Recent Care of Common Mental Disorders in the United States

Prevalence and Conformance with Evidence-Based Recommendations

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OBJECTIVE: **To relate the presence of recent mental disorders to use of mental health services.**

DESIGN: **Cross-sectional survey.**

STUDY POPULATION: **The study population was 3,032 respondents to the Midlife Development in the United States (MIDUS) survey, a nationally representative telephone-and-mail survey conducted in 1996. Twelve-month diagnoses according to the *Diagnostic and Statistical Manual of Mental Disorders, Revised, Third Edition*, of major depressive episode, panic disorder, generalized anxiety disorder, and serious mental illness were made using a structured assessment. Information was obtained on 12-month treatment for mental health problems in the general medical, mental health specialty, human services, and self-help sectors. Definitions of treatments consistent with evidence-based recommendations were developed using available practice guidelines.**

MEASUREMENTS AND MAIN RESULTS: **Crude and adjusted likelihoods of receiving any mental health care and guideline-concordant care were measured. Although 53.8% of respondents with at least one 12-month mental disorder received any mental health care in the previous year, only 14.3% received care that could be considered consistent with evidence-based treatment recommendations. Even among those with the most serious and impairing mental illness, only 25% received guideline-concordant treatment. Predictors of receiving guideline-concordant care included being white, female, severely ill, and having mental health insurance coverage.**

CONCLUSIONS: **An epidemic of untreated and poorly treated mental disorders exists in the United States, especially among vulnerable groups such as African Americans and the underinsured. Cost-effective interventions are needed to improve both access to and quality of treatment.**

KEY WORDS: **mental disorders; depression; anxiety; mental health care; guideline concordance.**
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Mental illnesses such as depression and anxiety disorders impose enormous societal burdens owing to their high prevalences[1] and substantial associated morbidity, mortality, and health care costs.[2–5] Despite the

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availability of effective therapies,[6–11] studies conducted in past decades found that only a minority of people with active depression and anxiety disorders in the United States had been treated in the previous year. In the Epidemiologic Catchment Area Study conducted in the 1980s, only 19% of those with an active mental illness received any mental health care in the past year[12]; in the National Comorbidity Survey conducted in 1990, only 21% of those suffering from a mental disorder received professional treatment in the past year.[1] Even smaller proportions of individuals with mental disorders have been observed to receive treatment that can be considered to be adequate. In the National Comorbity Survey, for example, only 7% of those with major depression received treatment that the researchers evaluated as minimally adequate in the past year.[13]

Since 1990, there have been many dramatic changes in mental health treatments and mental health care delivery systems. Newer classes of psychotropic medications with potentially greater tolerability have become widely available. A larger proportion of the U.S. population is now covered under managed care, and primary care clinicians are increasingly being given the responsibility of providing mental health care.[14] Interventions have also been attempted to improve the adequacy of mental health treatment. For example, large-scale community programs have been implemented to promote detection and treatment, such as the annual National Mental Illness Awareness Week; Anxiety Screening Day; the Depression Screening Day; the Depression/Awareness, Recognition, and Treatment program; and the National Public Education Campaign on Clinical Depression.[15] Evidence-based guidelines for the treatment of depression have been developed for primary care physicians by the federal Agency for Health Care Policy and Research,[9] while the American Psychiatric Association has developed guidelines for psychiatrists for the treatment of depression and panic disorder.[10,11] Performance standards are also increasingly being used as mechanisms to improve treatment for patients with mental disorders in health care systems.[16,17]

The impact of these changes and interventions on the current prevalence and adequacy of treatment for common mental disorders in the United States is largely unknown, and up-to-date data are critically needed. It is also crucial to identify the current reasons why those with mental disorders receive no care or poor-quality mental health care. Many studies of patterns and determinants of receiving mental health treatments are at least a decade old, and others were restricted to specialized study populations.[12,18–22] Some possess methodologic limitations, including inadequate power and examination of only a nar-

row range of potential determinants of receiving adequate care. Few have examined the care received by those with the most severe and impairing forms of mental illness or identified patterns and predictors of treatment within particular sectors either inside or outside the health care system.

