Ethnic Disparities in Unmet Need for Alcoholism, Drug Abuse, and Mental Health Care

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Objective: Recent policy has focused on documenting and reducing ethnic disparities in availability and quality of health care. The authors examined differences by ethnic status in unmet need for alcoholism, drug abuse, and mental health treatment.

Method: Data were from a follow-up survey of adult respondents to a 1996–1997 national survey. Non-Hispanic whites, African Americans, and Hispanics were compared in access to alcoholism and drug abuse treatment and mental health care (primary or specialty), unmet need for care, satisfaction with care, and use of active treatment for alcoholism, drug abuse, and mental health problems in the prior 12 months.

Results: A total of 31.9% of whites, 28.1% of African Americans, and 30.1% of Hispanics had some alcoholism, drug abuse, and mental health care, mostly in pri-

mary care. Among those with perceived need, compared to whites, African Americans were more likely to have no access to alcoholism, drug abuse, or mental health care (25.4% versus 12.5%), and Hispanics were more likely to have less care than needed or delayed care (22.7% versus 10.7%). Among those with need, whites were more likely than Hispanics or African Americans to be receiving active alcoholism, drug abuse, or mental health treatment (37.6% versus 22.4%–25.0%).

Conclusions: The authors document greater unmet need for alcoholism and drug abuse treatment and mental health care among African American and Hispanics relative to whites. New policies are needed to improve access to and quality of alcoholism, drug abuse, and mental health treatment across diverse populations.

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Reducing ethnic disparities in access to and quality of health care is a goal of recent federal initiatives (1–5). The Surgeon General's report on minority mental health (6) emphasized the overall high levels of unmet need for mental health care nationally across diverse subpopulations. While major psychiatric disorders are common across major ethnic groups in the United States (7–10), rates of some disorders may differ across groups, e.g., major depression may be less prevalent among African Americans than among non-Hispanic whites (8).

Among those with similar need, there may be ethnic differences in access to or quality of care for psychiatric disorders. Insured African Americans and Hispanics may be less likely than whites to use outpatient mental health services, while African Americans in the public sector may be more likely than whites to use mental health services (10–14). Less acculturated Mexican Americans may have much lower rates of use of mental health care and substance abuse treatment, especially specialty care, than more acculturated groups (15). Young et al. (16) found that among U.S. adults with probable depressive or anxiety disorders, African Americans had lower rates of appropriate care than did whites. But prior studies have not compared ethnic groups on multiple domains of access to and quality of care for alcoholism, drug abuse, and mental health conditions.

In this study we compared adult non-Hispanic whites, African Americans, and Hispanics in access to and quality of care for alcoholism, drug abuse, and mental health conditions. The study group contained too few data regarding Asian American/Pacific Islanders and Native Americans for separate study. We evaluated care from a consumer perspective, which includes perceptions of unmet need, and from a clinical perspective, which evaluates use of active treatments for alcoholism, drug abuse, and mental health conditions rather than assessing numbers of visits only. We hypothesized that minorities would have more unmet need for alcoholism, drug abuse, and mental health treatment.

Method

We analyzed data from Healthcare for Communities, a national survey funded by the Robert Wood Johnson Foundation. The Healthcare for Communities survey reinterviewed participants in the Community Tracking Study (17) about 14 months after their initial interview. The Healthcare for Communities sample was a stratified random sample of 14,985 of the 30,375 adult telephone respondents in the Community Tracking Study; it was oversampled for psychological distress (i.e., shown by those scoring above a cutoff point on a two-item screen of the mental health inventory

TABLE 1. Demographic Characteristics, Insurance Status, and Health Status of Adults, by Ethnic Group, in a National Survey
of Unmet Need for and Poor Quality of Alcoholism and Drug Abuse Treatment and Mental Health Care

