

## ORIGINAL ARTICLES

## Physician Office Visits of Adults for Anxiety Disorders in the United States, 1985–1998

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**OBJECTIVE:** To determine the number of physician office visits by adults in which an anxiety disorder diagnosis was recorded and rates of treatment during these visits.

**DESIGN:** We used data from the 1985, 1993, 1994, 1997, and 1998 National Ambulatory Medical Care Surveys, which is a nationally representative series of surveys of office-based practice employing clustered sampling.

**SETTING:** Office-based physician practices in the United States.

**PARTICIPANTS:** A systematically sampled group of office-based physicians.

**RESULTS:** The number of office visits with a recorded anxiety disorder diagnosis increased from 9.5 million in 1985 to 11.2 million per year in 1993–1994 and 12.3 million per year in 1997–1998, representing 1.9%, 1.6%, and 1.5% of all office visits in 1985, 1993–1994, and 1997–1998, respectively. The majority of recorded anxiety disorder diagnoses were not for specific disorders, with 70% of anxiety disorder visits to primary care physicians coded as “anxiety state, unspecified.” Visits to primary care physicians accounted for 48% of all anxiety disorder visits in 1985 and 1997–1998. Treatment for anxiety was offered in over 95% of visits to psychiatrists but in only 60% of visits to primary care physicians. Primary care physicians were less likely to offer treatment for anxiety when specific anxiety disorders were diagnosed than when “anxiety state, unspecified” was diagnosed (54% vs 62% in 1997–1998). Prescriptions for medications to treat anxiety disorders increased between 1985 and 1997–1998 while use of psychotherapy decreased over the same time period in visits to both primary care physicians and psychiatrists.

**CONCLUSIONS:** Although there is a large number of office visits with a recorded anxiety disorder diagnosis, under-recognition and under-treatment appear to be a continuing problem, especially in the primary care sector. Medication is being substituted for psychotherapy in visits to both psychiatrists and primary care physicians over time.

**KEY WORDS:** anxiety disorders; primary care; treatment rates. *J GEN INTERN MED* 2002;17:165–172.

Anxiety disorders are the most prevalent psychiatric disorder in the United States. Estimates of lifetime prevalence range from 15% to 25%.<sup>1,2</sup> Anxiety disorders have a significant negative impact on quality of life and psychosocial functioning.<sup>3</sup> Moreover, anxiety disorders are frequently associated with depression, suicide,<sup>4</sup> alcohol and drug abuse,<sup>5</sup> the development and worsening of cardiovascular disease,<sup>6</sup> and substantially higher rates of health services utilization,<sup>1</sup> particularly when unrecognized.<sup>7</sup> As a result, these conditions are associated with significant direct and indirect economic costs.<sup>8,9</sup> The total cost of anxiety disorders in 1990 was estimated to be between \$42.3 billion<sup>9</sup> and \$46.6 billion,<sup>8</sup> representing 31.5% of total expenditures for mental illness. The majority of these costs are indirect costs due to lost or reduced work productivity.<sup>8,9</sup>

Given the economic costs and the negative impact on quality of life associated with anxiety disorders, treatment is a priority, especially with the advent of efficacious pharmacotherapy and psychotherapy. However, there is evidence that these disorders are underdiagnosed and undertreated.<sup>10</sup> Using data from the National Ambulatory Medical Care Survey (NAMCS), Skaer et al.<sup>11</sup> examined trends in diagnosis of anxiety disorders, finding that there was no change in the rate at which anxiety disorder diagnoses were recorded during office visits between 1990 and 1997. However, they only examined the diagnoses of panic disorder, generalized anxiety disorder, and unspecified anxiety disorder and did not include diagnoses relating to phobias, obsessive-compulsive disorder, and posttraumatic stress disorder.