The first goal of this study was to provide up-to-date, nationally representative estimates of the patterns of mental health treatments received by those with 3 common mental disorders: depression, panic disorder, and generalized anxiety disorder (GAD). We also focused specifically on the care received by those with the most severe and impairing forms of these mental illnesses because such patients are often the most vulnerable to changes in treatment availability. We then developed definitions of care that were concordant with evidence-based treatment recommendations and assessed the degree to which the treatment received met these definitions. Because mental health treatment can be obtained from a wide range of providers and professionals, we examined treatment in different sectors, such as the general medical or mental health specialty sectors. Finally, we sought to begin understanding the underlying reasons for particular patterns of mental health services use by identifying patient and health care system features associated with the sector, quantity, and guideline concordance of mental health care received.

METHODS

Study Population

Data for this study came from the Midlife Development in the United States (MIDUS) survey, a nationally representative telephone-and-mail survey carried out in 1996 under the auspices of the John D. and Catherine T. MacArthur Foundation Network on Successful Midlife Development. Respondents consisted of 3,032 individuals who had been recruited from a random-digit-dial sampling frame of the conterminous United States. Only 1 respondent was selected from each household. Men and older individuals were oversampled. The survey was carried out in 2 phases: the first was a telephone interview that took an average of 30 minutes to complete; the second was a self-administered mail questionnaire estimated to take 2 hours to complete. The response rate to phase 1 interviews was 70.0%, and the conditional phase 2 response rate was 86.8%, leading to an overall response rate of 60.8%. All data were weighted for differential probabilities of selection and differential nonresponse.

Measures of Mental Disorders

Diagnoses of 12-month major depressive episode, panic disorder, and GAD, based on the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders, Revised Third Edition (DSM-III-R)*,[23] were assessed with the World Mental Health Organization's

Composite International Diagnostic Interview Short Form (WHO CIDI-SF).[24] Psychometric analyses have shown good agreement between CIDI-SF and full CIDI diagnoses, and clinical reappraisal studies have demonstrated good agreement between CIDI diagnoses and independent clinician diagnoses.[24,25]

Measurement of Serious Mental Illness

Public Law 102-321 of the ADAMHA Reorganization Act defined serious mental illness (SMI) as any *DSM-III-R* mental disorder that leads to "substantial interference with one or more major life activities." We used *DSM-III-R* diagnoses and assessments of impairments from the MIDUS survey to create an operational definition of SMI, similar to the definition used by the Substance Abuse and Mental Health Services Administration.[26] This definition consisted of having at least 1 of the 3 disorders in the prior 12 months and having at least 1 of the following impairments: work disability due to mental illness; significant social role impairment due to mental health problems; or significant social isolation or the absence of social supports. Work disability was defined as having a total family income less than the federal poverty line plus at least 1 of the following: unemployed and looking for work, unemployed for 13 weeks or more, or on sick leave or disability. Social role impairment was defined as being completely unable to perform one's role functions inside or outside the home, exclusively because of mental illness, on 1 or more full days in the past month. Days on which role functions were significantly cut back, owing exclusively to mental illness, were considered equivalent to 0.5 days on which respondents were completely unable to perform their role functions. Social isolation was defined as reporting having both little or no contact with and little or no social support from all of the following: family, relatives, friends, and coworkers.

Definitions of Mental Health Care

All respondents were asked whether they saw a professional for problems with their mental health within the prior 12 months and, if so, the types of professionals seen and the total number of visits. Other questions inquired about medication use.

The treatment received in the prior 12 months was divided into care received in 5 sectors: (1) *general medical sector*, defined as seeing a medical doctor other than a psychiatrist in any setting for a mental or emotional problem; (2) *psychiatrist, mental health specialty sector*, defined as seeing a psychiatrist for treatment of a mental health problem; (3) *nonpsychiatrist, mental health specialty sector*, defined as seeing a psychologist, social worker, therapist, or counselor for a mental health problem; (4) *human services sector*, defined as having seen a non-health-care professional such as a minister, priest, rabbi, or spiritual advisor for a mental or emotional problem; and (5)

self-help sector, defined as attending a formal self-help or mutual assistance group (that was not run by a health care professional) for a mental or emotional problem.

