# Prevalence of Comorbid Anxiety Disorders in Primary Care Outpatients

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**Objective:** To estimate the extent to which anxiety disorders (eg, panic disorder, phobia, and generalized anxiety disorder [GAD]) co-occur in patients with major medical and psychiatric conditions.

**Design:** Observational study.

**Setting:** Offices of primary care providers in three US cities, with mental health specialty providers included for comparative purposes.

**Patients:** Adult patients (N=2494) with hypertension, diabetes, heart disease (congestive heart failure or myocardial infarction), current depressive disorder, or subthreshold depression.

**Measures:** Current (past 12 months) and lifetime panic disorder, phobia, GAD, perceived need for help for emotional or family problems, and unmet need (ie, failure to get help that was needed).

**Methods:** Comparisons of the prevalence of anxiety comorbidity in medically ill nondepressed patients of primary care providers and in depressed patients of both primary care and mental health specialty providers.

**Results:** Among primary care patients, those with chronic medical illnesses or subthreshold depression had low rates of lifetime (1.5% to 3.5%) and current (1.0% to 1.7%) panic disorder, but those with current depressive disorder had much higher rates (10.9% lifetime and 9.4% current panic disorder). Concurrent phobia and GAD were more common (10.4% to 12.4% current GAD), especially among depressed patients (25% to 54% current GAD). Depending on the type of medical illness or depression, 14% to 66% of primary care patients had at least one concurrent anxiety disorder. Patient-perceived unmet need for care for personal or emotional problems was high among all primary care patients (54.6% to 72.9%).

**Conclusion:** Primary care clinicians should be aware of the possible coexistence of anxiety disorders (especially GAD) among their patients with chronic medical conditions, but especially among those with current depressive disorder.

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ANXIETY disorders, including panic disorder, phobia, and generalized anxiety disorder (GAD), are associated with increased use of general health and mental health care services.[1-3] Anxiety disorders are often chronic in nature and are associated with high morbidity (eg, low levels of functioning and well-being).[4-6] Similar findings have recently been noted (C.D.S., K.B.W., L.S.M., C.A.J., P.C., unpublished data, 1990). When anxiety disorders occur in combination with other serious psychiatric and medical illnesses, the result may be even greater morbidity, service utilization, and social costs, in terms of unemployment and increased financial dependency. However, anxiety disorder often goes undetected and undertreated among patients in primary care settings.[7-9] In part, this may be because symptoms of anxiety disorder overlap with those of other common disease conditions that are more typically the focus of treatment in primary care. For example, patients who make somatized presentations to their primary care physicians appear to be less likely to have their psychiatric condition recognized than are patients who present with psychosocial problems.[9] Undiagnosed and untreated anxiety disorders may result in unnecessary medical consultations and diagnostic tests. Annual medical expen-

*See Practice Commentary at end of article*

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## PATIENTS AND METHODS

### STUDY DESIGN

The Medical Outcomes Study (MOS) is an observational study of adult outpatients who receive care in one of three health systems: health maintenance organizations; large, multispecialty group practices with mixed prepaid and fee-for-service coverage; and small, single-specialty group and solo practices with fee-for-service or prepaid coverage in three study sites (Boston, Mass; Chicago, Ill; Los Angeles, Calif).[26] Within each system of care, a representative sample of medical specialty physicians (general internists, family physicians, cardiologists, and endocrinologists), psychiatrists, psychologists, and other mental health providers was selected, and their patients were screened for one of four chronic conditions (coronary heart disease, hypertension, diabetes, or depression). The clinicians were between ages 31 and 55 years, were board-eligible/certified or licensed for independent practice, and were primarily involved in direct patient care. There were 523 clinicians, and the response rates varied from 79% in the multispecialty group practices to 58% in single-specialty practices. A detailed description of the sampling strategy was reported elsewhere.[26,27]

