The Quality of Care for Depressive and Anxiety Disorders in the United States

Alexander S. Young, MD, MSHS; Ruth Klap, PhD; Cathy D. Sherbourne, PhD; Kenneth B. Wells, MD, MPH

Background: Depressive and anxiety disorders are prevalent and cause substantial morbidity. While effective treatments exist, little is known about the quality of care for these disorders nationally. We estimated the rate of appropriate treatment among the US population with these disorders, and the effect of insurance, provider type, and individual characteristics on receipt of appropriate care.

Methods: Data are from a cross-sectional telephone survey conducted during 1997 and 1998 with a national sample. Respondents consisted of 1636 adults with a probable 12-month depressive or anxiety disorder as determined by brief diagnostic interview. Appropriate treatment was defined as present if the respondent had used medication or counseling that was consistent with treatment guidelines.

Results: During a 1-year period, 83% of adults with a probable depressive or anxiety disorder saw a health care provider (95% confidence interval [CI], 81%-85%) and 30% received some appropriate treatment (95% CI, 28%-33%). Most visited primary care providers only. Appropriate care was received by 19% in this group (95% CI, 16%-23%) and by 90% of individuals visiting mental health specialists (95% CI, 85%-94%). Appropriate treatment was less likely for men and those who were black, less educated, or younger than 30 or older than 59 years (range, 19-97 years). Insurance and income had no effect on receipt of appropriate care.

Conclusions: It is possible to evaluate mental health care quality on a national basis. Most adults with a probable depressive or anxiety disorder do not receive appropriate care for their disorder. While this holds across diverse groups, appropriate care is less common in certain demographic subgroups.

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DEPRESIVE AND anxiety disorders are common and have a substantial impact on functioning and quality of life. National treatment guidelines for major depression document that effective treatments include antidepressant medications and cognitive-behavioral and interpersonal psychotherapies.1-3 Research also supports the efficacy of these treatments for dysthymia, although the literature is less well developed.4-6 In panic disorder, treatment guidelines strongly support the efficacy of cognitive-behavioral psychotherapies, some antidepressant medications, and benzodiazepines.7,8 In generalized anxiety disorder (GAD), effective treatments include antidepressant medications, buspirone, benzodiazepines, cognitive-behavioral psychotherapies, and probably relaxation and unstructured therapy techniques.9-13 Although these treatments are effective, patients frequently do not receive them.14 However, there have been few national studies of the quality of mental health care. Researchers have successfully characterized national quality of care for a variety of medical disorders,15 and it is important to know whether similar research in psychiatry can provide data to inform policy nationally. While the existing literature suggests that quality of care for common psychiatric disorders is moderate to poor across different types of treatment settings, national data are limited and not clinically detailed, and it is unclear which populations are at greatest risk for not receiving appropriate care.

The National Comorbidity Survey (NCS) surveyed a household probability sample of persons between ages 14 and 55 years, and found that 27.7% of those with major depression and 26.0% of those with dysthymia reported receiving outpatient mental health services,16 while 35.2% with panic disorder and 31.8% with GAD reported receiving such services. Although rates of use of antidepressant medication were low for persons with major depres-
MATERIALS AND METHODS

SAMPLE

The sample is from HealthCare for Communities (HCC), which is part of the Robert Wood Johnson Foundation's Health Tracking Initiative. Data are from the HCC telephone survey, which was conducted during 1997 and 1998. The design of HCC is described in detail elsewhere. HealthCare for Communities respondents were a stratified probability sample of participants in the Community Tracking Study (CTS). The CTS was a nationally representative study of the US civilian, noninstitutionalized population during 1996 and 1997, with a response rate of 65%. The sampling strategy in HCC was designed to improve our ability to study people with low income and people with psychiatric disorders. This was done by oversampling individuals with the following characteristics: family income below $20000, high psychological distress (measured using 2 items from the 12-Item Short-Form Health Survey), or any mental health specialty visit during the prior year. Of the 14985 CTS respondents selected for HCC, 9385 were reinterviewed, for a response rate of 64%. Informed consent was obtained verbally before the interview. In analyses, we weighted the data to be representative of the population of the United States by using CTS data to adjust for probability of selection, unit nonresponse, and nontelephone households.