The general medical, psychiatrist, and nonpsychiatrist specialty mental health sectors were also aggregated to form the "health care sector"; in addition, the psychiatrist and nonpsychiatrist specialty mental health sectors were aggregated to form the "mental health specialty" sector.

Definition of Care Consistent with Evidence-Based Treatment Recommendations

Guideline-concordant treatment was defined as either receiving a prescription medication for depression or anxiety from a general medical doctor or psychiatrist plus at least 4 visits to the same type of provider, or receiving at least 8 visits to either a psychiatrist or mental health specialist in the absence of medication.

The minimum of 4 visits required for those receiving a prescription medication was based on our observation that generally no fewer than 4 visits for follow-up and medication monitoring are recommended during the acute and continuation phases of treatment for depression and panic disorder in evidence-based treatment guidelines.[9–11] Similarly, a minimum requirement of 8 visits to a mental health specialist for those receiving no prescription medication was based on the observation that time-limited psychotherapies shown to be effective for depression or anxiety disorders have generally required at least 8 sessions in clinical trials.[9–11]

Other Covariates

Information on a variety of potential predictors of receiving treatment was collected in MIDUS. *Demographic variables* were age, gender, race, income, and education level. *Clinical features* were number and type of comorbid physical, mental, and substance abuse disorders; depression symptom severity and anxiety symptom severity based on items from the Hopkins Symptom Checklist; panic disorder severity based on the frequency of panic episodes; and a general measure of severity of mental illness consisting of 4 categories ("none," corresponding to no mental disorder and no SMI; "low," corresponding to 1 mental disorder and no SMI; "medium," corresponding to multiple mental disorders and no SMI; and "high," corresponding to any number of mental disorders and SMI). *Health care system features and health care utilization* were determined by insurance coverage status for mental health visits, quantity and reasons for use of other general medical services, quantity and reasons for use of other medications, and the quantity of use of alternative therapies.

Analyses

The 12-month prevalences of individual disorders were calculated for the entire study population as well as for strata defined by demographic, clinical, and health care system variables. The percentages of subjects with individual disorders or SMI who received mental health care in any sector or particular sectors were also calculated. We then estimated the percentages who received guideline-concordant treatment in the entire population and among those who had either 1 or more general medical sector visits for a mental health problem, or 1 or more specialty mental health visits.

In bivariate analyses, we examined the strength and significance of associations between covariates and receiving 1 of the following 5 forms of mental health care: (1) mental health care in any sector, among those with at least 1 of the 3 mental disorders; (2) mental health care in the general medical sector, among those that received mental health care in any sector; (3) mental health care in the mental health specialty sector, among those that received mental health care in any sector; (4) guideline-concordant mental health care in the general medical sector, among those receiving any mental health care in the general medical sector; and (5) guideline-concordant care in the mental health specialty sector, among those receiving any care in the mental health specialty sector.

Multiple logistic regression models were constructed to study the independent effects of demographic, clinical, or health care utilization variables on the likelihood of receiving 1 of the 5 types of mental health care described above. Covariates identified in bivariate screens as being significantly associated (at the $P = .05$ level) with receiving minimally adequate treatment were included in all multivariate models. Interactions between levels of severity of mental illness and variables for which significant main effects had been observed were examined for all final models.

Because of the complex sampling design of the MIDUS survey, all analyses were performed using weights that adjusted for variations in within-household probabilities of selection and for differential nonresponse. All analyses were run using SAS software, release 6.12 (SAS Institute, Cary, NC, 1996).

RESULTS

The percentages of subjects who met criteria for the three *DSM-III-R* disorders in the 12 months prior to the survey are as follows: major depressive disorder, 14.1%; panic disorder, 6.8%; GAD, 3.3%; any 1 of these 3 disorders, 18.4%; and SMI, 3.7%. These percentages among strata defined by demographic, clinical, and health care system variables appear in Table 1. The 12-month prevalences were generally higher among those of younger age, women, those with lower incomes, and those with more comorbid physical illness, and lower among blacks.

