appropriate treatment,²³ we examine both group differences in and the effect of diagnosis on treatment. We do not adjust for preferences, as the issue of how to best measure and control for preferences within the IOM framework has not been resolved.¹⁸

Using National Ambulatory Medical Care Study (NAMCS) data from 1995 through 2005, we examine trends in diagnoses and treatment of depressive and anxiety disorders by psychiatrists and primary care physicians, comparing visits by African American and

Hispanic patients with white patients. We provide a more comprehensive, detailed examination of racial/ethnic disparities in mental health care than currently exists by: (1) including common anxiety disorders in addition to depression, because a large number of office visits record anxiety as a diagnosis,²⁴ (2) including counseling and counseling referrals in addition to medication treatment, (3) examining racial/ethnic differences in specialty mental health settings separate from general medical settings, and (4) extending results through 2005. We hypothesize that diagnoses and treatment will increase over time and that racial/ethnic differences in diagnoses and treatment will persist but be reduced over time, especially in the primary care sector.

METHODS

Data Source

We used data from the National Ambulatory Medical Care Survey (NAMCS) for 1995–2005. NAMCS is a nationally representative sample of office-based physician visits that uses three-stage probability sampling described in detail elsewhere^{25,26} (documentation for individual years can be obtained at <http://www.cdc.gov/nchs/about/major/ahcd/ahcd1.htm>). Briefly, the first-stage probability sample consists of geographic units of counties, groups of counties, county equivalents, or towns/townships. The second-stage sample includes all eligible office-based physicians from the identified geographic units. Finally, a sample of office-based visits is systematically selected from a randomly assigned 1-week period, based on approximately 30 patient visits per physician. Earlier data allowed up to 3 diagnoses [recorded with International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9) codes] per visit and 6 prescriptions (coded according to the National Drug Code Directory); more recent data (2003–2005) include up to 8 prescriptions. Data include patient weights to adjust for probability of selection, nonresponse, and physician specialty, producing unbiased national estimates of office-based visits per year. All analyses were performed using survey procedures in SAS and SUDAAN using the design variables and weights provided by the National Center for Health Statistics (NCHS).

NAMCS data provide a broad snapshot of office-based care, but have several serious limitations. First, the data are based on physician or physician office staff reports, and thus data may not be reliable for estimating community rates of depression and treatment because of differential recognition, diagnosis, and treatment across physician practices. Because our primary aim is to identify such disparities and examine trends over time, NAMCS data are ideal for our purposes. Other limitations include that the unit of analysis is the visit, rather than the patient, and diagnoses, medications, and services provided reflect only the sampled visit. In addition, the number of prescriptions recorded for 2003–2005 is 8, but only 6 are recorded for 1995–2002. Furthermore, the questions used to record counseling or referrals for counseling change slightly across the years. We conducted additional analyses to determine how sensitive our results were to some of these limitations. These results are discussed below.

Measures

Outcomes—Outcomes include: (1) a diagnosis of depression or anxiety; (2) an antidepressant prescription; (3) receipt of counseling or referral for counseling; and (4) any mental health care (antidepressant prescription and/or counseling/referral for counseling).

Depression or anxiety diagnoses included any ICD-9 codes for depressive disorders (296.2–96.36, 309.1, 311), anxiety states (300.0, 300.01, 300.02, and 300.09), hysteria (300.10), phobic disorders (300.2–300.23, 300.29), neurasthenia (300.5), other neurotic disorders (300.8), neurotic depression (300.4), and unspecified neurotic disorders (300.9).

Antidepressant prescriptions included any selective serotonin reuptake inhibitors (eg, fluoxetine, sertraline, paroxetine), newer non-selective serotonin reuptake inhibitors (eg, venlafaxine, bupropion, mirtazapine), tricyclics (eg, amitriptyline, desipramine, imipramine), other heterocyclics (eg, amoxapine, maprotiline), and monoamine oxidase inhibitors (eg, phenelzine, tranylcypromine). We omitted trazodone because of its most common use as a sedative-hypnotic.

We constructed comparable counseling variables for 1995–2005 as follows. In 1995 and 1996, the counseling items included “mental health” and “psychotherapy;” for 1997–2000, the counseling items included “mental health,” “stress management,” and “psychotherapy;” for 2001–2004, counseling items included “mental health/stress management” and “psychotherapy;” and, for 2005 the counseling items included “stress management” and “psychotherapy.” Data before 1993 were not used because the counseling items were not defined, but must be derived from procedure codes. Counseling or a referral for counseling was coded 1 if the physician reported that counseling was provided or psychotherapy or mental health/stress management ordered. Finally, an indicator for receiving any care was constructed from the indicators for counseling and antidepressant prescription by coding 1 if either (or both) was present.