To better understand the burden of anxiety disorders in the United States as well as rates of treatment in office-based physicians' practices and trends over time, we analyzed data from multiple years of the NAMCS. We estimated the total number of office visits in the United States in which an anxiety disorder was diagnosed between 1985 and 1998. We hypothesized that the percentage of such visits would increase over time as physician and patient awareness of anxiety disorders has increased. We also examined the care sector in which

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treatment for anxiety disorders was delivered and whether it changed over time. We hypothesized that treatment for anxiety disorders would increasingly take place in the primary care sector, in part due to the increasing role of managed care and the restrictions on access to mental health specialists that managed care plans often implement. Finally, we calculated the proportion of visits in which medications and/or psychotherapy were provided during visits with a recorded anxiety disorder diagnosis. We hypothesized that pharmacotherapy would increase over time while psychotherapy would decrease, due to change in locus of treatment from the mental health sector to the primary care sector, the availability of selective serotonin reuptake inhibitors (SSRIs) that are effective in treating each of the anxiety disorders, and cost containment pressures.

## METHODS

### Data

We analyzed data from the 1985, 1993, 1994, 1997, and 1998 NAMCS. The NAMCS, conducted every year by the National Center for Health Statistics (NCHS), samples a nationally representative group of visits to physicians in office-based practices. Visits to physicians in the specialties of anesthesiology, pathology, and radiology, ambulatory encounters made by telephone, encounters made outside of the physician's office, and encounters made in hospital ambulatory care centers and other institutional settings are not included in the sample. Visits to non-physician providers, such as psychologists, social workers, and case managers also were not included in the sample. Physicians were asked to record information on visits made over a randomly selected 1-week period during the year. For each office visit, the survey provided information on physician specialty, up to 3 diagnoses, and up to 6 medications prescribed during the visit. Depending on the size of the practice, the proportion of visits sampled during the 1-week period ranged from 100% to 20%. A thorough description of the survey and sampling design is provided elsewhere.<sup>12</sup>

The NAMCS sample included 71,594 visits in 1985. To increase power, data from 1993 and 1994 and those from 1997 and 1998 were combined. There were a total of 69,576 visits in the 1993–1994 sample and 48,054 visits in the 1997–1998 sample. The response rate was similar for all years, ranging from a low of 68% in 1998 to a high of 73% in 1993. Although the NAMCS sample includes visits by patients of all ages, we limited our analysis to physician office visits made by adults.

### Anxiety Disorder Visits

Identification of visits by patients with anxiety disorders was based on diagnoses assigned by physicians during the visit using the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM).<sup>13</sup>

Anxiety disorder visits included visits with ICD-9 codes 300.00 (anxiety state, unspecified), 300.01 (panic disorder), 300.02 (generalized anxiety disorder), 300.09 (other anxiety state), 300.20 (phobia, unspecified), 300.21 (agoraphobia with panic attacks), 300.22 (agoraphobia without mention of panic attacks), 300.23 (social phobias), 300.29 (other isolated or simple phobias), 300.3 (obsessive-compulsive disorder), 308 (acute reaction to stress), 309.24 (adjustment reaction with anxious mood), 309.28 (adjustment reaction with mixed emotional features), and 309.81 (prolonged post-traumatic stress disorder). There were 1,052 visits in the NAMCS sample with an anxiety disorder diagnosis in 1985, 1,114 visits in 1993–1994, and 886 visits in 1997–1998.

### Demographic Variables

Physicians recorded patient age at the time of the visit. We categorized age in years into 4 groups: 18 to 34, 35 to 49, 50 to 64, and 65 and over. We categorized visits by race into 2 groups: African American and non-African American. Visits were also classified by ethnicity, defined as Hispanic or not Hispanic. Visits were classified into urban or rural categories depending upon the location at which services were received using the definition of a Metropolitan Statistical Area as defined by the Bureau of the Census and the U.S. Office of Management and Budget.