The percentages of subjects who received mental health care in different sectors are reported in Table 2. The proportion receiving any treatment during the prior 12 months ranged between a high of 70.2% for those with

Table 1. Prevalence of 12-Month *DSM-III-R* Mental Disorders and Serious Mental Illness Among Sociodemographic Categories in the MIDUS Survey

Characteristic	Unweighted, n	*DSM-III-R* Disorders,* %				Serious Mental Illness, %
		Major Depression	Generalized Anxiety Disorder	Panic Disorder	Any of 3 *DSM-III-R* Mental Disorders	
Age, y						
25–34	983	17.5	3.2	6.3	20.9	4.7
35–44	1,001	17.4	5.0	8.4	21.9	4.7
45–54	1,004	13.1	3.8	9.0	19.5	4.4
55–64	789	8.9	1.4	4.5	12.9	1.5
65–74	465	7.5	0.8	3.8	9.7	0.5
χ^2_4		38.6[†]	20.8[†]	17.1[†]	37.6[†]	22.0[†]
Gender						
Female	2,087	17.3	4.3	8.8	22.9	4.9
Male	2,155	10	1.8	4.3	12.5	2.4
χ^2_1		32.2[†]	15.3[†]	24.3[†]	54.2[†]	10.9[†]
Race						
Black	230	11.0	2.5	1.2	11.7	3.0
Other	861	16.9	5.4	7.8	22.2	4.9
White	3,151	14.3	3.2	7.5	18.9	3.7
χ^2_2		4.1	3.9	18.8[†]	12.5[†]	1.2
Income						
$0–$23,500	888	18.9	5.3	9.9	25.2	7.3
$23,501–$41,500	962	15.3	2.7	6.4	18.6	2.7
$41,501–$64,000	1,255	11.4	2.4	5.6	14.9	2.1
$64,001+	1,137	10.9	2.6	5.4	14.6	2.7
χ^2_3		26.6[†]	13.5[†]	16.1[†]	37.2[†]	37.1[†]
Education, y						
0–11	418	18.5	5.9	8.9	23.8	5.6
12	1,204	13.0	2.7	6.8	16.9	2.3
13–15	1,287	15.7	4.0	8.2	20.6	5.1
16+	1,333	11.7	1.9	4.2	15.2	3.3
χ^2_3		12.3[†]	15.5[†]	12.5[†]	16.8[†]	15.1[†]
Number of comorbid physical conditions						
0	1,289	7.0	0.8	2.6	8.4	0.7
1	890	13.0	1.9	2.9	15.5	3.4
2	629	11.7	2.1	4.3	15.0	3.6
3+	1,434	20.1	5.9	12.5	27.3	5.6
χ^2_3		67.5[†]	46.5[†]	100.3[†]	116.8[†]	30.5[†]
Insurance coverage for mental health visits						
Yes	2,104	14.2	3.7	7.0	18.6	3.3
No	2,138	14.0	2.8	6.7	18.2	4.1
χ^2_1		0.1	2.3	0.1	0.1	1.3

*DSM-III-R *indicates* Diagnostic and Statistical Manual of Mental Disorders, Third Revised Edition, *MIDUS, Midlife Development in the United States.*
[†]*Significant at the* P *= .007 level.*

GAD or SMI and a low of 25.3% for those without 1 of the 3 disorders. A greater proportion received mental health treatment in the general medical sector than in any other specific sector, with 12-month prevalences ranging between 56.3% for those with GAD and 14.8% for those without 1 of the 3 disorders. The next most frequently used sectors for mental health problems were the nonpsychiatrist mental health specialty sector (from 33.3% for those with SMI to 5.3% for those without 1 of the 3 disorders) followed by the psychiatrist sector (from 21.1% for those with GAD to 2.2% for those without 1 of the 3 disorders). Fewer received mental health care in the self-help sector (from 17.5% for those with SMI to 5.9% for those without 1 of the 3 disorders) and from the human services sector (from 16.2% for those with SMI to 3.6% for those without 1 of the 3 disorders).