Variable	White $(N=7, 299)^{a}$		African American (N=1 103) ^a		Hispanic (N=617) ^a		Overall	Overall Effect of Ethnicit		
valiable	%	SE	%	SE	%	SE	F	df	p	
								-		
Male sex	47.1	0.8	46.8	1.7	49.5	2.4	0.49	2, 1947	0.62	
Married	63.2	0.9	38.4	2.1	58.0	3.5	60.22	2, 1945	<0.001	
Insurance status										
None	9.4	0.4	17.5	1.5	32.0	2.8	68.98	2, 1884	<0.001	
Private										
No managed care	13.0	0.6	11.2	1.5	4.2	1.0	11.61	2, 1884	<0.001	
Some managed care	26.2	0.8	21.2	2.1	19.6	2.8	3.33	2, 1884	0.04	
Managed care	27.2	0.8	25.0	2.4	28.0	3.5	0.46	2, 1884	0.64	
Medicare	20.3	0.8	11.2	1.4	6.8	1.5	24.83	2, 1884	< 0.001	
Medicaid	3.8	0.3	13.8	1.7	9.3	1.5	50.26	2, 1884	< 0.001	
Education										
Less than high school	10.8	0.6	22.4	1.7	34.6	5.7	44.87	2, 1947	< 0.001	
High school graduate	34.1	0.9	35.7	2.1	30.0	4.0	0.79	2, 1947	0.46	
Some college	29.5	1.0	26.1	1.8	24.2	2.8	2.58	2, 1947	0.08	
College graduate	25.6	1.0	15.8	1.7	11.2	1.4	30.83	2, 1947	< 0.001	
Health status										
Probable mental disorder	13.4	0.6	20.1	1.3	16.6	1.9	11.72	2, 1943	< 0.001	
Substance abuse problem	7.6	0.4	8.8	1.0	9.0	1.9	0.97	2, 1945	0.38	
Perceived need for treatment										
Mental health	10.4	0.5	11.6	1.2	10.4	1.8	0.57	2, 1947	< 0.57	
Substance abuse	1.1	0.1	2.3	0.4	1.3	0.5	5.32	2, 1946	0.005	
	Mean	SE	Mean	SE	Mean	SE	F	df	р	
Age (vears)	48.2	0.4	43.6	0.7	40.4	0.8	44.84	2, 1947	<0.001	
Family income (thousands of dollars)	63.1	3.1	30.9	2.3	39.0	6.5	35.06	2, 1947	< 0.001	
Health status								,		
Score on mental component summary (MCS-12)										
of 12-Item Short-Form Health Survey	45.7	0.1	45.1	0.3	45.4	0.4	2.67	2, 1947	0.07	
Number of chronic conditions	1.3	0.0	1.4	0.1	1.3	0.1	1.52	2, 1926	0.22	
								,		

^a Total Ns vary owing to missing data. Data are nationally weighted and unadjusted (no covariates). Entries are predicted values based on regression coefficients.

from the Medical Outcomes Study); use of prior specialty alcoholism, drug abuse, and mental health treatment; and family income below \$20,000. We obtained 9,585 eligible responses (for a 64% rate of response). Data were weighted for the sampling design and for responses on each survey to represent the noninstitutionalized adult U.S. population. The weighted Healthcare for Communities sample closely matches the 1997 U.S. household population in sociodemographic characteristics (18). The study design has been described elsewhere (19).

Independent Variables

We categorized the respondents' reported main ethnic identification as African American, Hispanic, or non-Hispanic white. Clinical need was assessed for a probable 12-month psychiatric disorder or substance abuse problem. "Psychiatric disorder" was defined as having major depression, dysthymia, or generalized anxiety disorder (as assessed by the Composite International Diagnostic Interview, Short Form [20]); probable panic disorder (based on a positive score on the panic stem item on the Composite International Diagnostic Interview plus a positive score for role limitation on the 12-Item Short-Form Health Survey [21]); or probable severe mental illness (as assessed by a positive score on the Composite International Diagnostic Interview stem item for lifetime mania or from a report of ever having had an overnight hospital stay for psychotic symptoms or of having received a diagnosis of schizophrenia from a physician [22]).