MEASURES

Data are from the HCC survey, with the exception of some insurance information and demographics from the CTS survey. Major depression, dysthymia, and GAD during the past year and lifetime mania were assessed using short-form versions of the Composite International Diagnostic Interview (CIDI), and are based on DSM-III-R criteria. Kessler and colleagues reported that the sensitivity and specificity of CIDI short-form relative to full CIDI diagnosis is excellent, with concordance ranging from 90% to 100%. Probable panic disorder was assessed using screening items from the CIDI, supplemented by additional items from the full battery that were modified for this study. To reduce potential false-positives on this instrument, for panic we required limitation in social or role functioning using 2 items from the 12-Item Short-Form Health Survey and 3 items from the Sickness Impact Profile. Substance abuse was assessed using the Alcohol Use Disorders Identification Test and items adapted from the CIDI. Chronic psychosis was assessed by asking respondents whether they had ever been told they had schizophrenia or schizoaffective disorder, or been hospitalized because of psychotic symptoms. Two hundred forty respondents met criteria for chronic psychosis or mania and were excluded from our analyses. Respondents were also asked whether, during the past year, they had a need for emotional or mental health help, and whether they had any of the following severe life difficulties: witnessing an assault, losing custody of children, or being homeless, sexually assaulted, incarcerated, or on parole or probation.

Use of health services during the prior 12 months was identified by self-report. Primary care provider (PCP) visits included visits, for any reason, to a primary care physician, family physician, general internist, nurse, physician assistant, or chiropractor. Mental health specialist visits included visits to a psychiatrist, psychologist, social worker, psychiatric nurse, or counselor, for “emotional or mental health problems.” Respondents provided daily dosage and duration of use for medications taken “at least several times a week for a month or more,” and reported on the number of counseling sessions with specialists. Counseling from PCPs was identified by asking whether the health care visit included at least 3 minutes of counseling regarding an “emotional, mental health, alcohol or drug problem.” Appropriate care for depressive and anxiety disorders was assessed for respondents with a probable disorder, and was defined as use of either appropriate psychotropic medication or appropriate counseling during the prior year and lifetime mania were assessed using short-form versions of the Composite International Diagnostic Interview (CIDI), and are based on DSM-III-R criteria. Kessler and colleagues reported that the sensitivity and specificity of CIDI short-form relative to full CIDI diagnosis is excellent, with concordance ranging from 90% to 100%. Probable panic disorder was assessed using screening items from the CIDI, supplemented by additional items from the full battery that were modified for this study. To reduce potential false-positives on this instrument, for panic we required limitation in social or role functioning using 2 items from the 12-Item Short-Form Health Survey and 3 items from the Sickness Impact Profile. Substance abuse was assessed using the Alcohol Use Disorders Identification Test and items adapted from the CIDI. Chronic psychosis was assessed by asking respondents whether they had ever been told they had schizophrenia or schizoaffective disorder, or been hospitalized because of psychotic symptoms. Two hundred forty respondents met criteria for chronic psychosis or mania and were excluded from our analyses. Respondents were also asked whether, during the past year, they had a need for emotional or mental health help, and whether they had any of the following severe life difficulties: witnessing an assault, losing custody of children, or being homeless, sexually assaulted, incarcerated, or on parole or probation.

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and, overall, the probability of receiving appropriate care. We also analyze the effect of demographic factors, insurance type, and provider visits on receipt of appropriate treatment.

RESULTS

There were 174 respondents with dysthymia alone, 831 with major depression alone, and 317 with both disorders. There were 139 respondents with panic disorder alone, 146 with GAD alone, and 29 with both anxiety disorders. In total, 1636 respondents met criteria for 1 or more depressive or anxiety disorders, and Table 1 presents the characteristics of these individuals. Compared with other persons, individuals with a depressive or anxiety disorder were significantly more likely to be female, unmarried, unemployed, and to have problems with drugs or alcohol (P<.0001, for each comparison). They also had significantly fewer years of education, lower family income, more life difficulties and chronic medical disorders, and were more likely to have no medical insurance (P<.0001 for each comparison). While respondents provided information on medical insurance, they were often unaware of their specific mental health benefits, and hence this could not be assessed.