### Medications

For visits by patients with a recorded anxiety disorder diagnosis, we identified visits in which a medication used to treat anxiety was prescribed, supplied, administered, ordered, or continued. This included all antianxiety agents (benzodiazepines and buspirone) and all antidepressants. Drugs included in the class of antianxiety agents were alprazolam, buspirone, chlordiazepoxide, clorazepate, diazepam, halazepam, lorazepam, and oxazepam. Antidepressant drugs were classified into 3 categories: atypical antidepressants, SSRIs, and tricyclic antidepressants (the tricyclic antidepressant group also includes tetracyclic antidepressants and monoamine oxidase inhibitors). Drugs included in the class of atypical antidepressants were bupropion, mirtazapine, nefazodone, trazodone, and venlafaxine. Drugs included in the class of SSRIs included fluoxetine, fluvoxamine, paroxetine, and sertraline. Drugs included in the class of tricyclic antidepressants included amitriptyline, amoxapine, clomipramine, desipramine, doxepin, imipramine, isocarboxazid, maprotiline, nortriptyline, phenelzine, protriptyline, tranlycypromine, and trimipramine.

### Medical Specialties and Physician-patient Relationship

Physicians were classified into 3 mutually exclusive groups: psychiatrists; primary care physicians (includes general practice, family practice, and internal medicine);

and other specialists. Visits were classified as either a visit in which the physician had seen the patient before or a visit in which the physician had never seen the patient before (new patient).

## Psychotherapy

For the 1985, 1997, and 1998 NAMCS surveys, psychotherapy visits were identified by the response to the survey question "Was psychotherapy provided or ordered during this visit?" We did not include measures of psychotherapy for 1993–1994, because this question was not included in the 1993–1994 surveys.

## Type of Reimbursement/Insurance Category

The NAMCS data include information on the expected source of payment for the visit. For this analysis, we classified visits as prepaid if the expected source of payment was HMO/prepaid and as fee-for-service otherwise. We also classified visits by type of insurance, identified as Medicaid, Medicare, private insurance, or all other insurance (e.g., workers compensation, self-pay).

## Statistical Methods

The goals of this analysis were to provide national estimates of the number of office visits in which an anxiety disorder diagnosis was recorded, the rate at which treatment was offered during those visits, and the proportion of visits for anxiety disorders that occur in each physician care sector. The NCHS includes weights in the NAMCS to enable the sample to represent all office visits in the United States. The total number of office visits with a recorded anxiety disorder diagnosis is presented in bivariate tables using these sampling weights. Because the estimates from 1993–1994 and 1997–1998 were based on combined years, the estimates represent the annualized mean of 2 survey years. To determine whether differences in the rate of anxiety disorder visits by age, gender, race, etc. were statistically significant,  $\chi^2$  tests were used with the sample weights reduced by the proportion needed to downweight the sample to the size of a simple random sample with the same variance.<sup>14</sup> The sample weights were downweighted only to determine the statistical significance; the number of visits presented in the results was not obtained using downweighted weights. This downweighting strategy has previously been used with NAMCS data.<sup>15</sup> The reduced sample size was determined by adjusting the weight by a constant factor equal to the sum of the poststratification weights provided by the NCHS divided by the sum of the squared weights  $\left(\frac{\sum w_i}{\sum w_i^2}\right)$ . Each individual visit weight was then multiplied by the weight adjustment. This downweighting procedure effectively reduced the size of the sample by approximately one half. Significant differences were identified using  $\chi^2$  statistics with a 2-tailed cutoff of  $P = .001$ .

## RESULTS

The estimated total number and rate of visits with an anxiety disorder diagnosis are presented in Table 1. Using the weights provided by the NCHS, there were an estimated 9.53 million office visits in which an anxiety disorder diagnosis was recorded in 1985. There were an estimated 11.21 million office visits per year with a recorded anxiety disorder diagnosis in 1993–1994 and approximately 12.27 million office visits per year in 1997–1998. This represents 1.9% of all office visits in 1985, 1.6% of visits in 1993–1994, and 1.5% of visits in 1997–1998. Anxiety disorder diagnoses tended to be nonspecific, with 64% of all anxiety disorder visits classified as "anxiety state, unspecified" in 1985, dropping to 54% by 1993–1994, and 46% by 1997–1998. Primary care physicians tended to be the least specific with anxiety disorder diagnoses, assigning "anxiety state, unspecified" to 84% of anxiety disorder visits in 1985, 77% in 1993–1994, and 70% in 1997–1998. The rates of recorded diagnoses for specific anxiety disorders are presented in Figure 1.