Substance abuse problems were assessed by a positive score for alcohol abuse on the Alcohol Use Disorders Identification Test (23) or recent use of illicit substances as determined from response to items derived from the Composite International Diag-

2028

nostic Interview (21). Concordance rates for DSM-III-R diagnoses obtained from the Composite International Diagnostic Interview, Short Form, and the full Composite International Diagnostic Interview are high, with sensitivity ranging from 77% to 100% and accuracy (specificity) ranging from 93% to 99% (20). Perceived need was measured by asking individuals if they "needed help for emotional or mental health problems, such as feeling sad, blue, anxious, or nervous" or "needed help for alcohol or drug problems." Other health assessments were for mental-health-related quality of life, as assessed with the 12-Item Short-Form Health Survey (21), the global mental scale of the 12-Item Short-Form Health Survey (22), and a count of 17 common chronic medical conditions.

We assessed age, family income, gender, marital status, and education and categorized insurance type as uninsured, Medicaid, Medicare, or private insurance (fully managed, partially managed, or unmanaged on the basis of extent of use of utilization review, closed provider panels, or gate keeping).

Dependent Variables

Access to outpatient care was measured by self-report of use in the previous 12 months of any mental health specialty outpatient services and any general medical services, including counseling, referral, or other recommendations about a mental health or substance abuse problem. We also measured use of any alcoholism, drug abuse, or mental health treatment on the basis of having had an overnight hospital stay, being in day treatment or residential care, and having had an emergency room visit or an outpatient visit for alcoholism, drug abuse, or mental health care. Persons with perceived need but no use of alcoholism, drug abuse, or

 W Afric	White Versus African American			White Versus Hispanic				
t	df	р	t	df	р			
0.15	10/0	0.80	0.94	10/10	0.35	9.019		
-10.86	1946	<0.001	-1.50	1946	0.14	9,015		
5.97	1885	<0.001	10.86	1885	<0.001	8,562		
-1.02	1885	0.31	-4.77	1885	< 0.001	8.562		
-2.09	1885	0.04	-2.07	1885	0.04	8.562		
-0.83	1885	0.41	0.24	1885	0.81	8,562		
-4.72	1885	< 0.001	-5.42	1885	< 0.001	8,562		
8.42	1885	< 0.001	5.02	1885	<0.001	8,562		
8.04	1948	< 0.001	5.65	1948	< 0.001	9,019		
0.70	1948	0.49	-0.93	1948	0.36	9,019		
-1.66	1948	0.10	-1.68	1948	0.10	9,019		
-4.44	1948	< 0.001	-7.01	1948	<0.001	9,019		
4.80	1944	<0.001	1.62	1944	0.11	9,004		
1.28	1946	0.21	0.81	1946	0.42	9,004		
1.02	1040	0.21	0.02	1040	0.00	0.006		
1.05	1940	0.51	-0.02	1940	0.99	9,006		
5.20	1947	0.001	0.45	1947	0.05	9,015		
t	df	р	t	df	р			
-5.90	1948	<0.001	-8.80	1948	<0.001	9,019		
-8.36	1948	<0.001	-3.35	1948	0.001	9,019		
-2.24	1948	0.03	-0.85	1948	0.40	9.019		
1.31	1927	0.19	-0.92	1927	0.36	8,778		

mental health care treatment classified as having an unmet need; those reporting delayed care or receiving less care than needed were classified as having delayed care.

For persons with perceived or clinical alcoholism, drug abuse, or mental health disorders, we used single-item measures of satisfaction with overall care, care for emotional or mental health problems, and care for substance abuse problems in the previous 12 months. We analyzed data for only the persons responding to each item; many persons who did not make use of such care did not respond to the substance abuse item.

To distinguish active treatment from visits involving assessment only, we developed an indicator revealing use of inpatient, day treatment, or residential care; use of prescribed psychotropic medication daily for a month or more; or a period of potentially therapeutic outpatient treatment for alcoholism, drug abuse, and mental health conditions, such as four or more outpatient visits or visits to a provider trained in counseling methods, improving skills in relationships or coping with loss, teaching ways to relax, encouraging enjoyable activities or taking responsibility for substance abuse problems, or teaching how to avoid recurrences.

