

Intersection of Race-Ethnicity and Gender in Depression Care: Screening, Access, and Minimally Adequate Treatment

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Objectives: This study examined the interaction of race-ethnicity and gender in depression screening, receipt of any mental health care, and receipt of adequate care.

Methods: Data from electronic health records (2010–2012) of adult primary care patients from a New England urban health care system were used (N=65,079). Multivariate logit regression models were estimated to assess associations between race-ethnicity, gender, and other covariates and depression screening, any depression care among those with a positive screen, and adequate depression care. To measure disparities in utilization, we controlled for need variables but not for non-need variables, including insurance, marital status, and socioeconomic status.

Results: Among males and females, blacks and Asians were less likely and Latinos were more likely to be screened for depression compared with whites. Among those with

moderate or severe depression, black males and females, Latino males, and Asian males and females were less likely than whites to receive any mental health care. The disparity in screening between blacks and whites was greater among females compared with males. The disparity between Latinos and whites in receipt of any mental health care and of adequate care was greater among males than females.

Conclusions: This approach underscored the importance of identifying disparities at each step of depression care by both race-ethnicity and gender. Targeting certain groups in specific stages of care, for example, screening of black females or providing any mental health care and adequate care for Latino males, would be more effective than a blanket approach to disparities reduction.

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Although extensive research has documented racial-ethnic disparities in mental health care in the United States (1–7), little attention has been paid to the interactive effect of race-ethnicity and gender on these disparities. Disparities in mental health care among racial-ethnic minority groups remain a chronic problem (3,7,8), with individuals from minority groups less likely to undergo screening for mental disorders (9–11), access mental health care, or receive adequate health care compared with their non-Latino white counterparts (6,7,12,13). Recent studies have found that racial-ethnic disparities in access to mental health care have increased (11,12,14), whereas racial-ethnic disparities in the receipt of adequate mental health care have not significantly changed over time (12).

Studies of gender differences in receipt of mental health care have found that men were less likely than women to be screened for mental health problems, to access mental health care (15–18), and to receive adequate levels of mental health care (19). Studies that focused on the effect of both race-ethnicity and gender on mental health care have found racial

and gender-related disparities in the detection of mental health problems in a primary care setting (20) and in the use of specialty outpatient mental health care (21). The relative paucity of research on how the interaction of race-ethnicity and gender relates to mental health care access and quality warrants further investigation.

Examining the intersection of race-ethnicity and gender in health care has gained attention in health care disparities research. Sen and colleagues (22) contended that examining these intersections in health care has important implications for policy and program development because such studies provide “precise insight” into identifying “whom to focus on, whom to protect, what exactly to promote and why.” In mental health, the ability to precisely identify specific groups in need of care is critical because state and local municipalities and health care organizations constantly operate under tight budget constraints regarding allocation of their limited resources (23).

Our study examined the association of race-ethnicity and gender with depression care in a major safety-net health

care system in the northeastern United States. The focus on this type of health care setting was relevant because a majority of individuals from racial-ethnic minority groups (88%) reside in urban areas (24) and receive their care from safety-net systems. It also responded to a need to analyze local health care systems to identify specific groups in critical need of mental health care. We examined the following three stages of mental health care: depression screening, receipt of any mental health care among those screened as having probable depression, and receipt of minimally adequate mental health care among those who received any mental health services.

METHODS

Data

We used data from electronic health records (EHRs) of patients age 18 and older in an urban, public, nonprofit health care system in New England in 2010–2012. The health care system includes three hospitals and 15 community health centers. During the time period of study, the health care system underwent transitions that may have been relevant to determining rates of disparities in screening, access, and treatment. The research period coincided with the initial phase of an effort to integrate mental health care into the primary care department of one of the community mental health centers, a small reduction in the percentage of specialty mental health providers, and the completion of initiatives to improve depression screening and collection of race-ethnicity data.