VISITS TO PROVIDERS AND USE OF MENTAL HEALTH TREATMENTS

During a 1-year period, 80.8% of individuals with a probable anxiety or depressive disorder saw a PCP. While 19.4% had seen a mental health specialist, only 1.9% saw a specialist without seeing a PCP. Primary care provider contact was most common with the anxiety disorders, and specialist contact was most common when both anxiety and depressive disorders were present (Table 2). Although provider visits were common, receipt of mental health treatment was not. Among individuals with a probable disorder, 25.6% received some antidepressant or anxiolytic medication, and 20.6% received appropriate medication; 31.3% received some counseling, and 17.6% received appropriate counseling. In all, 30.4% received

STATISTICAL ANALYSES

Estimates were calculated using SUDAAN software, and take into account the complex survey design and survey clustering. Differences between percentages were evaluated using Wald statistics converted to F statistics. Multiple logistic regression was used to examine the effect of individual, illness, and insurance characteristics on both use of services and receipt of appropriate care. The population for all the main models consisted of individuals with probable depression, dysthymia, panic, or GAD. Dependent variables were dichotomous, and indicated the presence of at least 1 service or appropriate care. Independent variables were the same in each model, and included age, sex, ethnic group, marital status, years of education, income, number of chronic medical disorders, and presence of a severe life difficulty or alcohol or other drug problem. Primary medical insurance was entered into the models as one of the following private health maintenance organization, other private insurance, Medicare, Medicaid, uninsured, or other/unknown. Physical and mental health functioning scores from the 12-Item Short-Form Health Survey were included in the models to control for severity of illness. We calculated standardized predictions for variables in the models by computing the average predicted probabilities of obtaining quality care, controlling for other covariates, within sample subgroups of interest.

We examined the sensitivity of our approach to changes in the methods used to identify appropriate treatment. To do this, we developed alternative regression models that had the same independent and dependent variables, but examined a somewhat different population. First, since our main method could have included respondents with mild illnesses, we restricted the population identified as having a disorder to individuals with a limitation in social or role functioning (as defined above). Second, since our main method may have missed individuals who did not meet requirements for illness during the past year because of successful treatment, we expanded the population identified as having a disorder to include all individuals taking antidepressant medication.

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at least 1 appropriate treatment for their disorder (95% CI, 27.7%-33.1%). The highest rates of treatment were found in people with both an anxiety and a depressive disorder.

**FACTORS AFFECTING PROVIDER CONTACT AND TREATMENT QUALITY**

Within people with a depressive or anxiety disorder, provider contact was significantly more likely among individuals with more years of education or a greater number of medical disorders, and was less likely among individuals with no medical insurance (Table 3). On the other hand, receipt of appropriate care was strongly influenced by demographic factors and not by presence or type of insurance. As shown in Table 3, receipt of appropriate care was affected by the same factors in people who had seen a provider as in the general population. Specifically, the odds of receiving appropriate care varied significantly by sex, ethnicity, age, and years of education, but not by income or insurance. The standardized prediction of appropriate care was 33% for women, 26% for men, 34% for whites, 24% for Hispanics, and 17% for blacks. In terms of age, older and younger people were both less likely to receive appropriate care. The standardized prediction of appropriate care was 20% for ages 18 to 29 years, 37% for ages 30 to 39 years, 32% for ages 40 to 49 years, 37% for ages 50 to 59 years, and 22% for 60 years and older.

Overall, poor-quality care (defined as no care or inappropriate care) was quite common. Poor-quality care occurred in 80.5% of individuals with PCP visits only (95% CI, 77.3%-83.8%), 11.4% of individuals with mental health specialist visits only (95% CI, 0.0%-24.7%), and 10.1% of individuals with both types of visits (95% CI, 5.1%-15.2%). Within patients seeing PCPs, those receiving poor-quality care were less likely to report that mental health problems were evaluated (35.6% vs 65.3%, P < .0001), psychiatric medications were recommended (11.4% vs 55.7%, P < .0001), or a referral to a mental health specialist was made (4.1% vs 23.5%, P < .0001). The overall population with poor-quality care was much less likely to perceive a need for mental health care (31.4% vs 70.0%, P < .0001).