The prevalences of receiving mental health care that met our definition of guideline-concordant treatment ranged between 25.0% for those with SMI and 3.2% for those without 1 of the 3 disorders. Higher prevalences of

Table 2. Prevalence of 12-Month Treatment for Mental Health Reasons for Three *DSM-III-R* Mental Disorders and Serious Mental Illness*

Sector	*DSM-III-R* Mental Disorders, %				Serious Mental Illness, %	No Mental Disorders,[†] %
	Major Depression	Generalized Anxiety Disorder	Panic Disorder	Any of 3 *DSM-III-R* Mental Disorders		
Any sector	57.7	70.2	48.6	53.8	70.2	25.3
Health care sector[‡]	50.4	66.9	43.2	47.1	65.3	19.2
General medical sector (GMS)	38.6	56.3	34.1	36.7	47.3	14.8
Nonpsychiatrist MHS sector[§]	20.7	30.5	17.3	19.0	33.3	5.3
Psychiatrist MHS sector[§]	16.3	21.1	12.2	13.3	20.5	2.2
Self-help sector	12.3	11.2	11.4	11.2	17.5	5.9
Human services sector	11.0	9.8	10.0	10.4	16.2	3.6
Guideline-concordant mental health care[‖]	16.9	24.6	16.0	14.3	25.0	3.2
With ≥1 GMS visit	31.7	35.2	32.2	27.9	35.8	12.3
With ≥1 MHS visit	45.7	56.6	49.3	42.9	47.7	38.1

*DSM-III-R *indicates* Diagnostic and Statistical Manual of Mental Disorders, Third Revised Edition.
[†] *"No mental disorders" specifically means none of the 3 disorders assessed in this study (i.e., major depression, generalized anxiety disorder, and panic disorder). Patients may have had another common mental disorder (e.g., dysthymia, social phobia, or alcohol-related disorders).*
[‡] *"Health care sector" is defined as the general medical, nonpsychiatrist mental health specialty (MHS), and psychiatrist sectors.*
[§] *"MHS (mental health specialty) sector" is defined as treatment by either a psychiatrist or nonpsychiatrist mental health specialist.*
[‖] *"Guideline-concordant mental health care" is defined as either receiving medication from a general medical doctor or psychiatrist plus ≥4 visits to the same type of provider, or receiving 8 visits to a psychiatrist or mental health specialist in the absence of medication.*

guideline-consistent treatment were observed among the subsets who made at least 1 general medical sector visit for a mental health problem (ranging from 35.8% for those with SMI to 12.3% for those without 1 of the 3 disorders), while the highest rates were found among respondents who made at least 1 visit to a mental health specialist (ranging from 56.6% for those with GAD to 38.1% for those without 1 of the 3 disorders).

Table 3 presents evidence regarding the independent effects of patient demographic, clinical, and health care system factors on receiving different types of mental health care. Statistically significant predictors of receiving at least some mental health care in any sector included having more-severe mental illness, more comorbid physical illnesses, and insurance coverage for mental health visits.

A lower education level was a significant predictor of receiving mental health care in, specifically, the general medical sector. In addition, there appeared to be a tendency for those with more comorbid physical conditions to receive mental health care in the general medical sector. Predictors of receiving care in the mental health specialty sector included higher education levels, more-severe mental illness, and insurance coverage for mental health visits. In addition, there appeared to be a tendency for younger subjects to receive mental health care in the mental health specialty sector.

Factors associated with receiving guideline-consistent care in the general medical sector included being white, having more-severe mental illness, and having insurance coverage for mental health visits. There appeared to be a tendency for those with more comorbid physical conditions to receive guideline-concordant mental health care in the general medical sector. Predictors of receiving guideline-consistent treatment in the mental health specialty sector included being white, being female, and having insurance coverage for mental health visits. No statistically significant 2-way interactions were observed between levels of severity of mental illness and variables for which significant main effects had been observed in final models.

DISCUSSION

The results from this study have important implications for patients, clinicians, and health services researchers. Though up to two thirds of those with depression and anxiety disorders received at least some mental health care in the year prior to the survey, only one fourth obtained treatments that could be considered consistent with evidence-based recommendations, even among those with the most serious and impairing mental illness. Such findings suggest that interventions are needed not only to improve mental health awareness and treatment seeking in the general population, but also to increase the extent to which the care received conforms with evidence-based recommendations.