Demographic Characteristics—Race (white, black/African American, Asian, Native Hawaiian/other Pacific Islander, American Indian/Alaska Native) and ethnicity (Hispanic or non-Hispanic) were recorded as separate items by the physician or physician's staff. To examine disparities in care for African Americans and Hispanics, we derived a race/ethnicity variable with the following categories: white (non-Hispanic), African American (non-Hispanic), and Hispanic. Other races (n = 3784) were excluded. Gender was coded with males as the reference category, and age was measured continuously (with individuals younger than 18 excluded to focus on adult disparities).

Physician Specialty—Analyses were conducted separately for primary care specialties and psychiatrists. Primary care specialties included internal medicine, general/family practice, OB/GYN, and doctors of osteopathy. Other specialties were excluded.

Time Period—NCHS recommends combining 3–4 years of data when examining subgroups such as African Americans and Hispanics²⁶ to obtain at least 30 cases per important cell. To track trends over time, we collapsed the data into one 2-year time period (1995–1996) and three 3-year time periods (1997–1999, 2000–2002, and 2003–2005). For each racial/ethnic group within primary care and psychiatry, all time periods met the criteria of at least 30 cases diagnosed with depression/anxiety and receiving treatment (psychotherapy/ referral, antidepressants, or both). Time period is treated as an ordinal variable in the analyses.

Charlson-Deyo Comorbidity Index—As adapted by Deyo et al,²⁷ the Charlson comorbidity index²⁸ uses ICD-9 diagnosis codes to create a weighted, continuous measure of comorbidity, including chronic pulmonary disease, diabetes, HIV/AIDS, liver disease, cancer, hemiplegia or paraplegia, dementia, rheumatologic disease, peptic ulcer disease, chronic renal failure, peripheral vascular disease, metastatic solid tumor, cerebrovascular disease, congestive heart failure, and myocardial infarction. We include this variable as a measure of health status, to insure that poorer overall health does not account for any disparities in depression care found.

Analysis

We computed descriptive statistics and estimated multivariate logistic regression models to predict receiving a depression/anxiety diagnosis and receiving treatment using SAS software with SUDAAN,²⁹ which takes complex sampling and survey design into account when estimating standard errors. Strata and patient visit weight variables were provided by NCHS and were used throughout. Logistic regression analyses controlled for age, gender, the Charlson-Deyo index,^{27,28} and depression/anxiety diagnosis (in models predicting treatment; effects for control variables are not reported but available from first author). To determine whether disparities in diagnoses and care changed over time, we estimated models pooling data for all years and included predictors for race/ethnicity, time period, and interaction terms for race/ethnicity by time period. We use an overall group test (F-statistic) to determine if the interaction was significant, indicating that the trend over time was different by race/ethnicity.

To examine differences by race/ethnicity in terms of percentages rather than odds ratios while still adjusting for covariates, we calculated predicted probabilities from our fitted logistic regression models for each combination of time period and race/ethnicity using standardized predictions (a.k.a. predictive marginals).³⁰ We used the estimated regression parameters and each individual's observed values for all covariates other than time and race/ethnicity to calculate the predicted outcome assuming the individual had been in a given race/ethnicity and time group. We then calculated the mean prediction under each scenario. For the inference of testing whether or not the change in the differences between groups over time are significant, we use the beta coefficients from the logistic regression models to calculate the change in the differences between groups over time and test for statistical significance in models with a significant overall group test (F-statistic) for the interaction of race/ethnicity and time.³⁰

RESULTS

Descriptive statistics are reported in Table 1. African Americans and Hispanics were underrepresented in both sectors, but particularly in psychiatric visits. Just under 12% of the adult population in the United States during the years studied was African American;³¹ however, only 6.4% of visits to psychiatrists and 10.6% of visits to primary care physicians were by African Americans. Similarly, between 10.7% and 12.5% of the adult population during the years studied was Hispanic,³¹ but only 6.1% of psychiatric visits and 8.7% of primary care visits were by Hispanics. Of visits to psychiatrists, 54% presented with depression/anxiety, 64% received a depression/anxiety diagnosis, 76% received counseling or a referral for counseling, 55% received antidepressants, and 89% received either counseling/referral for counseling or an antidepressant. Of visits to primary care physicians, slightly more than 5% presented with depression/anxiety, just under 5% received a diagnosis, almost 5% received counseling/referral for counseling, 7% received antidepressants, and 10% received either counseling/referral for counseling or an antidepressant.