**COMMENT**

This project indicates that it is possible to nationally evaluate and monitor treatment quality for psychiatric conditions, just as quality has been evaluated in other medical disorders. When care is examined, the rate of access to appropriate treatment for depressive and anxiety disorders is quite low, under 35% for the US adult population with a disorder, although closer to 50% for those with both types of disorder. These findings reflect practice and utilization patterns in 1997 and 1998, well within the era of newer antidepressant medications and widespread dissemination of managed care in primary and specialty care. The substantial problems with access to mental health treatment, and the rate of poor-quality care, are not likely to have changed much since then.
The policy significance of our findings is enhanced by identification of individuals at highest risk for not receiving appropriate care for a depressive or anxiety disorder. A large amount of the literature suggests that the effect of insurance on quality is inconsistent.46 We found that insurance had a significant effect on whether an individual would see a provider, but no effect on whether appropriate care would be received. In part, this may have occurred because most visits were in primary care, where the rate of appropriate treatment was low. We were unable to evaluate generosity of specific coverage for mental health services because people were too uncertain about this aspect of their insurance. This is an important area for further study. In any case, our findings suggest that quality problems exist across insurance types and the uninsured. This is consistent with previous studies suggesting that simply providing insurance is unlikely to substantially improve rates of appropriate care in people with mental health disorders.47 Rather, quality improvement programs may need to be implemented within various types of insurance programs and in the public sector to enhance awareness and utilization of appropriate treatment options.

Unlike insurance, demographic factors had little effect on whether an individual would see a provider, but a large effect on whether appropriate care would be received. For instance, despite the fact that blacks are as likely as whites to see a provider, they are significantly less likely to receive appropriate care. This ethnic disparity in quality of care is similar to findings for a variety of other medical conditions.48 Overall, groups at very high risk include men, blacks, older adults, young adults, and people with less than a high school education. Our findings are consistent with numerous studies showing that women are much more likely than men to use outpatient mental health services.49 We also find that lower socioeconomic status is strongly associated with not receiving appropriate care even among persons receiving health care. In fact, 76% of individuals with poor-quality care had seen a health care professional during a 1-year period. Most had been seen in primary care settings, making these promising locations for identifying individuals who could benefit from treatment. While the chances of appropriate care are much higher for individuals who have mental health specialist contact, these are probably individuals who are more accepting of psychiatric diagnosis and treatment. We found that persons not receiving appropriate care were much less likely to think they needed treatment occur even among persons receiving health care. However, people were too uncertain about this aspect of their insurance. This is an important area for further study. In any case, our findings suggest that quality problems exist across insurance types and the uninsured. This is consistent with previous studies suggesting that simply providing insurance is unlikely to substantially improve rates of appropriate care in people with mental health disorders.47 Rather, quality improvement programs may need to be implemented within various types of insurance programs and in the public sector to enhance awareness and utilization of appropriate treatment options.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Had Contact With a Health Care Provider During the Past Year (N = 1542), OR (95% CI)</th>
<th>Received Appropriate Care, † OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>National Population With Provider Contact (N = 1396)</td>
<td>National Population (N = 1537)</td>
</tr>
<tr>
<td>Age:</td>
<td></td>
<td></td>
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<tr>
<td>Decades</td>
<td>1.64 (0.90-2.99)</td>
<td>3.84 (1.99-7.40)</td>
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<tr>
<td>Decades squared</td>
<td>0.95 (0.89-1.02)</td>
<td>0.86 (0.80-0.92)</td>
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<tr>
<td>Female sex</td>
<td>1.27 (0.87-1.87)</td>
<td>1.52 (1.03-2.23)</td>
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<tr>
<td>Ethnic group</td>
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<tr>
<td>White</td>
<td></td>
<td></td>
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<tr>
<td>Black</td>
<td>0.60 (0.36-1.01)</td>
<td>0.44 (0.26-0.73)</td>
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<tr>
<td>Hispanic</td>
<td>0.90 (0.46-1.76)</td>
<td>0.60 (0.32-1.12)</td>
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<td>Other</td>
<td>1.13 (0.42-3.04)</td>
<td>0.54 (0.26-1.13)</td>
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<td>Married/living with a partner</td>
<td>1.05 (0.72-1.52)</td>
<td>0.86 (0.56-1.32)</td>
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<td>Education, y</td>
<td>1.25 (1.14-1.37)</td>
<td>1.07 (1.00-1.14)</td>
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<td>Family income, §§</td>
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<tr>
<td>Dichotomous (0 or &gt;0)</td>
<td>1.40 (0.08-24.00)</td>
<td>0.19 (0.01-6.35)</td>
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<td>Log transformed</td>
<td>1.10 (0.91-1.31)</td>
<td>1.05 (0.80-1.38)</td>
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<td>Primary medical insurance</td>
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<td>Private, non-HMO</td>
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<td>Private, HMO</td>
<td>0.84 (0.48-1.48)</td>
<td>1.06 (0.69-1.62)</td>
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<td>Medicare</td>
<td>1.14 (0.47-2.75)</td>
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<td>Medicaid</td>
<td>0.50 (0.24-1.06)</td>
<td>1.20 (0.60-2.38)</td>
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<tr>
<td>No insurance</td>
<td>0.46 (0.25-0.82)</td>
<td>1.11 (0.57-2.15)</td>
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<td>Other or unknown</td>
<td>0.48 (0.22-1.04)</td>
<td>1.46 (0.53-4.05)</td>
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<td>Life difficulties, No.</td>
<td>1.42 (0.78-2.58)</td>
<td>1.67 (0.95-2.95)</td>
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<td>Chronic medical disorders, No.</td>
<td>1.31 (1.14-1.50)</td>
<td>1.09 (1.00-1.19)</td>
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<td>Alcohol or other drug problem</td>
<td>0.71 (0.42-1.18)</td>
<td>1.39 (0.84-2.28)</td>
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<td>12-item Short-Form Health Survey</td>
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<td></td>
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<tr>
<td>Physical scale score</td>
<td>1.02 (0.99-1.05)</td>
<td>0.98 (0.95-1.01)</td>
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<tr>
<td>Mental scale score</td>
<td>1.01 (0.98-1.04)</td>
<td>0.98 (0.95-1.00)</td>
</tr>
</tbody>
</table>