Analyses

We used logistic and linear regression to compare individuals by ethnicity on their demographic characteristics and in access to care, unmet need for care, satisfaction with care, and use of active treatments. Analyses of unmet need were limited to data for respondents with perceived need. Analyses of satisfaction and active treatment were limited to data for persons with perceived or clinical need. To determine whether ethnic differences held after controlling for demographic and health characteristics, we also conducted multiple regression analyses controlling for covariates expected to affect utilization. For each dependent variable, we examined the significance of the overall effect of ethnicity using an F test and looked at differences between whites and African Americans and whites and Hispanics using t tests. To illustrate the results, we generated adjusted (predicted) means and percentages and calculated standard errors using the parameters of the regression models. Some variables (especially income) had missing data, so we used a multiple imputation method for their analvsis (24–26). All analyses were adjusted for the clustered sampling design by using SUDAAN (27, 28). For comparisons of whites and minorities in health care use, one-tailed tests seemed appropriate given documentation of disparities among ethnic groups in the literature. The results were in a consistent direction, so formal Bonferroni correction for multiple statistical comparisons was deemed too conservative (29); instead we considered multiple statistical comparisons in interpreting findings.

Results

As expected, the ethnic groups differed significantly in demographic characteristics and insurance type (Table 1). Relative to whites, Hispanics and African Americans had lower mean incomes and less education and were younger and less likely to be married. Hispanics and African Americans were more likely than whites to be uninsured or to be covered by Medicaid, while whites were more likely to be covered under Medicare or unmanaged or partially managed private insurance. Compared to whites, African Americans had higher rates of probable mental disorders (13.4% versus 20.1%, respectively; all data were nationally weighted and unadjusted) and of perceived need for substance abuse treatment (1.1% versus 2.3).

The percentage receiving any alcoholism, drug abuse, or mental health treatment was 31.9% for whites, 28.1% for African Americans, and 30.1% for Hispanics (Table 2). While the overall effect of ethnicity was not significant for any indicator of access, both minority groups had point estimates lower than those of whites for each access indicator, and African Americans had significantly lower use than whites when one-tailed tests were used on adjusted models for any use of alcoholism, drug abuse, or mental health treatment; use of primary care alcoholism, drug abuse, or mental health treatment; and use of specialty care alcoholism, drug abuse, or mental health treatment.

Among those with perceived need for care for alcoholism, drug abuse, or mental health disorders, minorities were more likely to report unmet need (12.5% of whites, 25.4% of African Americans, and 22.6% of Hispanics; data were nationally weighted). These differences were significant in unadjusted models, and the difference between African Americans and whites was significant in adjusted models (Table 2). Furthermore, Hispanics tended to have more delays in care than whites in adjusted and unadjusted models (e.g., 22.7% versus 10.7%).

Among those with perceived or clinical need, whites were more likely to be receiving active treatment (37.6%) than either African Americans (25.0%) or Hispanics (22.4%), and both adjusted and unadjusted comparisons

TABLE 2. Use of Alcoholism and Drug Abuse Treatment and Mental Health Care by Adults, by Ethnic Group, in a Nationa
Survey of Unmet Need for and Poor Quality of Alcoholism and Drug Abuse Treatment and Mental Health Care