Results of the logistic regression analyses are presented in Table 2 and described below. Graphical depictions of racial/ethnic disparities for the treatment outcomes (counseling/referral for counseling, antidepressant prescription, and any care) over time appear in Figures 1–3, based on the standardized predictions generated from the multivariate logistic regression models.

Diagnosis in Psychiatry

In the model predicting depression or anxiety diagnosis (Table 2), visits by African Americans had significantly lower odds of resulting in a diagnosis of depression/anxiety as compared with visits by whites in all time periods. Visits by Hispanics had significantly lower odds of resulting in a diagnosis of depression/anxiety as compared with visits by whites in 1995–1996, but did not differ in later time periods. The overall effect of the interaction of race/ethnicity by time period was statistically significant. Significance tests comparing differences between groups over time revealed that the gap in psychiatry between Hispanics and whites narrowed somewhat between 1995–1996 and 1997–1999 ($t = 2.59$, $P < 0.01$); beyond that point there are no differences.

Diagnosis in Primary Care

Visits by African Americans had significantly lower odds of resulting in a diagnosis of depression/anxiety as compared with visits by whites in primary care for all but the earliest time periods, even when controlling for diagnosis (Table 2). Visits by Hispanics in primary care had significantly lower odds of receiving a diagnosis than visits by whites in the later time periods (2000–2002, 2003–2005). The race/ethnicity by time interaction was not significant, suggesting that disparities in diagnosis are not improving in primary care settings.

Counseling/Referrals for Counseling in Psychiatry

In the model predicting counseling/referrals for counseling (Table 2), visits by African Americans and Hispanics in psychiatry had significantly lower odds of receiving counseling/referral for counseling than visits by whites in 1995–1996; however, this finding was not sustained across later time periods. The interaction between race/ethnicity and time period was statistically significant, and significance tests of the differences over time revealed that the gaps between visits by blacks ($t = 2.12$, $P < 0.05$) and Hispanics ($t = 2.24$, $P < 0.05$) versus whites decreased between 1995–1996 and 1997–1999, with no further disparities beyond that time period. These results are depicted in Figure 1.

Counseling/Referrals for Counseling in Primary Care

For primary care, visits by African Americans in 1997–1999 had significantly lower odds than whites of receiving counseling or a referral (Table 2). Standardized predictions are presented in Figure 1.

Antidepressant Prescriptions in Psychiatry

We found no significant differences for visits by African Americans or Hispanics compared with whites in antidepressant prescriptions in psychiatry (Table 1). Standardized predictions are presented in Figure 2.

Antidepressant Prescriptions in Primary Care

With the exception of Hispanics in 1995–1996 and African Americans in 2003–2005, results in Table 2 demonstrate that visits to primary care physicians by African Americans and Hispanics had significantly lower odds (compared with visits by whites) of receiving an antidepressant prescription for each time period. Interaction terms between race/ethnicity and time were not statistically significant, demonstrating no changes in the disparities over time (Fig. 2).

Any Care in Psychiatry

Visits by African Americans and Hispanics in 1995–1996 had significantly lower odds than those by whites of receiving any care (Table 2). The interaction of race/ethnicity and time was statistically significant. Tests comparing differences between groups over time revealed that the gap in psychiatry between visits by blacks ($t = 2.49$, $P < 0.05$) and Hispanics ($t = 2.67$, $P < 0.01$) versus whites narrowed somewhat between 1995–1996 and 1997–1999. Finally, Figure 3 demonstrates that African Americans and Hispanics experienced greater gains in care (as compared with whites), nearly closing the gap among the groups for 1997–1999 and 2003–2005.

Any Care in Primary Care

In primary care, visits by African Americans had significantly lower odds than whites of receiving any care in all time periods. The same trend was apparent for visits by Hispanics (vs. whites), but was statistically significant only for 2000–2002 and 2003–2005. The interaction of race/ethnicity and time was not statistically significant (Fig. 3) showing that disparities in any care for African Americans and Hispanics did not improve in primary care across this 10-year period.