Enrollment of patients was a multistaged process, with selection of patients for the cross-sectional survey and later selection of patients for the longitudinal panel. We screened all adult patients (N=22 399) visiting participating providers during a 2-week period from February through October 1986. Physician and patient information from the screening visit was used to identify patients with hypertension, diabetes, or coronary heart disease. Among eligible medical patients, 3528 (70%) were interviewed by telephone to clarify their tracer condition eligibility. Additionally, among patients in each specialty who screened positive for depression,[28] 2195 (60%) completed an expanded version of the depression section of the Diagnostic Interview Schedule (DIS)[29] over the telephone to determine depression status. Ninety-one percent (N=4824) of interviewed patients agreed to enroll in the longitudinal study if selected. Final selection criteria for the longitudinal panel were that patients had to be in an ongoing care relationship with their physician, have one of the tracer conditions, be 18 years of age or older, be English-speaking, and be able to complete self-report questionnaires. Of the patients who agreed to enroll if selected, 2497 (52%) completed an in-person health examination that assessed the presence or absence of anxiety disorders. This sample was used to estimate the prevalence of anxiety disorders in MOS patients. Patients who took the baseline health examination were more likely than those who did not take the examination to be male, to be married, to have higher education levels, and to have higher income levels. In the prevalence estimates presented here, these biases in measured characteristics were offset by statistically controlling for these factors.

### CLINICAL CONDITIONS

The medical tracer condition definitions were based on patient and physician reports of the presence of hypertension, diabetes, and heart disease (congestive heart failure or myocardial infarction within the year before the study began). Data were collected from the patients and the study clinicians during screening and through a structured medical history interview conducted by trained study clinicians after screening. When data were inconsistent, priority was given to the patient reports. Patient reports had high agreement with those of the treating provider for myocardial infarction and moderate agreement for diabetes or hypertension.[27]

Two definitions of depression are used in this article: (1) current depressive disorder (ie, an episode of *DSM-III* major depression in the prior 12 months or a period of *DSM-III* dysthymia during the prior 12 months with no remission) and (2) subthreshold depression (ie, results of the screen for depression were positive but the patient had no current disorder). The presence of current, unremitted depressive disorder was assessed using an expanded version of the depression section of the DIS. The definition of subthreshold depression differs from current symptom-based definitions used by others[30,31] by giving more weight to duration of depression in the prior year. Those patients exceeding the screening cutoff point had a 50% probability of current disorder if seeking care in the mental health specialty sector and a 35% probability in the primary care sector.

### ANXIETY DISORDER MEASURES

Because there was not time to administer the full National Institute of Mental Health DIS to all MOS patients, data on comorbid anxiety disorders (lifetime and current panic disorder, phobia, and GAD) were obtained on patients at the baseline health examination using information from a

ditures for anxious patients may be up to 10 times higher than for nonanxious patients.[10,11]

Information on the prevalence of anxiety disorders that occur in combination with other serious psychiatric and medical illnesses (ie, comorbid anxiety) can be useful for designing training programs to improve treatment of psychosocial problems in primary care. However, research in primary care settings has not focused much on anxiety disorders, especially GAD, possibly because these problems are often seen as neuroses or transient reactions to stress rather than as illnesses.[10]

General population studies report current (6-month) prevalence rates of 0.8% for panic disorder, 1.5% for social phobia, 6.4% for simple phobia, and 3.8% for GAD (12-month); lifetime prevalence rates were 1.6%, 2.8%, 10%, and 4.1% to 6.6%, respectively.[12-14] Higher rates were reported in the National Comorbidity Survey: 12-month and lifetime prevalences were 2.3% and 3.5% for panic disorder; 8% and 13% for social phobia; 9% and 11% for simple phobia; and 3.1% and 5% for GAD.[15-17] About one in four respondents reported a lifetime history of at least one anxiety disorder, with 17% reporting any current (12-month) disorder.

In clinics of primary care providers, anxiety disorders have been reported to be among the most common psychiatric problems seen.[18] Using data from the 1991

screening version of the DIS. Like the full DIS, the screening version was designed to elicit the elements of a diagnosis using *DSM-III* criteria and is administered by trained interviewers. The screening versions for panic disorder and phobia were developed by Lee Robins, PhD, who used an empirical selection strategy to identify the optimal combinations of DIS items that predicted the lifetime diagnosis obtained when using the full DIS. These screening versions were developed using epidemiologic catchment area (ECA) data from the St Louis, Mo, site and then validated with data from three additional ECA sites. The sensitivities and specificities are high—0.85 and 1.00 for panic disorder, and 1.0 and 1.0 for phobia, respectively. The screening version for GAD was also developed by Dr Robins. The sensitivity and specificity of this screen for GAD are 1.0 and 0.95, respectively, using data from wave I of the Los Angeles ECA site.