There were considerable variations in the rate at which anxiety disorder diagnoses were recorded during office visits. For instance, in 1997–1998, anxiety disorder diagnoses were recorded during 1.6% of all office visits made by white patients as compared to 0.7% of all visits made by African-American patients ( $P < .001$ ). In 1997–1998, differences in visit rates for anxiety disorders were also observed by gender, ethnicity, geographic region, and type of insurance. Additionally, anxiety disorder diagnoses were recorded more often during visits in which the physician had seen the patient before (1.6% vs 0.7%,  $P < .001$ ). Finally, anxiety disorder diagnoses were far more likely to be recorded during office visits in which a depression diagnosis also was recorded (9.8% vs 1.3%,  $P < .001$ ).

We observed the proportion of all anxiety disorder visits that occurred by physician specialty (Fig. 2). During all 3 time periods, the plurality of visits for anxiety disorders took place in the primary care sector (visits to general/family practice and internal medicine physicians), and the proportion remained unchanged between 1985 and 1997–1998. Visits to psychiatrists accounted for 38.0%, 40.9%, and 41.9% of visits in 1985, 1993–1994, and 1997–1998, respectively.

We also examined the proportion of visits with an anxiety disorder diagnosis in which either an antidepressant or antianxiety prescription or psychotherapy was offered. Overall, physicians offered some form of treatment during 74% of visits in 1985 and during 73% of visits in 1997–1998. In 1985, psychotherapy was offered alone or in combination with medication during 48% of visits, but was offered in only 30% of visits in 1997–1998. Medication alone was offered during 25% of visits in 1985, increasing to 42% of visits in 1997–1998.

Treatment rates by physician specialty were also examined (Table 2). Psychiatrists offered some form of

Table 1. U.S. Office Visits with an Anxiety Disorder Diagnosis (AD Dx)

	1985		1993–1994		1997–1998	
	Visits Per Year, n*	Visits with AD Dx, %†	Visits Per Year, n*	Visits with AD Dx, %†	Visits Per Year, n*	Visits with AD Dx, %†
Total visits	9,533	1.91	11,210	1.60	12,265	1.52
Race						
Non-African American	8,791	1.96	10,290	1.67	11,330	1.64‡
African American	646	1.57	682	1.18	612	0.73
Gender						
Male	3,107	1.73	4,303	1.54	3,683	1.14‡
Female	6,425	2.02	6,905	1.65	8,580	1.77
Age, y						
18–34	2,667	1.75‡	2,689	0.96‡	3,007	0.98‡
35–49	3,368	3.17	4,117	2.90	4,366	2.62
50–64	1,962	1.82	2,431	2.19	2,464	1.74
65 and over	1,525	1.17	1,972	1.18	2,427	1.25
Ethnicity						
Hispanic	533	1.77	932	1.74	686	1.10‡
Not Hispanic	9,000	1.92	10,275	1.59	9,600	1.69
Region						
Northeast	2,711	2.80‡	3,792	2.29‡	3,608	2.10‡
South	2,617	1.54	2,982	1.43	3,193	1.16
Midwest	2,469	1.96	1,947	1.20	2,512	1.40
West	1,736	1.65	2,487	1.52	2,950	1.62
Insurance						
Medicare	1,508	1.44‡	2,029	1.49	2,319	1.44‡
Medicaid	841	2.44	1,335	1.89	706	1.04
Private	3,655	2.13	4,791	1.76	6,365	1.45
Other insurance	4,256	1.86	3,819	1.49	2,874	2.03
Managed care						
HMO/prepaid	781	1.84	1,400	0.98‡	3,185	1.36
Fee-for-service	8,752	1.92	9,810	1.76	8,085	1.62
Depression diagnosis						
Yes	1,016	9.86‡	1,543	8.14‡	2,321	9.76‡
No	8,516	1.75	9,665	1.42	9,945	1.27
Patient-provider relationship						
New patient	992	1.21‡	1,214	1.08‡	762	0.70‡
Seen patient before	8,541	2.05	9,957	1.70	11,435	1.64

\* Thousands of visits per year in which an anxiety disorder diagnosis was recorded.