The health care system delivers mental health care in primary care clinics, adult inpatient psychiatric facilities, and community-based and hospital-based specialty outpatient settings. It serves a diverse patient population in terms of race-ethnicity, socioeconomic status, and insurance coverage. We analyzed EHRs of patients deemed eligible to receive the Patient Health Questionnaire–9 (PHQ-9) (25). The health care system's policy is to administer the PHQ-9 to all patients receiving an initial visit or a yearly checkup at a primary care clinic, with the exception of patients with terminal illnesses. Using these criteria, we selected for our sample new primary care patients who received initial preventive medical exams and current primary care patients who received medical exams and who had received a PHQ-9 in the past year, and we excluded individuals with terminal illnesses. The total sample included 49,287 patients enrolled between 2010 and 2012, representing a total of 65,097 patient-years. This study protocol was approved by the Cambridge Health Alliance Institutional Review Board.

Dependent variables. Our three outcome variables measured receipt of a PHQ-9 depression screen, any depression treatment among patients with moderate to severe depressive symptoms (PHQ-9 ≥ 10), and minimally adequate depression treatment among patients who received any mental health care.

Screening for depression was defined as completion of the PHQ-9, with scores of 1–9 indicating minimal or mild depression; 10–14, moderate depression; 15–19, moderately severe depression; and 20–27, severe depression (25). A score of ≥ 10 on the PHQ-9 has been shown to have high sensitivity (88%) and specificity (88%) for identifying depressive disorder (25).

Any depression treatment was assessed by patient-year among patients scoring ≥ 10 on the PHQ-9 ($N=5,634$ patient-years). Any depression treatment was defined as at least one visit with a primary care provider or mental health specialist (psychiatrist, psychologist, or social worker) within the health care system for a primary diagnosis of major depressive disorder or other depressive disorder in the same year as the positive PHQ-9 score or a recorded antidepressant prescription that was active, according to the physician, in the same year as the positive PHQ-9 score.

Minimally adequate care was defined either as four or more depression treatment visits with a primary care provider, psychiatrist, or other mental health care provider and at least one active antidepressant prescription or as eight or more depression treatment visits with a primary care provider, psychiatrist, or other mental health care provider. This definition of minimum thresholds for guideline-concordant treatment draws on evidence-based treatment guidelines, has been used elsewhere (26,27), and is consistent with recommendations from the American Psychiatric Association (28).

Gender and race-ethnicity. Self-reported race and ethnicity were measured by using U.S. Census categories (non-Latino white, non-Latino black, Latino, and Asian).

Need and non-need variables. Consistent with prior literature (5,29–31), we used the Institute of Medicine (IOM) definition of disparity (2). This definition is based on a conceptual framework that values the fair judgment of a health care system (29) and defines health care disparities as all racial-ethnic differences in health care quality that are not due to clinical appropriateness and need and patient preferences (2). Prior research has operationalized this definition by adjusting for need variables (health status, age, and illness severity). Patient preference data were not available in the EHR database, so we did not adjust for them.

In contrast, differences due to the operation of health care systems and provider discrimination should be considered as part of the disparity, and adjustment should not be made for them in disparities estimation. Insurance coverage and socioeconomic status have been operationalized as factors related to the operation of health care systems. For example, if Medicaid-enrolled residents receive poorer mental health care services and racial-ethnic minority residents are disproportionately enrolled in Medicaid, then Medicaid enrollment represents a system-level variable that affects disparities through operation of the health care system. The independent effect of race and ethnicity (operationalized by

the race-ethnicity coefficient) is commonly used as a proxy of discrimination.

As prior studies have done (5,6), we split covariates into two categories: need variables that are adjusted for and non-need variables that are not adjusted for in disparity predictions. Need variables were age and, in the analysis of any mental health treatment and adequate mental health treatment, PHQ-9 score (score ranges between 10 and 27). The system-level variables were insurance status (Medicaid, Medicare, Commonwealth Care, other state-run non-Medicaid public health insurance plans, and private insurance), and marital status (married or not married). For socioeconomic status (SES) variables, we used zip code-level variables by merging patients' zip codes with the following zip code-level SES variables from the American Community Survey Five-Year Estimates (2007–2011): percentage of female-headed households, percentage of foreign-born residents, percentage living in poverty, and percentage with less than a high school education. These variables are known to be important predictors of mental health care utilization (32).