Specific criteria for panic disorder were met if the patient (1) had ever had a spell or attack that caused sudden feelings of being frightened, anxious, or very uneasy in situations when most people would not be afraid (otherwise, no further probing was conducted); and (2) described an attack or spell that was serious (ie, interfered with his or her life a lot) and could not be attributed to medications, drugs, alcohol, or a physical illness or injury; and (3) experienced specific sets of symptoms during one of the worst such attacks. Analyses (conducted on Los Angeles ECA data) of the differences between the screening definition (used in MOS analyses) and the full DIS (from which the screening version was developed) showed that of those people in the ECA data classified as having panic disorder by the MOS definition but not by the DIS, more than 84% (47/56) were excluded in the DIS because they did not meet the *DSM-III* criteria of having three attacks close together within a 3-week period. Thus, the MOS definition, although highly sensitive for panic disorder, is somewhat broader and therefore would be expected to identify more cases with current panic disorder than the full DIS definition.

The screening version for phobia is almost identical to the full DIS. Specific criteria for phobia were met if, for any of 12 things or situations, the patient experienced feelings of unreasonable fear so strong that the patient tried to avoid them, even though he or she knew there was no real danger.

Specific criteria for GAD were met if the patient (1) felt worried or anxious most of the time for 1 month or more and (2) reported two other symptoms or reported an unusual amount of trouble sleeping during the month or more when the patient felt worried or anxious most of the time (symptoms or problems that could not be entirely explained by a physical illness, medications, drugs, or alcohol).

We also asked respondents if they needed or wanted help for personal, emotional, behavioral, or mental problems (other than for depression, family or marital problems, alcohol, drugs, or sexual problems) during the past 6 months. If a respondent said "yes," we asked him or her to indicate whether care had been received for those problems (ie, unmet need).

### ANALYSIS PLAN

We used logistic regression techniques to estimate the prevalence of anxiety disorders (panic disorder, phobia, GAD, or any one of the three anxiety disorders), perceived need for help with emotional or personal problems, and unmet need in different patient groups receiving care from primary care providers. Because patients in the study could have one or more of the chronic conditions (hypertension, diabetes, heart disease, and depression), we estimate the unique prevalence rate for each condition. For comparative purposes, we provide separate estimates for depressed patients sampled from the mental health specialty sector. Covariates in each model, other than disease condition, were age, gender, race, education, marital status, family income, payment type (prepaid vs fee-for-service), and type of clinical specialty (general medical vs mental health). Intercepts were adjusted to reflect the scores of a patient with average sample characteristics.

To illustrate our results, we generated predictions for different patient groups using the parameters from the regression models. These predictions were corrected for lack of independence among the patients of the same provider using an intraclass correlation model[32] and were weighted to adjust for the effects of sampling probabilities (length of provider screening period, and probability of a patient visit). Use of these weights allows us to generalize results back to typical primary care patients with the MOS disease conditions. Regression coefficients were considered significant at $P \leq .05$ by two-tailed test.

To allow comparisons with previously published results, demographic correlates of lifetime and current anxiety disorders were also conducted, and odds ratios (ORs) were estimated.

National Ambulatory Medical Care Survey (NAMCS),[19] we estimate that 33.6% of patients with a psychiatric diagnosis (over age 17 years) who go to primary care providers have anxiety as the first listed reason why they go to the doctor. Another study found that anxiety and depression fell into the fifth most frequent diagnosis group in outpatient ambulatory care.[20] Clinical epidemiological studies suggest that the prevalence of anxiety and depressive disorders in primary care settings ranges from 10% to 20%.[9]

Most of the literature on concurrence of anxiety disorders with other conditions has focused on depression. In general populations, the odds of having an anxiety disorder if one also has major depression are substantially increased (ie, on the order of nine to 19 times more likely in the depressed than in the nondepressed).[21] Up to 60% of patients with depressive symptoms also have anxiety, and 20% to 30% of patients with major depression also have panic disorder.[22] However, the extent of comorbid anxiety could be higher in primary care patients with depression if anxiety increases utilization rates, or it could be lower if most patients with such comorbidity self-select (or are referred) for mental health specialty care.