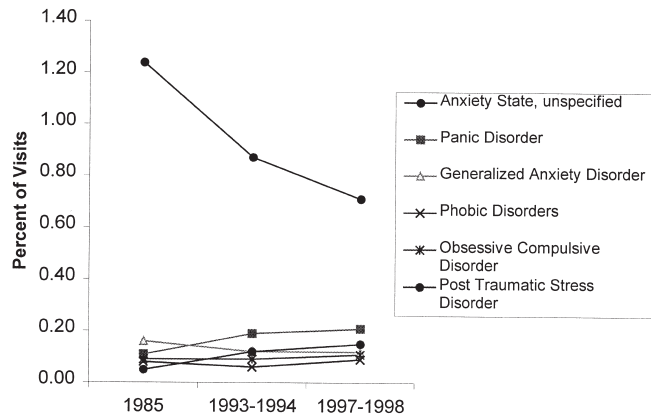
† Percent of visits with an anxiety disorder diagnosis in each category (e.g., in 1997–1998, of every 100 office visits made by white persons, 1.64 had an anxiety disorder diagnosis and of every 100 visits made by an African American, 0.73 had an anxiety disorder diagnosis).

‡ Within-group difference is statistically significant at  $P < .001$  (e.g., in 1997–1998, there was a significant difference in diagnosis rate by age). Data are from the 1985, 1993, 1994, 1997, and 1998 National Ambulatory Medical Care Surveys. Estimates of visits are obtained using weights provided by National Center for Health Statistics.

treatment during 97% of visits in 1985 and during 95% of visits in 1997–1998. However, rates of psychotherapy provided by psychiatrists dropped over this time period. In 1985, psychotherapy was provided alone or in combination with medication during 95% of visits, but it was provided in only 66% of visits in 1997–1998. The rate at which psychiatrists provided medication alone increased from 3% of visits in 1985 to 29% of visits in 1997–1998.

When office visits for anxiety disorders that take place in the primary care sector were examined, rates of treatment were much lower. No treatment was offered in over 40% of visits for both time periods. Medication without psychotherapy was offered during approximately 40% of visits in 1985, with psychotherapy offered alone or in combination with medication in approximately 20% of

visits. Although most primary care physicians recorded a diagnosis of “anxiety state, unspecified,” treatment rates were actually lower during visits in which a specific anxiety disorder diagnosis was recorded. In 1985, no treatment was offered in 38% of visits with an unspecified anxiety disorder diagnosis, while no treatment was offered in 58% of visits with a specific anxiety disorder diagnosis. Similarly, in 1997–1998, no treatment was offered in 38% of visits with an unspecified diagnosis and in 46% of visits with a specific anxiety disorder diagnosis. Although the NAMCS sample did not include enough visits to primary care physicians with specific anxiety disorder diagnoses to obtain stable estimates, it appears that by 1997–1998, primary care physicians were nearly always offering medication to treat panic disorder and generalized anxiety disorder, but were unlikely to treat any other specific



**FIGURE 1.** Proportion of visits with selected anxiety disorder diagnoses. Data are from the 1985, 1993, 1994, 1997, and 1998 National Ambulatory Medical Care Surveys using weights provided by the National Center for Health Statistics.

anxiety disorders. The rate at which medication was offered increased substantially by 1997–1998, when medication was offered in over half of all visits. However, psychotherapy rates decreased to less than 5% of all primary care physician office visits for anxiety disorders in 1997–1998.