Statistical Analysis

We describe our sample by presenting unadjusted rates of both need and non-need covariates by race-ethnicity and gender for three populations corresponding to analyses of the three dependent variables; all eligible patients were considered in the assessment of screening disparities; patients who screened positive for moderate to severe depression were considered in the assessment of access to depression care; and only patients who screened positive for moderate to severe depression and who received any depression treatment were considered in the analysis of minimally adequate depression care.

To describe associations between the dependent variables and the covariates, we estimated multivariate logit regression models. The fit of these logistic models was verified using Pregibon's link test (33) and the Hosmer-Lemeshow goodness-of-fit test (34,35). Variable coefficients represent the independent effect of the covariate after adjustment for both need and non-need variables. We do not consider the significance of the race-ethnicity and gender coefficient estimates to be a test of the significance of the disparity. Disparity predictions that are concordant with the IOM definition of disparity adjust for need variables but not for non-need characteristics.

To evaluate disparities, we used the rank-and-replace method, using a four-step process to create a counterfactual population of individuals from racial-ethnic minority groups with an age distribution (and for the treatment and adequacy analyses, a PHQ-9 score distribution) equal to that of whites, while allowing non-need covariates to enter into the disparities calculation. First, the logit regression model described above was estimated. Second, multivariate indicators of age (and severity) were summarized with a univariate need-based linear predictor (3,36) defined as the sum of the terms (coefficient \times covariate) of the fitted model corresponding to need variables. This need predictor was used to rank

individuals within their race-ethnicity group. Need values of each individual in each minority group were then replaced by those of the equivalently ranked white individual. Thus a black individual with need variable values in the 50th percentile for blacks was reassigned the need variable values of white individuals whose values occupied the same percentile for whites. Third, predicted success rates for each female and male in a racial-ethnic minority group were then calculated using coefficients from the original regression model and adjusted need covariate values. Fourth, means of these predictions were then compared across racial-ethnic and gender groups to estimate racial-ethnic disparities among males and females and gender disparities within racial-ethnic groups and to assess whether racial-ethnic disparities varied by gender. Standard errors were derived using a bootstrap procedure (37). Differences in dependent variables by gender or race-ethnicity were considered significant if 95% bootstrap intervals did not include zero.

RESULTS

We observed differences in the sociodemographic and clinical characteristics of primary care patients eligible for PHQ-9 depressive symptom screening across race-ethnicity and gender groups (Table 1).

Negative correlates of screening were older age, Medicare insurance, living in areas with a greater percentage of residents who did not complete high school, and living in areas with greater percentages of residents living in poverty. Positive predictors of screening were Medicaid or other public insurance and living in areas with greater percentages of female-headed households and foreign-born residents (Table 2).

Females and individuals with higher scores on the PHQ-9 were more likely to receive any mental health care. Persons who lived in neighborhoods with a higher percentage of female-headed households were less likely to receive any mental health care (Table 2).

Among individuals who screened positive for moderate to severe depressive symptoms and who received any mental health care, higher PHQ-9 scores, age between 35 and 74 (compared with 18 to 24), Medicaid or other public insurance (compared with private insurance), living in areas with a greater percentage of residents who did not finish high school, and living in areas with a high percentage of foreign-born individuals were positively associated with receiving adequate care (Table 2).

Among those who received any depression treatment, approximately 26.4% reported receiving adequate care. After adjustment for age, the analyses indicated that black and Asian males and females were less likely and Latino males and females were more likely to be screened for depression than their non-Latino white counterparts (Table 3). Within racial-ethnic groups except blacks, females were more likely than males to receive screening. The disparity in screening between blacks and whites was significantly less among males (54.6%–52.7%=1.9%) than among females (58.6%–52.6%=6.0%).