Sensitivity Analyses

We conducted a series of sensitivity analyses to determine whether the disparities we found could be explained by the inclusion of anxiolytics and medications used for other purposes in the indicator for antidepressant medication. Although antidepressants are currently considered first-line treatment for anxiety, anxiolytics (including benzodiazepines and buspirone) may also be prescribed. Likewise, bupropion and amitriptyline are often used for smoking cessation and pain. Thus, we tested alternative models for outcomes by adding anxiolytic prescriptions to the antidepressant prescription outcomes and taking out bupropion and amitriptyline. The results were not substantively different from the outcomes presented here.

In addition, diagnosis of depression and anxiety by a physician is an imperfect measure of health care need, as it may reflect the differential recognition of depression/anxiety conditional on patient race/ethnicity that the IOM definition seeks to identify. The same criticism can be made of the Charlson-Deyo index that we used to control for comorbid health need. Thus, using these measures of need in the model may result in underestimation of the true disparity in treatment. We conducted analyses to examine whether our results were sensitive to the inclusion of these predictors by recalculating the models without adjusting for either variable. With the exception of 1 model, outcomes were very similar to those presented above. In psychiatry, the unadjusted model for antidepressant prescriptions revealed an additional significant disparity for blacks in 1995–1996.

Furthermore, we conducted sensitivity analysis to examine whether our results could be explained by some of the known limitations of the NAMCS data. First, as noted above, the number of prescription fields increased from 6 to 8 beginning in 2003. We constructed new outcome variables containing only the first 6 prescription fields for all years and recalculated models for antidepressant prescriptions and any care. The results for these models were almost identical to the models presented here.

Second, NAMCS data are for visits, not patients, and consequently the disparities we found might be explained by whites making more visits than blacks and Hispanics, and thus being more likely to be diagnosed and treated for depression. Beginning in 2001, information was collected on how many visits within the past year the patient had made to the physician. We used this item to construct a weight for making patient-level estimates from visit-level data,

as described by Burt and Hing.³² Using this weight, we re-estimated models for our outcomes using only data from 2001 to 2005. Again, there were no differences in disparities noted from our previously reported analyses, with the exception that in psychiatry in 2003–2005, blacks had lower odds of receiving care than whites, a disparity not previously detected.

In addition to these sensitivity analyses, we tested 2 alternative explanations for the persistent disparities noted above. First, we examined whether insurance status accounted for the disparities we found. A proxy variable for insurance type was derived from expected source of payment with the following categories: private, Medicare, Medicaid or worker's compensation, self-pay or charity care (ie, no insurance), and unknown. Second, we examined whether competing demands for time with potentially more medically ill nonwhite patients might account for disparities. We created 2 proxy variables for competing demands by summing number of reasons for visit and number of medications prescribed at the visit. Both the insurance and competing demands variables were statistically significant in all models except for predicting antidepressant prescriptions in primary care. However, the disparities findings noted above did not change substantively when these variables were included in the model. In fact, disparities in antidepressant prescriptions in psychiatry for African American visits in 1995–1996 became newly significant, indicating an additional area of disparities when these variables were included.

Because African Americans and Hispanics are particularly underrepresented in psychiatry, one explanation for disparities in depression care would be that the few minority patients presenting to psychiatry have more severe psychotic disorders instead of depression. We included an indicator for psychotic symptoms as the reason for visit in the models predicting depression/anxiety treatment in psychiatry. In these analyses, the overall interaction effect became significant, indicating that when psychotic disorders are controlled for, disparities in diagnoses decrease over time.

CONCLUSIONS

Our results demonstrate the importance of separately examining disparities in mental health care for primary care and psychiatry. Some recent studies that report decreasing racial/ethnic disparities in treatment^{10,11} controlled for socio-demographic differences, and may have failed to note disparities mediated by the generally lower socioeconomic status of minorities in the United States. Other studies show disparities for Hispanics persist.⁶ Our study extends this finding by including African Americans and isolating the disparities in primary health care settings.

In these analyses of 10-year trends for disparities in treatment of common mental disorders, counseling/referrals for counseling, antidepressant medications, and any care vastly improved or were eliminated over time in psychiatric visits. African Americans remain less likely to be diagnosed as depressed during psychiatric visits. This disparity seems to be partially mediated by psychotic symptoms. Substantial evidence exists to suggest that clinicians over-diagnose schizophrenia and under-diagnose mood disorders in African Americans,^{33,34} but recent evidence also suggests that African Americans might have higher rates of schizophrenia than do whites.^{33,35} Overall, few disparities in treatment of common mental disorders seem to occur in psychiatric visits when minorities get to this specialty care.