Less is known about the extent to which anxiety disorders and chronic medical illnesses co-occur, although

**Table 1. Outpatient Characteristics by Disease Condition and Type of Provider***

| Characteristic | Primary Care Patients: Current Depression | Subthreshold Depression | Hypertension | Diabetes | Heart Disease |
|---|---|---|---|---|---|
| No. of patients | 231 | 366 | 1475 | 512 | 245 |
| Age, y† | 41±1.0 | 46±1.8 | 58±0.8 | 52±0.8 | 61±1.0 |
| Male, % | 27[a] | 23[a] | 47[b] | 45[b] | 60 |
| Married, % | 48[a] | 49[a] | 66[b] | 71[b] | 65[b] |
| Nonwhite, % | 32[a] | 29[a] | 25[a] | 30[a] | 16[b] |
| Education, y† | 13.1±0.3[a] | 12.4±0.4[a,b] | 12.9±0.2[a,b] | 12.7±0.2[a,b] | 12.5±0.2[b] |
| Income, thousands of $† | 18.2±12.5[a] | 19.6±11.2[a] | 23.9±6.8[b] | 23.8±10.1[b] | 21.6±13.8[a,b] |
| Family medicine, % | 35 | 28 | 21 | 16 | 15 |
| Internal medicine, % | 53 | 57 | 64 | 56 | 46 |

| Characteristic | Mental Health Specialty Patients: Current Depression | Subthreshold Depression |
|---|---|---|
| No. of patients | 175 | 102 |
| Age, y† | 41±1.0[a] | 42±1.5[a] |
| Male, % | 24 | 37 |
| Married, % | 52[a] | 42[a] |
| Nonwhite, % | 10[a] | 17[a] |
| Education, y† | 13.7±0.2 | 14.4±0.2 |
| Income, thousands of $† | 25.6±19.3[a] | 25.4±18.9[a] |

*Within each row, groups sharing the same superscript letter do not differ significantly from one another at P≤.05.
†Values are mean±SEM.

rates of 11.9% for current anxiety were reported for a general population sample with one or more chronic medical conditions, and these rates were even higher in persons with diabetes, heart disease, or high blood pressure (about 15%) than in persons without these disease conditions (about 5%).[23,24] There is some evidence that the prevalence of panic disorder is higher in patients with cardiac symptoms than in the general population.[8,25]

This article fills an important gap in the literature by providing data on current (past 12 months) and lifetime rates of anxiety disorders (panic, phobia, and GAD) that co-occur in outpatients with chronic medical conditions (hypertension, diabetes, and heart disease) or depression who are seeking care from their primary care provider. Rates of comorbid depression and anxiety in patients of mental health specialists are provided for comparative purposes. Such comparisons can be used by primary care clinicians to determine how shifting mental health specialty patients with depression to primary care under gatekeeper policies would affect patient illness levels. Comparisons can also be used by consulting mental health specialists to determine whether the high level of comorbid anxiety typically seen in their own patients also occurs in primary care patients. Such a difference in expectations of patient case mix could result in different treatment and expectations for outcomes by specialty.

## RESULTS

**Table 1** presents the sociodemographic characteristics of MOS patients stratified by type of provider and disease condition. In the primary care sector, compared with medically ill patients, patients with subthreshold depression or current depression tended to be younger ($P<.001$), were more likely to be female ($P<.001$), were less likely to be married ($P=.01$), and tended to have lower incomes ($P=.01$ for subthreshold depression and $P<.001$ for current depression). Patients with heart disease were less likely to be nonwhite ($P\leq.01$) than all other patient groups. Among patients in the mental health specialty sector, sociodemographic characteristics of patients with subthreshold and current depression were similar, except that patients with subthreshold depression were more likely to be male ($P=.05$) and had higher levels of education ($P=.05$) than patients with current depression.

## PREVALENCE ESTIMATES IN PATIENTS

**Table 2** presents prevalence estimates for lifetime and current (past 12 months) panic disorder, phobia, GAD, and any anxiety disorder. Patients in the primary care sector with subthreshold depression, hypertension, diabetes, or heart disease had similar, fairly low levels of lifetime and current panic disorder (0.9% to 1.7% in the past 12 months and 1.5% to 3.5% lifetime), and all were significantly lower than levels of patients with current depression ($P\leq.05$). Levels of current and lifetime phobia were similar among patients with hypertension, diabetes, and heart disease (4.8% to 9.2% in the past 12 months and 8.1% to 11.6% lifetime) and significantly higher in patients with subthreshold depression (14.5% in the past 12 months and 18% lifetime, $P\leq.02$) or current depression (22.7% in the past 12 months and 27.9% lifetime, $P\leq.02$). Similar rates of both lifetime and current phobia were found in patients with heart disease and sub-