TABLE 1. Characteristics of 49,287 primary care patients who were eligible for depression screening, by race-ethnicity^a

Characteristic	White		Black		Latino		Asian	
	Male	Female	Male	Female	Male	Female	Male	Female
PHQ-9 (M±SD score) ^b	4.35±5.5	5.03±5.8	3.91±5.0*	4.90±5.5	4.61±5.4*	5.80±6.1*	2.99±4.3*	3.50±4.7*
Age								
18–24	11.6	15.0	20.9*	18.8*	15.0*	12.7*	13.9*	13.6
25–34	27.9	32.2	20.1*	21.5*	23.1*	23.0*	27.9	33.3
35–44	19.2	16.9	19.4	20.0*	24.3*	25.5*	23.6*	19.5*
45–54	19.3	16.0	19.4	17.4*	20.9	21.6*	15.6*	14.8
55–64	16.0	13.7	12.5*	12.4	11.5*	10.9	11.4*	11.2*
65–74	4.4	4.3	4.9	5.8	3.7	4.7	5.4	6.3
≥75	1.6	1.9	2.7	4.1*	1.4	1.6	2.2	1.4
Marital status								
Married	35.3	32.0	35.5	28.5	44.1*	40.2*	60.2*	59.4*
Not married	64.7	68.0	64.5	71.5	55.9	59.8	39.8	40.6
Insurance								
Private	58.3	56.4	50.1*	40.8*	56.9	45.1*	58.1	54.1
Medicaid or other public	29.2	32.0	38.5*	49.2*	36.3	48.7*	37.2*	41.0*
Medicare	10.5	9.5	7.4*	6.8*	4.4	3.9*	2.9*	2.8*
Uninsured	2.1	2.1	4.1*	3.2	2.4	2.3	1.8	2.2
Socioeconomic status of zip code								
Female-headed households	11.5	11.4	13.2*	13.3*	14.4*	13.9*	11.3	11.4
Less than high school graduates	11.9	11.7	13.1*	13.1	16.9*	16.1*	11.1	11.2
Foreign-born residents	26.8	26.4	29.7*	29.8*	31.7*	30.9*	28.0	27.9
Residents with income below federal poverty level	13.1	13.0	14.0	13.8	14.8*	14.3*	12.9	13.1

^a Data are reported as percentage of patient-years (N=65,097).

^b The Patient Health Questionnaire–9 (PHQ-9) was used to screen for depression. Possible scores range from 0 to 27, with higher scores indicating more severe symptoms.

* $p < .05$, compared with white counterpart

Among individuals with moderate to severe depressive symptoms, black and Asian males and females were less likely and Latino females were more likely to receive any mental health care compared with their white counterparts. Among blacks and Latinos, females were more likely than males to receive depression care. Among the females, there were no disparities in receipt of treatment between white and Latino females (57.6%–60.2%=–2.6%); however, the disparity in receipt of treatment was significantly greater between Latino and white males (53.6%–48.1%=5.5%) than between white and Latino females.

Among persons who had any mental health care and moderate to severe depressive symptoms, the disparity between Latinos and whites in receipt of adequate care was greater for males (27.9%–22.5%=5.4%) than for females, where there was no disparity between Latinos and whites (24.5%–26.7%=–2.2%) ($p=.06$). [Figures presenting data from these analyses are included in an online data supplement to this article.]

DISCUSSION

This study improved upon previous studies of mental health care disparities by modifying the methodology of health services research in three ways: by estimating mental health care disparities by gender and race rather than examining mental health utilization by only one segment of the population; by

examining the entire spectrum of depression care patterns, including screening, access to, and adequacy of care; and by using an urban safety-net sample, given that racial-ethnic minority populations primarily reside in urban areas.

Our research adds to evidence that women from racial-ethnic minority groups are less likely than white women to access care, even when available, because of challenges in finding child care, getting transportation, and dealing with other role responsibilities (38). We found similar rates of utilization of any mental health care among black and Asian women, but not Latinas. Rates of any mental health care utilization among Latina and white women were equal.

Our methodology of examining different stages of depression treatment in this health care system underscored evidence of a double disadvantage for Asian and blacks, particularly black females. These groups not only were less likely to be screened for depression but also were less likely to receive any depression care. This disparity may be due to a lack of providers of the same racial-ethnic background with whom they can feel trust and not feel stigmatized. The wide variability in racial-ethnic disparities by gender and stage of treatment suggests the importance of monitoring interactions between race-ethnicity and gender in screening, access, and quality of care in future disparities assessments.