Results from this study also provide some information that may help guide future efforts to improve the quality of mental health care. To properly develop and target quality improvement interventions, it is crucial to first understand the reasons why no treatment is obtained and why treatment that is obtained fails to conform with evidence-based recommendations. We began this process by identifying factors associated with receiving no mental health care; these included having less-severe mental illness, having fewer comorbid physical illnesses, and lack-

Table 3. Predictors of Receiving any 12-Month Treatment, Treatment in Different Sectors, and Guideline-Concordant Treatment for Major Depression, Generalized Anxiety Disorder, and Panic Disorder*

Predictor	Treatment in Any Sector	Treatment in the GMS Given Any Treatment	Treatment in the MHS Sector[†] Given Any Treatment	Guideline-Concordant[‡] Treatment in the GMS Given Any GMS Treatment	Guideline-Concordant[‡] Treatment in the MHS Sector Given Any MHS Treatment
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Age, y					
25–34	1.8 (0.8 to 4.1)	0.5 (0.1 to 2.2)	2.8 (0.7 to 10.8)	0.8 (0.2 to 3.8)	0.2 (0.0 to 6.8)
35–44	2.4 (1.0 to 5.3)	0.5 (0.1 to 2.2)	1.1 (0.3 to 4.2)	1.1 (0.2 to 5.2)	0.1 (0.0 to 4.7)
45–54	1.8 (0.8 to 4.3)	0.6 (0.1 to 2.7)	1.3 (0.3 to 5.0)	1.4 (0.3 to 6.9)	0.3 (0.0 to 9.5)
55–64	1.4 (0.6 to 3.5)	2.1 (0.3 to 14.4)	0.3 (0.1 to 1.6)	4.0 (0.7 to 22.4)	0.2 (0.0 to 12.7)
65–74	1.0 (—)	1.0 (—)	1.0 (—)	1.0 (—)	1.0 (—)
χ^2_4	5.5	5.8	18.4[§]	7.0	2.9
Gender					
Female	1.2 (0.8 to 1.7)	0.6 (0.3 to 1.1)	1.0 (0.6 to 1.7)	1.6 (0.7 to 3.5)	2.6[§] (1.1 to 6.1)
Male	1.0 (—)	1.0 (—)	1.0 (—)	1.0 (—)	1.0 (—)
χ^2_1	0.5	2.8	0.0	1.5	5.2[§]
Race					
Black	0.9 (0.4 to 1.8)	2.1 (0.8 to 5.9)	0.8 (0.3 to 2.0)	0.1[§] (0.0 to 0.7)	0.1[§] (0.0 to 0.5)
Other	1.0 (0.5 to 1.8)	1.3 (0.5 to 3.4)	0.9 (0.4 to 2.2)	0.5 (0.2 to 1.6)	1.0 (0.3 to 3.9)
White	1.0 (—)	1.0 (—)	1.0 (—)	1.0 (—)	1.0 (—)
χ^2_2	0.1	2.3	0.2	8.1[§]	9.6[§]
Education, y					
0–11	1.2 (0.6 to 2.2)	2.0 (0.8 to 4.7)	0.3[§] (0.1 to 0.7)	0.8 (0.2 to 2.6)	1.0 (0.3 to 4.2)
12	0.8 (0.5 to 1.3)	3.1[§] (1.4 to 6.8)	0.5 (0.2 to 1.1)	1.1 (0.4 to 3.1)	0.4 (0.1 to 1.2)
13–15	1.0 (0.6 to 1.7)	1.8 (0.9 to 3.8)	0.6 (0.3 to 1.3)	0.4 (0.1 to 1.2)	0.9 (0.3 to 2.4)
16+	1.0 (—)	1.0 (—)	1.0 (—)	1.0 (—)	1.0 (—)
χ^2_3	3.1	8.7[§]	7.5	5.2	3.7
Severity of mental illness[‖]					
Low	1.0 (—)	1.0 (—)	1.0 (—)	1.0 (—)	1.0 (—)
Mid-level	1.4 (0.9 to 2.3)	2.2 (1.0 to 4.6)	1.0 (0.5 to 2.0)	3.2[§] (1.3 to 7.8)	2.1 (0.7 to 6.3)
High	2.5[§] (1.5 to 4.0)	1.3 (0.7 to 2.5)	2.3[§] (1.2 to 4.3)	2.5[§] (1.1 to 5.8)	1.5 (0.6 to 3.7)
χ^2_2	14.1[¶]	4.2	7.7	8.4[§]	2.0
Number of comorbid physical conditions					
0	1.0 (—)	1.0 (—)	1.0 (—)	1.0 (—)	1.0 (—)
1	1.8 (0.9 to 3.7)	0.7 (0.2 to 2.2)	1.0 (0.3 to 3.2)	1.3 (0.1 to 12.3)	1.1 (0.2 to 6.4)
2	3.0[§] (1.4 to 6.3)	1.0 (0.3 to 3.2)	1.2 (0.4 to 4.0)	1.3 (0.1 to 12.8)	2.1 (0.3 to 12.9)
3+	3.1[§] (1.6 to 5.6)	2.0 (0.7 to 5.8)	1.5 (0.5 to 4.3)	7.7 (1.0 to 56.8)	2.6 (0.5 to 13.3)
χ^2_3	14.6[¶]	10.4[§]	1.7	19.0[¶]	3.3
Insurance coverage for mental health visits					
Yes	2.3[§] (1.6 to 3.4)	0.6 (0.3 to 1.0)	3.2[§] (1.8 to 5.7)	4.2[§] (2.0 to 8.9)	2.8[§] (1.1 to 7.1)
No	1.0 (—)	1.0 (—)	1.0 (—)	1.0 (—)	1.0 (—)
χ^2_1	19.4[¶]	3.7	16.5[¶]	15.1[¶]	4.9[§]