**Table 2. Prevalence of Comorbid Anxiety Disorders in Primary Care Outpatients***

| | Mean±SE % of Patients (No. of Patients) | | | | |
|---|---|---|---|---|---|
| | Current Depression | Subthreshold Depression | Hypertension | Diabetes | Heart Disease |
| Panic disorder | | | | | |
| Current | 9.4±3.4 (24) | 1.7±0.9† (8) | 0.9±0.4† (16) | 1.1±0.5† (6) | 1.2±1.0† (2) |
| Lifetime | 10.9±3.8 (29) | 3.5±1.2† (13) | 2.2±0.6† (32) | 1.5±0.6† (9) | 1.7±1.2† (3) |
| Phobia | | | | | |
| Current | 22.7±4.0 (63) | 14.5±2.6 (48) | 5.5±1.0† (108) | 4.8±1.3† (33) | 9.2±2.8† (18) |
| Lifetime | 27.9±4.2 (78) | 18.0±2.9† (67) | 9.7±1.2† (157) | 8.1±1.6† (51) | 11.6±3.1† (22) |
| Generalized anxiety disorder | | | | | |
| Current | 54.1±4.7 (141) | 25.4±3.6† (104) | 10.4±1.3† (186) | 11.9±2.3† (76) | 12.4±3.0† (33) |
| Lifetime | 64.3±4.8 (164) | 41.0±3.7† (157) | 22.6±1.7† (371) | 20.6±3.3† (131) | 22.8±3.4† (53) |
| Any anxiety disorder | | | | | |
| Current | 66.3±4.3 (162) | 36.8±4.0† (135) | 14.6±1.5† (256) | 15.5±2.5† (97) | 17.8±3.6† (43) |
| Lifetime | 74.3±4.2 (181) | 49.2±3.7† (181) | 28.0±1.8† (444) | 25.8±3.4† (160) | 27.8±3.7† (63) |

*Adjusted for patient age, sex, race, education, marital status, family income, study site, and each of the other medical or psychiatric conditions.
†Value is significantly different from that for patients with current depression at P≤.05, based on regression coefficients.

threshold depression. Patients with current depression had significantly higher levels of lifetime and current GAD (54.1% in the past 12 months and 64.3% lifetime) than patients with subthreshold depression (25.4% in the past 12 months and 41.0% lifetime, $P<.001$) or patients with one of the medical conditions (10.4% to 12.4% in the past 12 months and 20.6% to 22.8% lifetime, $P<.001$). These patterns were the same for any lifetime or current anxiety disorder.

The prevalences of lifetime and current panic disorder and phobia were significantly higher among patients with depression visiting a mental health provider (22.1% lifetime panic disorder, 21.0% current panic disorder, 47.5% lifetime phobia, and 38.8% current phobia) than among those visiting a primary care clinician ($P\leq.05$). This was also true among patients with subthreshold depression (32.5% lifetime panic disorder, 24.6% current panic disorder, 57.7% lifetime phobia, and 40.5% current phobia). Levels of lifetime and current GAD tended to be similar across specialty sectors, except that for patients with subthreshold depression, there was significantly less lifetime GAD (47.0%) among those visiting primary care providers than among those visiting mental health specialists (68.8%) ($P<.001$). A similar pattern was observed for any lifetime or current anxiety disorder.

## UNMET NEED

**Table 3** shows the percentages of primary care patients with a comorbid anxiety disorder who reported that they needed help for personal, emotional, behavioral, or mental problems (other than depression) and the percentages who reported that need as unmet. Among patients with any anxiety disorder, patients with current depression were significantly more likely than patients with subthreshold depression ($P<.001$) or patients with hypertension or diabetes ($P<.01$) to report that they needed help for personal, emotional, behavioral, or mental problems. Among patients who believed that they needed help, however, many reported unmet need (54.6% to 72.9%). The sample size for stratification of unmet need data according to primary care specialty was too small for meaningful comparison; however, unmet need appeared to be quite similar in patients of family physicians and general internists, except for patients with subthreshold depression (ie, only 19% of patients with subthreshold depression visiting primary care providers reported unmet need, compared with 59% of patients with subthreshold depression visiting general internists).