Consistent with other studies (15,16,39), our study revealed that among whites, Latinos, and Asians, females were more likely than males to be screened for depression and seen for

TABLE 2. Association between patient characteristics and depression screening, receipt of any mental health care, and receipt of minimally adequate care^a

Characteristic	Depression screening (N=65,079)			Any mental health care (N=5,634) ^b			Minimally adequate care (N=3,067) ^c		
	Coeff.	SE	p	Coeff.	SE	p	Coeff.	SE	p
Race (reference: white)									
Black	-.26	.02	<.01	-.35	.83	<.01	.13	.13	.32
Latino	.15	.02	<.01	.00	.07	.96	.05	.10	.62
Asian	-.17	.03	<.01	-.58	.15	<.01	.15	.25	.56
Female gender	.14	.02	<.01	.29	.06	<.01	-.06	.10	.53
Interaction term									
Black female	-.16	.04	<.01	.13	.17	.46	-.25	.27	.37
Latino female	.13	.04	<.01	.26	.14	.07	.33	.22	.14
Asian female	-.03	.06	.58	.04	.30	.91	-.10	.51	.84
PHQ-9 score ≥10 (reference: <10)				.13	.01	<.01	.07	.01	<.01
Age (reference: 18–24)									
25–34	-.01	.03	.61	.02	.09	.79	.16	.16	.32
35–44	-.17	.03	<.01	.14	.10	.15	.42	.16	.01
45–54	-.41	.03	<.01	.10	.10	.30	.51	.16	<.01
55–64	-.52	.03	<.01	.05	.11	.67	.54	.17	<.01
65–74	-.67	.05	<.01	.09	.18	.60	.74	.27	.01
≥75	-.92	.07	<.01	-.49	.29	.09	.03	.53	.96
Married (reference: not married)	-.01	.02	.61	-.10	.06	.11	-.71	.10	.47
Insurance (reference: private)									
Medicaid or other public insurance	.10	.02	<.01	-.01	.06	.82	.26	.10	.01
Medicare	-.14	.04	<.01	-.18	.11	.09	.29	.16	.07
Uninsured	-.07	.05	.16	.10	.19	.59	-.12	.33	.71
Socioeconomic status of zip code (%)									
Female-headed households	.012	.003	<.001	-.020	.010	.046	-.010	.015	.512
Less than high school graduates	-.017	.002	<.001	-.002	.008	.750	.025	.011	.023
Foreign-born residents	.009	.001	<.001	.005	.005	.304	.016	.007	.020
Residents with incomes below federal poverty level	-.015	.002	<.001	.009	.007	.198	.012	.011	.272
Constant	1.41	.25	<.01	-1.74	.17	<.01	-4.88	1.24	<.01

^a Results are from multivariate regression analyses of 65,079 patient-years. The estimates for race and gender were adjusted for all other characteristics. Race and gender main effects have been adjusted by using the centering method so that they are directly interpretable in the presence of the interaction term.

^b Includes patients with scores ≥10 (moderate to severe depression) on the Patient Health Questionnaire (PHQ-9)

^c Includes patients with scores ≥10 (moderate to severe depression) on the PHQ-9 who received any mental health care

depression care once depression was detected. However, differences between males and females were not significant for receipt of minimally adequate care. Previous research suggests that antidepressants may be less effective for women. This variability could decrease treatment retention and the likelihood of having active antidepressant prescriptions among females even though they are more likely to receive screening and to enter into care (40). Better understanding of gender differences in depression treatment is needed.

Racial-ethnic groups had different patterns of screening, treatment, and receipt of adequate care. In particular, among Latino men and women, differences were found in these patterns at each stage of depression care. Latino men and women received the highest rates of screening for their gender, surpassing even whites. This outcome may reflect the successes of a 2007–2009 intervention to improve screening and treatment access for non-English speakers at some clinics that predominantly provide services to females. However, it is critical to note that higher rates of screening among Latinos did not translate to higher rates of any use of mental health care or of

adequate mental health care. Rates of use of any mental health services were not significantly higher among Latina versus white women, and Latinas had similar rates of receipt of adequate mental health care compared with women in all other racial-ethnic groups. Furthermore, Latino men, despite having the highest rates of screening among males, were less likely to receive any mental health care compared with whites, and the proportion who received adequate care was lowest among all male groups. These findings indicate that focused efforts to improve language capacity for depression screening in this health care system did not sufficiently raise levels of mental health access or minimal adequacy of care for Latinos. This pattern was consistent with studies that show that early recognition of depression alone does not necessarily lead to positive depression outcomes (39,41–43).