A very different picture emerges in primary care. Continued disparities in diagnoses, counseling/referrals for counseling, antidepressant medication, and any care are found in primary care visits. Because both African Americans and Hispanics are underrepresented in

office-based visits, disparities are likely to be even more pronounced at the community level. These disparities exist even controlling for physician diagnosis of depression. Nonwhite patients may be less likely to want active treatment for mental health disorders.^{36–38} Nonetheless, health care professionals need to address educational, cultural, and linguistic barriers to overcome these persistent disparities.³⁷ Quality improvement interventions for detecting, referring, and/or treating depressed patients, particularly those targeting nonwhite primary care patients, could improve appropriate depression care for African Americans and Hispanics.³⁹

Although NAMCS data are particularly useful for examining disparities in recognition, diagnosis, and treatment of disorders, several limitations should also be noted. In particular, no independent assessment of health status is available. Other limitations include measures based on visits rather than patients, the number of diagnoses is limited to 3 and are specific to that visit, the number of medications recorded increased from 6 to 8 in 2003 and do not reflect medications received at other visits, and the items to record counseling were not consistent across the years used here. Our sensitivity analyses suggest that these limitations did not affect our outcomes substantially. In fact, our sensitivity analyses to account for some of these limitations found increased evidence of disparities.

A serious limitation affecting the analyses presented here is that physicians (or office staff) determined patient race and ethnicity, and the reliability of these items has not been determined. In addition, the results for 1995–1996 for African Americans and Hispanics, particularly in psychiatry visits, may be less reliable because of small sample sizes; NAMCS documentation recommends combining 3 years to calculate estimates for racial/ethnic groups. NAMCS does not include US Veterans Administration or the US Armed Forces visits. Despite these limitations, this study provides a comprehensive evaluation of disparities in mental health care for common depressive and anxiety disorders across both primary care and psychiatric settings. We find persistent disparities, with fewer visits by African American and Latino patients in primary care resulting in care for depression over time than do similar visits by whites. Clearly, developing and disseminating interventions to remedy these disparities is important given the burden of disability associated with persistent, untreated depression and anxiety.

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FIGURE 1.
Standardized predictions for receiving counseling or a referral for counseling by race/ethnicity for psychiatric and primary care specialties.

FIGURE 2.
Standardized predictions for antidepressant prescription by race/ethnicity for psychiatric and primary care specialties.

FIGURE 3. Standardized predictions for providing counseling/referral for counseling and/or antidepressant prescription by race/ethnicity for psychiatric and primary care specialties.

TABLE 1

Characteristics of Office-Based Visits by Specialty, NAMCS 1995–2003, n = 96,075

	Psychiatric Specialties (n 14,661)		Primary Care Specialties (n 81,414)	
	% or Mean	Standard Error	% or Mean	Standard Error
Race/Ethnicity ($F_{2, 2118} = 15.857, P < 0.0001$)				
White	87.50	1.08	80.68	0.81
Black	6.41	0.72	10.60	0.60
Hispanic	6.09	0.81	8.72	0.73
Age ($F_{1, 2150} = 173.69, P < 0.0001$)	45.52 (yrs)	0.27 (yrs)	50.48 (yrs)	0.26 (yrs)
Female ($F_{1, 2118} = 39.810, P < 0.0001$)	59.82	0.90	66.47	0.43
Time period ($F_{3, 2118} = 368, P = 0.7763$)				
1995–1996	15.96	2.01	15.33	1.22
1997–1999	25.53	1.93	26.44	1.36
2000–2002	27.09	1.80	28.49	1.56
2003–2005	31.41	2.51	29.74	2.33
Charlson comorbidity index ($F_{1, 2150} = 842.38, P < 0.0001$)	0.02	0.002	0.17	0.004
Diagnosis of depression/anxiety ($F_{1, 2118} = 400.219, P < 0.0001$)	63.75	1.45	4.86	0.14
Referral for/provided counseling ($F_{1, 2118} = 394.516, P < 0.0001$)	76.38	1.98	4.75	0.20
Antidepressant prescription ($F_{1, 2118} = 319.150, P < 0.0001$)	55.35	1.38	7.03	0.19
Referral and/or antidepressant ($F_{1, 2118} = 430.6068, P < 0.0001$)	88.72	1.67	10.23	0.26

F-statistics and *P*-values test for significant differences between psychiatry and primary care specialties.