## DEMOGRAPHIC CORRELATES

Demographic correlates of current anxiety disorders are reported in **Table 4** for primary care patients. Associations are shown in the form of ORs with 95% confidence intervals (CIs). Results are consistent with those of previous studies, showing that, overall, men are significantly less likely than women to have any anxiety disorder.[15] However, when stratified by depressed vs nondepressed patients, depressed men were significantly more likely than depressed women (OR, 1.80; 95% CI, 1.03 to 3.15) to have GAD. Whites and nonwhites had similar prevalences of current panic disorder and phobia, although nonwhites were more likely to have GAD (OR, 1.54; 95% CI, 1.08 to 2.20). Younger patients had significantly higher prevalences of these disorders (except for phobia), which generally declined with age. Married patients were less likely than unmarried patients to have phobia (OR, 0.49, 95% CI, 0.32 to 0.76) or any anxiety disorder (OR, 0.68; 95% CI, 0.53 to 0.87), while rates of anxiety disorder were similar across educational levels. The prevalence of panic disorder did not vary significantly by income level, while patients in the middle income categories had less phobia, and patients at higher income levels had less GAD or any anxiety disorder.

Demographic correlates for current anxiety disorder were also examined separately by tracer condition. Results differed in several ways from those presented for the whole sample. Current anxiety disorder was more prevalent in nonwhite hypertensive patients than in white hypertensive patients (OR, 1.80, 1.57, and 1.63 for phobia, GAD, and any anxiety disorder, respectively), and

Table 3. Patient-Reported Need and Unmet Need for Help With Personal, Emotional, and Mental Health Problems*

| | Primary Care Patients With Any Anxiety Disorder, %† | | | | |
|---|---|---|---|---|---|
| | Current Depression (N=162) | Subthreshold Depression (N=135) | Hypertension (N=256) | Diabetes (N=97) | Heart Disease (N=43) |
| Need help | 56.1±6.5 | 32.7±6.8† | 25.9±5.3† | 20.9±7.1† | 33.4±13.7 |
| Unmet need | 56.3±7.1 | 54.6±9.0 | 63.2±7.7 | 71.9±11.6 | 72.9±17.9 |

*Values are mean± SEM.
†Value is significantly different from that for patients with current depression at P≤.05, based on regression coefficients.

current GAD was more prevalent in nonwhite patients with current depression than in white patients with current depression (OR, 2.25). Other tracer conditions showed no differences in prevalence of anxiety disorder by race. Age differences in comorbid anxiety rates were not as pronounced for patients with depression. Only in patients with heart disease (OR, 0.19; 95% CI, 0.52 to 0.70) or hypertension (OR, 0.55; 95% CI, 0.34 to 0.90) was marital status related to less phobia, while for subthreshold depression, married patients were more likely than unmarried patients to have panic disorder, GAD (OR, 2.46; 95% CI, 1.19 to 5.08), and any anxiety disorder (ie, married patients with heart disease or hypertension were less likely to be phobic than were unmarried patients with these diseases). Relationships between higher income and lower levels of GAD or any anxiety disorder were significant only in patients with hypertension or diabetes.

## COMMENT

Our results on the co-occurrence of anxiety disorders, especially GAD, in patients with depression and in patients with serious, chronic medical conditions along with high levels of perceived unmet need have implications for the detection, diagnosis, and appropriate treatment of comorbid conditions in primary care patients. While panic disorder and phobia were not very prevalent in patients with serious medical conditions according to the MOS, GAD was more prevalent among these patients (10.4% to 12.4%) than in the general population (3.8%).[14] Rates from the National Comorbidity Survey tend to be somewhat higher for any anxiety disorder. However, the fact that prevalence estimates from the National Comorbidity Survey for all psychiatric disorders are higher than in previous epidemiologic surveys could be caused by a number of methodologic factors, including assessment of *DSM-III-R* rather than *DSM-III* criteria and use of the University of Michigan Composite International Diagnostic Interview rather than the DIS.[15] Thus, ECA estimates provide a better comparison to our data (both our data and the ECA estimates use *DSM-III* criteria to assess anxiety disorders using variations of the DIS instrument).

Some type of current anxiety disorder can be expected in 15% to 18% of primary care patients with hypertension, diabetes, or heart disease, with lifetime rates of 26% to 28%. Lifetime rates are of interest because such disorders may be likely to recur. These anxiety symptoms may represent a psychologic response to acute or chronic medical illness or may cause an exacerbation of symptoms in chronic medical illnesses such as asthma, angina pectoris, and diabetes.[7] The fact that rates for any current anxiety disorder were comparable to those in persons in a general population who identified themselves as having these same chronic medical conditions[24] suggests that the self-referral of anxious patients with these medical conditions may not be great. The patients may already be selecting themselves into primary care for their chronic medical conditions. However, given the low detection rates of anxiety in primary care patients,[33] along with other findings that patients with hypertension or diabetes who also have a comorbid anxiety disorder are as functionally debilitated as patients with depression or serious heart disease (C.D.S., K.B.W., L.S.M., C.A.J., P.C., unpublished data, 1990), attention should be paid to increased detection and treatment of this comorbid disorder.