Our data had limitations common to administrative data analyses. First, our data were limited by a lack of variables that are significant individual-level predictors of mental health care (income and education). Second, we were unable to track health care that patients received elsewhere; the

TABLE 3. Receipt of depression screening, any mental health care, and minimally adequate mental health care, by race-ethnicity and gender^a

Variable	Depression screening (N=65,079)				Any mental health care (N=5,634)				Minimally adequate care (N=3,067)			
	Male		Female		Male		Female		Male		Female	
Race-ethnicity	M	SE	M	SE	M	SE	M	SE	M	SE	M	SE
White	54.6	.4	58.6	.4	53.6	1.7	57.7	1.2	27.9	1.9	24.5	1.3
Black	52.7	.7	52.6	.7	43.1	2.5	51.0	2.0	35.8	5.5	26.1	2.5
Latino	60.5	.7	66.1	.5	48.1	2.2	60.2	1.3	22.5	2.8	26.7	1.5
Asian	51.5	1.0	54.5	.9	39.8	4.8	45.2	4.1	32.5	8.9	26.8	5.4
Difference between racial-ethnic groups												
Whites versus blacks	1.9*	.8	6.0*	.8	10.6*	3.0	6.6*	2.4	-7.9	5.9	-1.6	2.9
Whites versus Latinos	-5.9*	.8	-7.5*	.6	5.5*	2.8	-2.5	1.7	5.5	3.4	-2.2	2.0
Whites versus Asians	3.1*	1.1	4.1*	.0	13.8*	5.1	12.5*	4.3	-4.6	9.1	-2.3	5.6
Gender	M		SE		M		SE		M		SE	
Difference within racial-ethnic group ^d												
Whites		4.0*		.6		4.0		2.2		-3.4		2.4
Blacks		-.2*		.9		8.0*		3.4		-9.7		5.7
Latinos		5.7*		.8		12.0*		2.7		4.2		3.3
Asians		3.0*		1.2		5.4		5.6		5.8		10.6
Differences-in-differences ^e												
Whites versus blacks		4.2*		1.0		-3.93		.7		6.3		6.1
Whites versus Latinos		-1.7		1.0		-8.0*		3.5		-7.6*		4.2
Whites versus Asians		.9		1.4		-1.4		6.0		2.3		10.7

^a Data are reported as percentages of patient-years. Consistent with the Institute of Medicine definition of disparities, the analyses adjusted for age but not for marital status, insurance, and socioeconomic differences.

^b Includes patients with scores ≥ 10 (moderate to severe depression) on the Patient Health Questionnaire (PHQ-9)

^c Includes patients with scores ≥ 10 (moderate to severe depression) on the PHQ-9 who received any mental health care

^d Gender differences within each racial-ethnic group were calculated by subtracting the rate for males from the rate for females.

^e Differences-in-differences were calculated by subtracting the difference in rates for males and females for each racial-ethnic minority group from the difference for whites.

* $p < .05$

extent of care they sought outside of the network may have varied by gender and race-ethnicity, causing distorted estimates of disparities in service use and adequacy of care. Third, although the PHQ-9 demonstrates strong sensitivity and specificity for diagnoses of depression, individuals who screen positive may have less severe forms of depression. For these patients, watchful waiting or two or more visits without antidepressant prescription could be considered minimally adequate care. Sensitivity analyses using this lower threshold for minimally adequate care (available upon request) predicted difference-in-difference estimates that were similar in direction and magnitude. Fourth, data were limited to one health care system in the northeastern United States. Similar studies in other areas of the country are necessary to determine if similar results are found in other geographical locations.