Aspect of Alcoholism/Drug Abuse Treatment and Mental Health Care	White (N=7,299) ^a		African American (N=1 103) ^a		Hispanic (N=617) ^a		Overall Effect of Ethnicity		
	0/2	SF	%	,105) SE	%	SE	F	df	n
Total group (N=9.019)	70	JL	70	JL	70	JL	,	uj	Ρ
Any care									
Unadiusted	31.9	0.8	28.1	1.8	30.1	3.3	1.98	2. 1943	0.14
Adjusted ^b	31.7	0.8	27.2	1.8	29.9	3.5	2.59	2, 1853	0.08
Primary care								,	
Unadjusted	30.1	0.8	26.5	1.7	28.7	3.2	1.91	2.1943	0.15
Adjusted ^b	30.0	0.8	25.7	1.8	28.4	3.4	2.21	2, 1852	0.11
Specialty care								_,	
Unadjusted	5.4	0.3	4.7	0.8	4.2	0.9	0.86	2, 1946	0.43
Adjusted ^b	5.3	0.2	4.5	0.7	4.2	0.8	1.69	2, 1855	0.19
Respondents with perceived need ($N=1.523$)	515	0.2	115	017		0.0		_,	0115
No care									
Unadjusted	12.5	1.2	25.4	4.4	22.6	6.3	6.70	2.398	0.001
Adjusted ^b	12.8	1.2	25.9	4.2	22.2	5.9	3.22	2,375	0.05
Less than needed or delayed care			2010			515	5	_ , <i>s</i> , <i>s</i>	0.00
Unadjusted	10.7	1.1	7.0	1.8	22.7	6.8	3,88	2.397	0.03
Adjusted ^b	10.7	1.2	7.0	1.9	23.5	6.1	5.13	2,373	0.006
Respondents with perceived or actual need ($N=2.832$)	1017		710		2010	011	5115	_ , <i>s</i> , <i>s</i>	0.000
Active treatment									
Unadjusted	37.6	12	25.0	27	22.4	3.8	12 65	2 713	<0.001
Adjusted ^b	37.0	1.2	23.0	2.7	22.1	33	12.65	2,672	<0.001
hajastea	57.1	1.0	23.1	2.1	22.5	5.5	12.05	2, 072	10.001
	Mean	SE	Mean	SE	Mean	SE	F	df	р
Satisfaction with care ^c	medani	52	mean	52	mean	52			P
General health care									
Unadjusted	3.8	0.0	3.8	0.1	3.6	0.1	2.97	2,693	0.052
Adjusted ^b	39	0.0	3.8	0.1	3.6	0.1	1 58	2,653	0.032
Mental health care	515	0.0	510	011	510	011		2, 000	0.2.
Unadjusted	3.8	0.0	37	0.1	35	0.1	2 99	2 588	0.051
Adjusted ^b	3.8	0.0	37	0.1	3.6	0.1	1 58	2,500	0.031
Substance abuse treatment	5.0	0.1	5.7	0.1	5.0	0.1	1.50	_, _,	0.21
Unadjusted	3.8	0.0	3.7	0.1	3.4	0.1	4.09	2.376	0.02
Adjusted ^b	3.8	0.1	3.7	0.1	3.4	0.1	4.30	2.354	0.02

^a Total Ns vary owing to missing data. Data are nationally weighted. Entries are predicted values based on regression coefficients.

^b Adjusted for covariates for sociodemographic characteristics and health status.

^c Range=1 (very dissatisfied) to 5 (very satisfied).

were significant. In addition, Hispanics were less satisfied than whites with every component of health care. These comparisons were significant for all unadjusted models and for satisfaction with mental health and substance abuse care in adjusted models.

Discussion

We found consistent ethnic differences, all in the same direction: less access to care, poor quality of care, and greater unmet need for alcoholism, drug abuse, and mental health treatment for Hispanics and African Americans in comparison to whites. With such consistency, formal correction for multiple statistical comparisons was deemed too conservative, and the overall pattern of findings for each minority group in comparison with whites was considered most relevant. For African Americans, the pattern included less access to care and greater unmet need for care among those with alcoholism, drug abuse, or mental health needs and also a lower rate of active treatment among those in need, relative to whites. For Hispanics, the pattern included more delays in receiving care, lower satisfaction with care, and lower rates of active treat-

ment among those in need. We had somewhat less precision for comparing access for Hispanics versus whites than for African Americans versus whites, but the observed differences in access were relatively small. The ethnic differences in unmet need for care and for quality of care, however, seem large. For example, the percent of those with unmet need for alcoholism, drug abuse, and mental health care was twice as high for African Americans as for whites, and the percentage of those in need who were receiving active treatment was nearly 50% less for Hispanics than for whites. Had we applied formal correction for multiple comparisons, differences in unmet need for care and for active treatment would still have been significant. Furthermore, these findings were robust after control for other individual characteristics, including indicators of socioeconomic status.