*OR indicates odds ratio; CI, confidence interval; HMO, health maintenance organization; and ellipses, the omitted dummy variable.
†For the definition of appropriate care, please see the “Materials and Methods” section.
§Income was entered as both dichotomous and log-transformed, since the original income variable was not normally distributed.
receiving appropriate care. These risk factors hold in both 
in the general population and in the population that sees 
a health care provider. Our findings emphasize the sali-
ence of the surgeon general's current efforts to redress 
differences in quality of care for major disease condi-
tions based on socioeconomic or ethnic status differ-
cences, and suggest that major psychiatric conditions 
should be considered for such an effort.

An encouraging finding was that when an antide-
pressant or anxiolytic medication is used, it is often used 
at a dosage and duration that may be effective. This sug-
gests that the main problem is identifying those in need, 
offering them appropriate care, and helping them ac-
cpt this care. This represents a change from the 1980s, 
and may be because of the widespread availability of se-
lective serotonin reuptake inhibitor medications that are 
relatively easy to use at an effective dosage. Indeed, we 
found that selective serotonin reuptake inhibitors now 
account for 56% of all antidepressant medications used 
for depression and anxiety, and are usually prescribed 
at an adequate dosage. For counseling, there was a greater 
difference between using any counseling and receiving 
appropriate care, with less than half of those with any 
counseling receiving at least 4 sessions. With benefits de-
clining and behavioral managed care becoming more 
prevalent, it may be more difficult to obtain more than a 
few visits, or there may be other barriers such as pa-
tients not perceiving a need for ongoing counseling or 
experiencing financial barriers, such as copays.