CONCLUSIONS

Because of differences in methodology between our study and prior studies, our approach identified the degree of disparity by race-ethnicity and gender at each step of depression care. Efforts to provide culturally and linguistically appropriate outreach and screening in primary care settings are needed. Our data illustrate the need to improve the quality of mental health

treatment across racial-ethnic and gender groups, given that only one in four recipients of mental health treatment received minimally adequate care. A better understanding of these issues is necessary to prevent neglect of patients within the depression care system. Resources should be directed toward better follow-up for vulnerable groups so that the recognition of depression is directly linked to improved outcomes.

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REFERENCES

- Cooper-Patrick L, Gallo JJ, Gonzales JJ, et al: Race, gender, and partnership in the patient-physician relationship. *JAMA* 282:583-589, 1999
- Smedley B, Stith A, Nelson A: *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. Washington, DC, Institute of Medicine, National Academies Press, 2003

3. Cook BL, McGuire T, Miranda J: Measuring trends in mental health care disparities, 2000–2004. *Psychiatric Services* 58:1533–1540, 2007
4. Wells K, Klap R, Koike A, et al: Ethnic disparities in unmet need for alcoholism, drug abuse, and mental health care. *American Journal of Psychiatry* 158:2027–2032, 2001
5. McGuire TG, Alegria M, Cook BL, et al: Implementing the Institute of Medicine definition of disparities: an application to mental health care. *Health Services Research* 41:1979–2005, 2006
6. Lê Cook B, Barry CL, Busch SH: Racial/ethnic disparity trends in children's mental health care access and expenditures from 2002 to 2007. *Health Services Research* 48:129–149, 2013
7. Alegria M, Chatterji P, Wells K, et al: Disparity in depression treatment among racial and ethnic minority populations in the United States. *Psychiatric Services* 59:1264–1272, 2008
8. Cook BL, Zuvekas SH, Carson N, et al: Assessing racial/ethnic disparities in treatment across episodes of mental health care. *Health Services Research* 49:206–229, 2014
9. Gallo JJ, Bogner HR, Morales KH, et al: Patient ethnicity and the identification and active management of depression in late life. *Archives of Internal Medicine* 165:1962–1968, 2005
10. Lewis-Fernández R, Das AK, Alfonso C, et al: Depression in US Hispanics: diagnostic and management considerations in family practice. *Journal of the American Board of Family Practice* 18: 282–296, 2005
11. Stockdale SE, Lagomasino IT, Siddique J, et al: Racial and ethnic disparities in detection and treatment of depression and anxiety among psychiatric and primary health care visits, 1995–2005. *Medical Care* 46:668–677, 2008
12. Ault-Brutus AA: Changes in racial-ethnic disparities in use and adequacy of mental health care in the United States, 1990–2003. *Psychiatric Services* 63:531–540, 2012
13. Harris KM, Edlund MJ, Larson S: Racial and ethnic differences in the mental health problems and use of mental health care. *Medical Care* 43:775–784, 2005
14. Blanco C, Patel SR, Liu L, et al: National trends in ethnic disparities in mental health care. *Medical Care* 45:1012–1019, 2007
15. Bertakis KD, Helms LJ, Callahan EJ, et al: Patient gender differences in the diagnosis of depression in primary care. *Journal of Women's Health and Gender-Based Medicine* 10:689–698, 2001
16. Potts MK, Burnam MA, Wells KB, et al: Gender differences in depression detection: a comparison of clinician diagnosis and standardized assessment. *Psychological Assessment* 3:609–615, 1991
17. Williams JBW, Spitzer RL, Linzer M, et al: Gender differences in depression in primary care. *American Journal of Obstetrics and Gynecology* 173:654–659, 1995
18. Kessler RC, Demler O, Frank RG, et al: Prevalence and treatment of mental disorders, 1990 to 2003. *New England Journal of Medicine* 352:2515–2523, 2005