Our findings complement those of Young et al. (16), who reported that African Americans have lower rates of guideline concordant care for depressive and anxiety disorders than whites. Our findings suggest, however, that some types of quality-of-care problems extend to Hispanics and involve treatment for alcoholism, drug abuse, and mental health conditions. Examples of new policies that might

W	hite Vers	sus	V	Analytic		
Afri	can Ame	rican		N		
t	df	р	t	df	р	
-1.93	1944	0.054	-0.50	1944	0.62	8,993
-2.25	1854	0.03	0.28	1854	0.78	8,287
-1.90	1944	0.06	-0.42	1944	0.68	8,994
-2.08	1853	0.04	0.24	1853	0.82	8,288
-0.79	1947	0.44	–1.13	1947	0.26	9,013
-1.83	1856	0.07	–0.25	1856	0.81	8,303
3.38	399	0.001	1.89	399	0.06	1,523
2.31	376	0.03	0.45	376	0.65	1,402
-1.49	398	0.14	2.39	398	0.02	1,518
-1.78	374	0.08	2.43	374	0.02	1,398
-3.91	714	<0.001	-3.37	714	0.001	2,832
-4.78	673	<0.001	-2.12	673	0.04	8,335
t	df	р	t	df	р	
-0.03	694	0.98	-2.38	694	0.02	2,748
1.01	654	0.31	-1.34	654	0.18	8,029
-0.53	589	0.60	-2.40	589	0.02	2,310
-0.61	533	0.54	-1.71	533	0.09	5,340
-0.50	377	0.63	-2.78	377	0.006	1,308
-0.65	355	0.52	-2.85	355	0.005	3,295

address these unmet needs are programs that extend insurance coverage to the near-poor who are in need of care and implementation of quality-improvement programs for major psychiatric disorders in community-based health care settings. For example, effective quality improvement programs have been developed for patients with depressive disorders in primary care settings (30–32), but few such programs have been evaluated or implemented for minorities or for those with other psychiatric disorders. Developing programs to improve access to care and quality of care for minorities should be a high priority for psychiatrists, other mental health specialists, and general medical clinicians.

Our study has important limitations, including modest sample sizes of minority groups, an absence of measures of acculturation, reliance on brief screening measures for psychiatric disorders, and use of self-reports regarding utilization. We had only moderate rates of response among persons who previously participated in a national survey, so nonresponse combined across surveys could have biased our results. We applied nationally representative weights to all phases of the study to control for attrition. Overall, our findings document ethnic disparities in access to care, unmet need for care, and quality of alcoholism, drug abuse, and mental health care and emphasize the importance of public education and interventions in medical and psychiatric practice to broadly improve the quality of care for ethnic minorities.

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References

- 1. Williams DR, Collins C: Socioeconomic and racial differences in health. Annu Rev Sociol 1995; 21:349–386
- Ren XS, Amick BC: Racial and ethnic disparities in self-assessed health status: evidence from the National Survey of Families and Households. Ethnicity and Health 1996; 1:293–303
- 3. Navarro V: Race or class versus race and class: mortality differentials in the US. Lancet 1990; 336:1238–1240
- Escarce JJ, Epstein KR, Colby DC, Schwartz JS: Racial differences in the elderly's use of medical procedures and diagnostic tests. Am J Public Health 1993; 83:948–954
- Wenneker MB, Epstein AM: Racial inequities in the use of procedures for patients with ischemic heart disease in Massachusetts. JAMA 1989; 261:253–257
- Mental Health: A Report of the Surgeon General. Rockville, Md, US Department of Health and Human Services, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health, 1999
- Kessler RC, McGonagle KA, Zhao S, Nelson CB, Hughes M, Eshleman S, Wittchen H-U, Kendler KS: Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States: results from the National Comorbidity Survey. Arch Gen Psychiatry 1994; 51:8–19
- Blazer DG, Kessler RC, McGonagle KA, Swartz MS: The prevalence and distribution of major depression in a national community sample: the National Comorbidity Survey. Am J Psychiatry 1994; 151:979–986
- Vega W, Kolody B, Aguilar-Gaxiola S, Alderete E, Catalano R, Caraveo-Anduaga J: Lifetime prevalence of DSM-III-R psychiatric disorders among urban and rural Mexican Americans in California. Arch Gen Psychiatry 1998; 55:771–778
- Neighbors HW, Bashshur R, Price R, Donabedian A, Selig S, Shannon G: Ethnic minority health service delivery: a review of the literature. Res in Community Ment Health 1992; 1:55–71
- 11. Padgett DK, Patrick C, Burns BJ, Schlesinger HJ: Ethnicity and the use of outpatient mental health services in a national insured population. Am J Public Health 1994; 84:222–226
- Scheffler RM, Miller AB: Demand analysis of mental health service use among ethnic subpopulations. Inquiry 1989; 26:202–215
- 13. Swartz MS, Wagner HR, Swanson JW, Burns BJ, George LK, Padgett DK: Administrative update: utilization of services, I: comparing use of public and private mental health services: the enduring barriers of race and age. Community Ment Health J 1998; 34:133–144