* *OR indicates odds ratio; CI, confidence interval; GMS, general medical sector; MHS, mental health specialty.*

[†] *"MHS sector" is defined as treatment by either a psychiatrist or nonpsychiatrist mental health specialist.*

[‡] *"Guideline-concordant" treatment is defined as either receiving medication from a general medical doctor or psychiatrist plus ≥4 visits to the same type of provider, or ≥8 visits to a psychiatrist or mental health specialist in the absence of medication.*

[§] *Significance at* P = .05 *level.*

[¶] *Significant at the* P = .007 *level.*

[‖] *Low in "severity of mental illness" means no SMI and 1 disorder, mid-level means no SMI and 2 or more disorders, and high means SMI.*

ing insurance coverage for mental health visits. Other investigators have also found that those with less-severe mental illness receive less care and have suggested that this may be due to less actual or perceived need for treatment.[18,19,21,22,27,28] Those requiring treatments for comorbid conditions may be more willing or have more opportunities to receive treatment for their mental disorders[29]; another intriguing possible explanation is that patients or

providers require a "legitimate" physical illness before treating psychiatric symptoms.[30] The relation between insurance coverage and receiving care suggests that financial barriers are significant impediments to receiving any mental health care.

In the subsample of respondents who received treatment, we also identified predictors of receiving treatment that are inconsistent with evidence-based recommendations. Some factors, such as being black or lacking insurance coverage for mental health visits, were predictors of nonconcordant treatment in both the general medical sector and the mental health specialty sector. However, having less-severe mental illness and fewer comorbid physical illnesses were predictive of receiving nonconcordant treatment only in the general medical sector; conversely, being male was predictive of receiving nonconcordant treatment only in the mental health specialty sector.