19. Young AS, Klap R, Sherbourne CD, et al: The quality of care for depressive and anxiety disorders in the United States. *Archives of General Psychiatry* 58:55–61, 2001
20. Borowsky SJ, Rubenstein LV, Meredith LS, et al: Who is at risk of nondetection of mental health problems in primary care? *Journal of General Internal Medicine* 15:381–388, 2000
21. Ojeda VD, McGuire TG: Gender and racial/ethnic differences in use of outpatient mental health and substance use services by depressed adults. *Psychiatric Quarterly* 77:211–222, 2006
22. Sen G, Iyer A, Mukherjee C: A methodology to analyse the intersections of social inequalities in health. *Journal of Human Development and Capabilities* 10:397–415, 2009
23. Mental Health, United States, 2004. DHHS pub no SMA-06-4195. Rockville, Md, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, 2006. Available at store.samhsa.gov/shin/content//SMA06-4195/SMA06-4195.pdf
24. Pollard KM, O'Hare WP: America's racial and ethnic minorities. *Population Bulletin*, Sept 1999. Available at www.prb.org/Source/54.3AmerRacialEthnicMinor.pdf
25. Kroenke K, Spitzer RL, Williams JBW: The PHQ-9: validity of a brief depression severity measure. *Journal of General Internal Medicine* 16:606–613, 2001
26. Wang PS, Demler O, Kessler RC: Adequacy of treatment for serious mental illness in the United States. *American Journal of Public Health* 92:92–98, 2002
27. Wang PS, Lane M, Olfson M, et al: Twelve-month use of mental health services in the United States: results from the National Comorbidity Survey Replication. *Archives of General Psychiatry* 62: 629–640, 2005
28. Practice Guideline for the Treatment of Patients With Major Depressive Disorder, 3rd ed. Arlington, Va, American Psychiatric Association, 2010
29. Cook BL, McGuire TG, Zaslavsky AM: Measuring racial/ethnic disparities in health care: methods and practical issues. *Health Services Research* 47:1232–1254, 2012
30. Duan N, Meng XL, Lin JY, et al: Disparities in defining disparities: statistical conceptual frameworks. *Statistics in Medicine* 27:3941–3956, 2008
31. Mahmoudi E, Jensen GA: Diverging racial and ethnic disparities in access to physician care: comparing 2000 and 2007. *Medical Care* 50:327–334, 2012
32. Carson N, Lê Cook B, Alegria M: Social determinants of mental health treatment among Haitian, African American, and white youth in community health centers. *Journal of Health Care for the Poor and Underserved* 21(suppl):32–48, 2010
33. Pregibon D: Goodness of link tests for generalized linear models. *Journal of the Royal Statistical Society, Series C, Applied Statistics* 29:15–24, 1980
34. Archer KJ, Lemeshow S, Hosmer DW: Goodness-of-fit tests for logistic regression models when data are collected using a complex sampling design. *Computational Statistics and Data Analysis* 51: 4450–4464, 2007
35. Hosmer DW, Jovanovic B, Lemeshow S: Best subsets logistic regression. *Biometrics* 45:1265–1270, 1989
36. Lê Cook B, McGuire TG, Zuvekas SH: Measuring trends in racial/ethnic health care disparities. *Medical Care Research and Review* 66:23–48, 2009
37. Efron B: Bootstrap methods: another look at the jackknife. *Annals of Statistics* 7:1–26, 1979
38. Miranda J, Chung JY, Green BL, et al: Treating depression in predominantly low-income young minority women: a randomized controlled trial. *JAMA* 290:57–65, 2003
39. Williams JW Jr, Mulrow CD, Kroenke K, et al: Case-finding for depression in primary care: a randomized trial. *American Journal of Medicine* 106:36–43, 1999
40. Keers R, Aitchison KJ: Gender differences in antidepressant drug response. *International Review of Psychiatry* 22:485–500, 2010
41. Callahan CM, Dittus RS, Tierney WM: Primary care physicians' medical decision making for late-life depression. *Journal of General Internal Medicine* 11:218–225, 1996
42. Dowrick C, Buchan I: Twelve month outcome of depression in general practice: does detection or disclosure make a difference? *British Medical Journal* 311:1274–1276, 1995
43. Simon GE, Fleck M, Lucas R, et al: Prevalence and predictors of depression treatment in an international primary care study. *American Journal of Psychiatry* 161:1626–1634, 2004