DISPARITIES IN MENTAL HEALTH CARE

- Snowden LR, Thomas K: Medicaid and African American outpatient mental health treatment. Ment Health Serv Res 2000; 2:115–120
- Vega WA, Kolody B, Aguilar-Gaxiola S, Catalano R: Gaps in service utilization by Mexican Americans with mental health problems. Am J Psychiatry 1999; 156:928–934
- Young AS, Klap R, Sherbourne CD, Wells KB: The quality of care for depressive and anxiety disorders in the United States. Arch Gen Psychiatry 2001; 58:55–61
- 17. Kemper PA, Blumenthal D, Corrigan JM, Cunningham PJ, Felt SM, Grossman JM, Kohn LT, Metcalf CE, St Peter RF, Strouse RC, Ginsburg PB: The design of the Community Tracking Study: a longitudinal study of health system change and its effects on people. Inquiry 1996; 33:195–206
- Sturm R, Sherbourne CD: Are Barriers to Mental Health and Substance Abuse Care Still Rising? Los Angeles, UCLA/RAND Center on Managed Care, 1999
- Sturm R, Gresenz CR, Sherbourne CV, Bhattarchaya J, Farley D, Young AS, Minnium K, Burnam MA, Wells KB: The design of Healthcare for Communities: a study of healthcare delivery for alcohol, drug abuse, and mental health conditions. Inquiry 1999; 36:221–233
- Kessler RC, Andrews G, Mroczek D, Ustun B, Wittchen H-U: The World Health Organization Composite International Diagnostic Interview Short Form (CIDI-SF). Int J Methods in Psychiatr Res 1998; 7:171–185
- 21. World Health Organization: Composite International Diagnostic Interview (CIDI), version 2.1. Geneva, Switzerland, WHO, 1995

- 22. Ware JE, Kosinski M, Keller SF: A 12-Item Short-Form Health Survey: construction of scales and preliminary tests of reliability and validity. Med Care 1996; 34:220–233
- 23. World Health Organization (WHO): The Alcohol Use Disorders Identification Test (AUDIT): Guidelines for Use in Primary Care. Geneva, WHO, 1992.
- 24. Little RJA, Rubin DB: Statistical Analysis With Missing Data. New York, John Wiley & Sons, 1987
- 25. Rubin DB: Multiple Imputation for Nonresponse in Surveys. New York, John Wiley & Sons, 1987
- 26. Schafer JL: Analysis of Incomplete Multivariate Data. London, Chapman & Hall, 1997
- 27. SUDAAN: Software for the Statistical Analysis of Correlated Data, version 7.5. Cary, NC, Research Triangle Institute, 1997
- Yates F, Grundy PM: Selection without replacement from within strata and probability proportional to size. J Royal Statistical Society Series B 1953; 15:253–261
- 29. Feller W: An Introduction to Probability Theory and Its Application. New York, John Wiley & Sons, 1968
- Wells KB, Sherbourne C, Schoenbaum M, Duan N, Meredith LS, Unutzer J, Miranda J, Carney MF, Rubenstein LV: Impact of disseminating quality improvement programs for depression in managed primary care. JAMA 2000; 283:212–220
- Katon W, Robinson P, Von Korff M, Lin E, Bush T, Ludman E, Simon G, Walker E: A multifaceted intervention to improve treatment of depression in primary care. Arch Gen Psychiatry 1996; 53:924–932
- Katon W, Von Korff M, Lin E, Walker E, Simon GE, Bush T, Robinson P, Russo J: Collaborative management to achieve treatment guidelines: impact on depression in primary care. JAMA 1995; 273:1026–1031