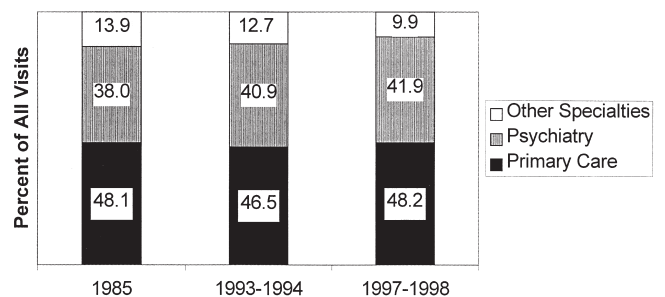
Treatment rates by all other physician specialists were examined, with treatment rates reflecting those of primary care physicians. No treatment was offered during 36% of visits in 1985 and during nearly 57% of visits in 1997–1998. Rates of treatment with medication alone were fairly constant over this time period at approximately 40%. However, there was a large reduction in the rate at which psychotherapy was offered alone or in combination with medication, dropping from 23% of visits in 1985 to 5% of visits in 1997–1998.

The increase in the use of medications over this time period was primarily due to the introduction of SSRIs and greater use of atypical antidepressants, with prescribing rates for antianxiety agents (benzodiazepines and buspirone), the most frequently prescribed medication in all 3 time periods, remaining relatively constant (Fig. 3). It appears that SSRIs were added to, rather than substituted for, antianxiety agents. SSRIs, which were not available in 1985, were prescribed during 17% of anxiety disorder visits in 1993–1994 and during 24.5% of visits in 1997–1998. Although SSRIs were not approved for treatment of anxiety disorders in 1993–1994, psychiatrists were likely to use these medications to treat anxiety disorders “off label.” Atypical antidepressants, which were prescribed during 1.5% of visits in 1985, were prescribed during 8.8% of visits in 1997–1998. Rates of prescribing for tricyclic and tetracyclic agents and monoamine oxidase inhibitors (TCAs) dropped over this period, with 14% of visits having a TCA prescription in 1985, but with only 7.1% of visits having a TCA prescription by 1997–1998.

**DISCUSSION**

These measures provide an estimate of the recognition and treatment of anxiety disorders in outpatient adult medical practice in the United States over time. While the total number of office visits with a recorded anxiety disorder diagnosis increased, the rate of office visits decreased slightly contrary to our hypothesis. Also, contrary to our hypotheses, visits for anxiety disorders did not shift from psychiatry to primary care and treatment rates did not significantly increase, but rather showed a shift from psychotherapy to pharmacotherapy.

There are undoubtedly many office visits for treatment of anxiety disorders and related symptoms in which an anxiety disorder diagnosis is not recorded. Given that the 12-month prevalence of anxiety disorders is approximately 17%<sup>2</sup> and that people with anxiety are higher utilizers of medical care, it is likely that the rate of 1.5% to 1.9% of office visits with anxiety disorders reflects a gross underdiagnosis of these disorders. For example, the prevalence of generalized anxiety disorder in primary care practice is estimated to be between 2.9% and 14.8%<sup>16–18</sup>; however, we found generalized anxiety disorder diagnoses to be recorded in less than 0.1% of all visits to primary care physicians in 1997–1998 and any anxiety disorder recorded in only 0.7% of these visits. The low rates of recorded diagnoses observed may be due to lack of recognition of these disorders by physicians, but also may be due to reimbursement issues or concerns over a patient’s willingness to be identified as having an anxiety disorder. Another possible explanation is that although patients see primary care physicians because they are anxious, they rarely see a primary care physician specifically for that reason. Patients may instead focus on somatic complaints, with primary care physicians addressing the somatic symptoms before the underlying anxiety is identified. Also, it may indeed be that the vast majority of diagnoses of “anxiety, unspecified” given by primary care physicians reflect either that most primary care patients with anxiety disorders do not have symptoms that fit neatly into a diagnosis such as generalized anxiety disorder or panic disorder, or that the current classification of anxiety



**FIGURE 2.** Proportion of anxiety disorder visits in each care sector. Data are from the 1985, 1993, 1994, 1997, and 1998 National Ambulatory Medical Care Surveys using weights provided by the National Center for Health Statistics.