One limitation of this study is that we used a brief di-
agnostic screening instrument to identify people with a prob-
able disorder. Indeed, brief measures are required when 
implementing quality assessment in large national samples. 
A recent study compared a similar brief diagnostic assess-
ment with a structured, clinical assessment, and found that 
the brief assessment was highly specific, though not very 
sensitive. Therefore, one would expect that most of 
the people we identified had, in fact, a depressive or anxiety 
disorder. Also, to examine the sensitivity of our approach 
to variation in severity of illness, we reran the model pre-
dicting appropriate care after confining the population to 
those with a functional limitation (n = 1201). In the popu-
lation with a depressive or anxiety disorder plus a func-
tional limitation, the positive predictive value of our screen-
ers should be even higher (and need for treatment quite 
certain). The only substantive difference between this model 
and the main model was that that having a chronic medi-
cal disorder was more strongly associated with receiving 
appropriate care. Finally, the Partners in Care Study ex-
amed persons who met screening criteria for probable 
medicating disorder but did not have current disorder based 
on full diagnostic assessment, and found that their out-
comes improved with a quality improvement program. 
Thus, rates of treatment among a broader at-risk sample 
are meaningful to practice policy.

Our use of a cross-sectional strategy to select individ-
uals with a disorder means that we cannot distin-
guish chronic refractory illness from incident condi-
tions, or identify people who were successfully treated 
more than a year before the interview, and had no symp-
toms for the past year because of continued treatment. 
To examine the effect that this may have had, we ran sen-
sitivity analyses in a population that included people 
with a depressive or anxiety disorder plus people who 
had no disorder but were using antidepressant medica-
tion. Using this alternative approach, the rate of appro-
priate care increased from 30.4% to 40.2%, but predic-
tors of appropriate care did not change.

It is noteworthy that we found low rates of appro-
priate care, even though we used a generous definition 
of appropriate counseling, requiring only 4 professional 
visits and only 5 minutes of discussion in a primary care 
visit. We were unable to measure the content of coun-
seling visits or to reliably identify specific forms of ef-
fective treatments. Indeed, a criterion standard for de-
fining effective counseling in the context of usual practice 
does not exist. Also, our reliance on self-report of ser-
vice use could have led to underreporting or misreport-
ing of medication usage or counseling. However, our 
model was robust to variation in our assumptions, and 
our major findings were determined mostly by the pres-
ence of any potentially effective treatment. Also, the 
method we used to measure appropriateness is very simi-
lar to that used in the Medical Outcomes Study, which 
demonstrated that this definition of treatment appropri-
ateness affects outcomes.

Another potential limitation of this study is that the 
accuracy of the results may have been affected by the re-
response rate, which is compounded by the initial re-
response rate in CTS. We adjusted our findings statisti-
cally for response using detailed CTS information on 
nonrespondents. While we cannot know the extent to 
which this adjustment was successful, features of our find-
ings are consistent with prior research. Compared with 
NCS, we found similar prevalence estimates for disor-
ders, similar rates of treatment utilization in anxiety, and 
modestly higher rates of treatment utilization in depres-
ion. In primary care, we found rates of mental health 
treatment use that are similar to those reported by the 
Medical Outcomes Study using 1980s data.

Many factors can contribute to why people who need 
care do not receive it. These include, for instance, per-
ceived need, willingness to accept care, insurance cover-
age, detection by providers, and knowledge and beliefs of 
providers regarding effective treatment. Findings from this 
study support efforts to improve care through either pub-
lic education or quality improvement interventions. Re-
cent research suggests that while a majority of the public 
identifies major depression as a mental illness, psychiatric 
disorders continue to be strongly stigmatized. We found 
that people not receiving appropriate care were much less 
likely to have had their mental health problems evalu-
ated, and much less likely to believe they needed mental 
health treatment. Public and patient education efforts are 
needed to increase the extent to which people value treat-
ment for common psychiatric disorders and demand ap-
propriate care. Quality improvement efforts should focus 
on strategies that bring effective treatments to people— 
whether through improving practice infrastructure, en-
hancing benefit design, or implementing outreach pro-
grams. Clinical research has made substantial progress in 
establishing efficacious treatments, and progress must now 
proceed on dissemination to the public, especially for vul-
nerable subpopulations.