TABLE 2

Odds Ratios by Race/Ethnicity by Year for Reason for Visit, Diagnoses, and Receiving Care, NAMCS 1995–2005

	Psychiatry			Primary Care		
	Black vs. White	Hispanic vs. White	Difference Across Race/Ethnicity F (P)	Black vs. White	Hispanic vs. White	Difference Across Race/Ethnicity F (P)
Depression/anxiety diagnosis						
1995–1996	0.31 (0.15–0.64) [†]	0.43 (0.28–0.66) [‡]	10.38 (<0001)	0.75 (0.51–1.09)	0.87 (0.44–1.74)	1.18 (0.3067)
1997–1999	0.60 (0.39–0.93) [*]	0.90 (0.64–1.28)	2.57 (0.0763)	0.56 (0.40–0.78) [‡]	0.78 (0.49–1.24)	6.25 (0.0019)
2000–2002	0.52 (0.31–0.88) [*]	1.20 (0.75–1.92)	3.22 (0.0401)	0.56 (0.39–0.8) [†]	0.44 (0.31–0.63) [‡]	12.69 (<.0001)
2003–2005	0.46 (0.33–0.64) [‡]	1.00 (0.67–1.50)	10.9 (<.0001)	0.65 (0.48–0.89) [†]	0.71 (0.51–0.99) [*]	4.99 (0.0068)
Interaction effect	F = 2.13, P = 0.0467			F = 1.22, P = 0.2945		
Counseling/referral for counseling						
1995–1996	0.40 (0.19–0.85) [*]	0.26 (0.09–0.76) [*]	5.47 (0.0043)	0.81 (0.52–1.25)	1.24 (0.52–2.95)	0.56 (0.5722)
1997–1999	1.12 (0.62–2.02)	0.99 (0.62–1.57)	0.09 (0.9181)	0.59 (0.41–0.84) [†]	1.19 (0.63–2.23)	4.45 (0.0117)
2000–2002	0.59 (0.22–1.62)	1.24 (0.53–2.89)	0.75 (0.4745)	0.93 (0.63–1.36)	0.99 (0.56–1.77)	0.07 (0.9321)
2003–2005	1.42 (0.81–2.47)	0.72 (0.39–1.31)	1.64 (0.1937)	0.96 (0.68–1.36)	0.75 (0.49–1.16)	0.82 (0.4407)
Interaction effect	F = 2.50, P = 0.0206			F = 1.08, P = 0.3744		
Antidepressant prescribed						
1995–1996	0.65 (0.35–1.21)	1.09 (0.51–2.31)	1.04 (0.3547)	0.75 (0.54–1.03)	0.62 (0.38–0.99) [*]	3.21 (0.0403)
1997–1999	0.85 (0.59–1.21)	1.18 (0.78–1.79)	1.18 (0.3063)	0.67 (0.49–0.93) [*]	0.68 (0.47–0.98) [*]	4.69 (0.0092)
2000–2002	1.23 (0.91–1.67)	0.98 (0.61–1.57)	0.96 (0.3834)	0.60 (0.44–0.82) [†]	0.46 (0.32–0.66) [‡]	14.20 (<.0001)
2003–2005	0.72 (0.49–1.06)	0.98 (0.61–1.57)	1.51 (0.2220)	0.53 (0.37–0.76) [‡]	0.72 (0.49–1.06)	6.99 (0.0009)
Interaction effect	F = 1.30, P = 0.2529			F = 0.95, P = 0.4562		
Antidepressant and/or counseling/referral for counseling						
1995–1996	0.31 (0.14–0.73) [†]	0.37 (0.21–0.67) [‡]	7.88 (0.0004)	0.74 (0.57–0.97) [*]	0.82 (0.46–1.46)	2.61 (0.0737)
1997–1999	1.23 (0.62–2.44)	1.15 (0.64–2.08)	0.21 (0.8106)	0.59 (0.46–0.77) [‡]	0.88 (0.50–1.54)	8.00 (0.0003)
2000–2002	0.70 (0.32–1.52)	0.87 (0.25–3.03)	0.40 (0.6687)	0.72 (0.55–0.94) [*]	0.63 (0.43–0.92) [*]	5.97 (0.0026)
2003–2005	1.00 (0.55–1.80)	1.03 (0.61–1.76)	0.01 (0.9923)	0.63 (0.45–0.88) [†]	0.71 (0.52–0.97) [*]	5.34 (0.0048)
Interaction effect	F = 2.33, P = 0.0303			F = 0.48, P = 0.8271		

All analyses control for age, gender, and Charlson-Deyo comorbidity index.

^{*} P < 0.05.

[†] P < 0.001.

[‡] P < 0.0001.