**Table 2. Proportion of Anxiety Disorder Visits to Primary Care Physicians, Psychiatrists, and Other Specialist Physicians with Treatment in 1985 and 1997–1998\***

	1985				1997–1998			
	No Treatment	Medication Only	Psychotherapy Only	Both	No Treatment	Medication Only	Psychotherapy Only	Both
Primary care physicians	41.5	38.7	6.8	13.0	40.6	54.6	2.0	2.8
Psychiatrists	2.9	2.6	57.4	37.2	4.5	29.5	27.5	38.5
Other specialist physicians	36.4	40.4	12.6	10.7	56.7	38.1	2.5	2.7

\* Data are from the 1985, 1993, 1994, 1997, and 1998 National Ambulatory Medical Care Survey using weights provided by the National Center for Health Statistics. Medications include prescriptions for antianxiety agents, selective serotonin reuptake inhibitors, atypical agents, or tricyclic agents.

disorders is too complicated to be easily used by primary care doctors.

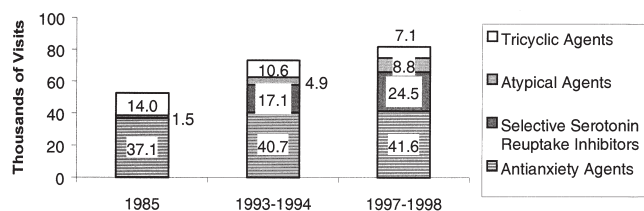
Significant differences in the rate of anxiety disorder diagnoses by race, age, and gender during office visits were observed during some of the observed years. Although some of this variability may be due to differences in unique prevalence rates, in many cases, dissimilar rates of diagnosis during office visits are probably due to factors other than underlying prevalence rates. The disparities may be due to providers' hesitancy to diagnose certain types of patients with anxiety disorders because of worries about stigma and other patient and provider attitudes.

Although we hypothesized that the majority of anxiety disorder visits would take place in psychiatrists' offices in 1985 and then shift toward the primary care sector over time, almost no shift in the locus of diagnosis of anxiety disorder visits was observed. Most of the educational efforts regarding mental health care over this period focused on depression, and it is likely that primary care physicians continued to lack the necessary knowledge to accurately diagnose anxiety disorders. Physicians may have, in fact, diagnosed individuals with anxiety disorders as having depression. There is a considerable amount of symptom overlap between anxiety disorders and depression. The high rate of presentation of individuals with anxiety disorders in primary care suggests that it is important for

primary care physicians to be aware of the symptoms of anxiety disorders as well as treatment management strategies. If the impact of anxiety disorders on society is to be lessened, effective treatment must be provided and diagnosis must be made in the sector of care in which people with anxiety disorders make contact with the health care system.

Better treatment can also be provided in primary care. No treatment is offered during 40% of anxiety disorder visits to primary care providers. This was the case in 1985 and continued to be the case in 1997–1998. These treatment rates are considerably lower than those found for depression, for which some form of treatment was offered during 82% of visits in 1996–1997.<sup>19</sup> Some physicians may prefer a course of watchful waiting for patients with milder cases of anxiety disorders, which may explain the lower rate of nontreatment among primary care physicians, who are more likely to see less severely impaired patients than psychiatrists. However, we found that primary care physicians were actually somewhat less likely to treat patients that they diagnose with specific anxiety disorders, providing evidence that they may not be well educated concerning treatment strategies for anxiety disorders, and choose a course of watchful waiting because they are not confident in their ability to treat anxiety disorders. More primary care physicians should consider referral to mental health specialists.