It is important to consider possible explanations and implications of these findings. African Americans have been observed in other studies to receive inferior care for both physical and mental illnesses.[18,31,32] In many prior studies, it was not possible to identify the degree to which the inadequate treatment received by African Americans was due to their failure to seek help or lack of access to the health care system, or the degree to which they had access but ultimately received care that was deficient. In this study, we disaggregated the process of receiving guideline-concordant treatment and found that being black was not a significant predictor of whether one successfully obtained any mental health care or care in particular sectors of the health care system; a recent study also found that in the 1990s, African Americans had become as likely as whites to receive any mental health care.[33] However, in our study we found that among those who successfully obtained some mental health care in either the general medical or mental health specialty sectors, blacks were much less likely to receive treatment that conformed with evidence-based recommendations. The degree to which this finding may be due to a greater likelihood for African Americans to prematurely leave treatment, a treatment bias on the part of providers, or other reasons should receive further study.

Our observation that insurance coverage was significantly related to receiving guideline-consistent care in both the general medical and mental health specialty sectors is relevant in the debate over the need for parity between coverage for physical disorders and mental disorders. Our results indicate that insurance coverage for mental illness must be broad, or both access to and the standards of mental health care will suffer.

It is not clear why those with less-severe mental illness or fewer comorbid physical illnesses were more likely to receive guideline-inconsistent care in the general medical sector but not the mental health specialty sector. It may reflect the fact that in their new roles as gatekeepers, primary care providers must triage patients, deciding whose symptoms do and whose do not warrant more-

intensive treatment. Primary care physicians may also increasingly find themselves experiencing a climate of competing demands, in which their limited time and resources need to be spent attending to general medical rather than mental illnesses.[34,35] Alternatively, these results may indicate the continued need to improve recognition and treatment of mental illness by general medical doctors, particularly among patients with moderate or atypical symptoms.[27–30] The reasons for the greater likelihood of women receiving guideline-concordant treatment from mental health specialists are also unclear. Earlier research has suggested that women have a greater ability to translate nonspecific feelings of distress into conscious recognition that they have an emotional problem and therefore are more likely to seek, accept, and continue in treatment.[36,37]

Results from this study should be interpreted with the following 3 sets of limitations in mind. First, although deviation from recommendations in evidence-based treatment guidelines[9–11] is likely to represent inadequate care in the majority of cases, in some circumstances deviation could represent appropriate treatment. In addition, some subjects who were diagnosed shortly (e.g., 1–2 months) before being surveyed may have only begun treatment and not had adequate time to fulfill the required number of visits. To the extent that either of these occurred, we may have underestimated the extent of guideline-concordant treatment. Conversely, we may have counted visits in which the respondent's mental health problem was not addressed toward the required number of visits, causing us to overestimate the degree of concordance of the treatment. Also, because of the nonrandom way in which treatments had been used in the study population, we could not investigate whether receiving concordant care was associated with improved health outcomes.

A second set of limitations includes the cross-sectional nature of this study. Due to this it is difficult to conclude that factors associated with receiving particular treatments are related causally (e.g., although lack of insurance coverage appears to cause a greater likelihood of nonconcordant treatment, it is possible that poorly treated mental illness leads individuals to lose insurance coverage).

Third, we only examined the influence of some patient and health care system factors on the type of mental health care received, and did not have the ability to investigate other important factors such as those related to providers. In the absence of such information, it is difficult to determine the degree to which nonconcordant treatments are due to clinicians (e.g., not initiating treatments or not prescribing them for adequate durations or intensity) or to patients (e.g., not adhering to treatments). Finally, although it is possible to compare results from the MIDUS study with results from earlier surveys, it is difficult to determine the degree to which methodologic differences between studies versus true temporal changes underlie observed differences in mental health care.

Despite these potential limitations, the results of this

study provide evidence of the continuing challenges faced by those with mental illness and those who deliver or seek to improve mental health care in the United States. Despite the availability of an increasing number of effective treatments, many of those with common mental disorders fail to receive at least some form of mental health care. In addition, there are the enormous challenges of improving the quality of treatments and adherence to treatments, tasks made more difficult by limited health care resources. Future studies will need to focus on increasing our understanding of modifiable factors contributing to substandard treatment of mental illnesses, including clarifying why race, gender, insurance status, severity of mental illness, and comorbid physical illness are related to the quantity and guideline concordance of the mental health care received. Such information will be crucial for designing and targeting cost-effective interventions that improve treatment access, treatment quality, and ultimately the health outcomes of those with mental illnesses.

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