Although the rate at which medication is prescribed to treat anxiety disorders has increased markedly over this time period, it appears that medication is being substituted for psychotherapy by physicians, rather than reflecting an overall increase in the treatment rate. However, because the NAMCS sample does not capture visits by nonphysician providers, psychotherapy may be being provided in the nonphysician mental health sector. The increase in the use of medications is not surprising, given the increase in marketing by pharmaceutical companies to both physicians and patients since the advent of SSRIs. The highest rates of treatment with medication are seen in visits by patients with panic disorder or generalized anxiety disorder, the two anxiety disorders on which pharmaceutical companies have most focused their marketing efforts. The SSRIs also have fewer side effects and easier dosing than do



**FIGURE 3.** Types of medications prescribed during office visits with an anxiety disorder diagnosis. Data are from the 1985, 1993, 1994, 1997, and 1998 National Ambulatory Medical Care Surveys using weights provided by the National Center for Health Statistics. Tricyclic agents include tricyclic and tetracyclic agents and monoamine oxidase inhibitors. Antianxiety agents include benzodiazepines and buspirone.

tricyclic antidepressants, which may have increased primary care physicians' confidence in treatment of anxiety disorders with medication. Psychotherapy was provided or ordered in nearly half of all anxiety disorder visits in 1985, but in less than a third of such visits in 1997–1998. It is likely that appropriate medication is a more efficacious treatment for anxiety disorders than supportive psychotherapy. However, this may not be as true for targeted cognitive behavioral treatment. In fact, a marked shift in psychiatric practice occurred over this period, along with cost containment pressures and a larger role of managed care that is substituting less costly medications for expensive psychotherapy. Cognitive behavioral treatments proven efficacious for anxiety disorders are the least likely to be employed.<sup>20</sup>

Some limitations apply when interpreting the results. Because the unit of analysis is a physician office visit and not individual patients, our finding that treatment was offered in 73% of office visits for anxiety disorders should not be interpreted as meaning that 73% of patients with anxiety disorders received treatment for their symptoms. It simply means that when a physician recorded a diagnosis of an anxiety disorder during an office visit, some form of treatment was offered to that patient during the visit 73% of the time. Additionally, we identified treatment as being provided if an antidepressant prescription was provided. In some cases, the antidepressants may have been prescribed to treat comorbid depression and not the anxiety disorder. Also, only 3 diagnoses can be listed on the NAMCS patient record form. It is possible that anxiety disorder diagnoses were not recorded in many cases because the physician chose to record 3 other diagnoses that he or she felt to be more important. However, a third diagnosis was recorded in fewer than 20% of office visits, suggesting that this is not a serious problem.

Another limitation is that anxiety disorders were identified by office diagnosis and such diagnoses, even in the mental health sector, have low accuracy.<sup>20</sup> This is evident in the large number of visits with a diagnosis of "anxiety state, unspecified" as opposed to diagnoses corresponding to specific anxiety disorders. Moreover, this analysis also did not address the quality of care or adherence to care provided for anxiety disorders. Treatment was simply defined as a prescription for an antidepressant or antianxiety agent or psychotherapy. For medications, the dosage was not known, and it was not known whether the prescription was actually filled by the patient, or whether or not he or she took the medication. It was not known what type of psychotherapy the patient received or how many sessions the patient attended over what period of time. If a referral for psychotherapy was provided, it is not known whether that patient followed through. Additionally, the NAMCS only samples visits to physicians. Given that psychotherapy is often provided by nonphysicians, many office visits in which psychotherapy is provided are not captured in this sample. Thus, rates of use of psychotherapy are undercounted, with this dataset

only capturing psychotherapy provided or recommended by psychiatrists and other physicians.

Despite these limitations, it appears that anxiety disorders are under-recognized and under-treated by physicians, especially in the primary care sector. Additional research is necessary to further substantiate these findings and to assess the quality of care provided to individuals with anxiety disorders. Previous studies suggest that even when treatment is offered, the treatment is adequate only 30% of the time, and only 19% of the time if seen by a primary care physician.<sup>21</sup> Coupled with these results, our study suggests that interventions designed to improve recognition and treatment of anxiety disorders in the primary care sector, as well as increased referral of these patients to the specialty mental health care sector, are needed.

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