Providers should suspect that the majority of their currently depressed patients have one or more anxiety disorders, with 9% to 25% of them (depending on specialty sector) having the more severe panic disorder. Contrary to prevailing views, depressed men may be more likely to have generalized feelings of anxiety and distress than depressed women. The high co-occurrence of anxiety disorders and depression may be caused in part by a substantial overlap in symptoms (especially in GAD).[34,35] This overlap may complicate our ability to differentiate successfully anxiety and depression. However, there were higher rates of panic disorder and phobia in patients with current depression than in patients with the medical tracers, and for these anxiety disorders there is less definitional overlap.

As in past research,[15] overall rates of comorbid anxiety disorders were higher in women than in men, except for depressed patients with GAD, where this trend was reversed. Younger and middle-aged medically ill patients tended to have more comorbid anxiety disorder, as did nonwhite hypertensive currently depressed patients. Rates of GAD and any anxiety disorder were higher in low-income patients with hypertension and diabetes.

Comorbid anxiety disorders, especially panic disorder and phobia, were much more common among depressed patients visiting mental health specialists than among depressed patients in the primary care sector. Primary care clinicians should be aware of the possible difference in case mix of patients who are shifted into their practices from mental health specialists under gatekeeping policies. The more severe forms of anxiety comorbidity in these patients may require more complex treatment plans.

**Table 4. Demographic Correlates of Current (12-Month) Anxiety Disorders**

| | Odds Ratio (95% Confidence Interval) | | | |
|---|---|---|---|---|
| | Panic Disorder | Phobia | Generalized Anxiety Disorder | Any Anxiety Disorder |
| Sex | | | | |
| M | 0.21 (0.08-0.54) | 0.35 (0.23-0.54) | 0.61 (0.42-0.89) | 0.51 (0.38-0.67) |
| F | 1.00 | 1.00 | 1.00 | 1.00 |
| Race | | | | |
| White | 1.00 | 1.00 | 1.00 | 1.00 |
| Nonwhite | 0.99 (0.36-2.72) | 1.10 (0.71-1.70) | 1.54 (1.08-2.20) | 1.45 (1.05-2.00) |
| Age, y | | | | |
| 18-30 | 3.60 (1.10-11.74) | 2.11 (0.92-4.78) | 4.70 (2.58-8.59) | 3.36 (1.99-5.68) |
| 31-40 | 2.94 (0.88-9.83) | 1.77 (0.97-3.24) | 5.74 (3.72-8.87) | 4.16 (2.86-6.06) |
| 41-50 | 2.03 (0.67-6.16) | 1.81 (1.00-3.27) | 2.62 (1.59-4.30) | 2.21 (1.51-3.24) |
| 51-60 | 1.55 (0.46-5.24) | 0.97 (0.52-1.83) | 2.22 (1.36-3.63) | 1.51 (1.06-2.17) |
| ≥60 | 1.00 | 1.00 | 1.00 | 1.00 |
| Married | | | | |
| Yes | 1.21 (0.54-2.73) | 0.49 (0.32-0.76) | 0.84 (0.60-1.18) | 0.68 (0.53-0.87) |
| No | 1.00 | 1.00 | 1.00 | 1.00 |
| Education, y | | | | |
| 0-11 | 0.42 (0.13-1.38) | 1.45 (0.88-2.39) | 0.89 (0.54-1.46) | 1.17 (0.80-1.70) |
| 12 | 1.00 | 1.00 | 1.00 | 1.00 |
| 13-15 | 1.09 (0.42-2.82) | 1.17 (0.72-1.90) | 1.08 (0.72-1.60) | 1.09 (0.77-1.56) |
| ≥16 | 0.60 (0.22-1.63) | 0.96 (0.56-1.64) | 1.10 (0.78-1.56) | 1.14 (0.81-1.60) |
| Income, $ | | | | |
| 10 000 | 1.00 | 1.00 | 1.00 | 1.00 |
| 10 001-19 000 | 2.22 (0.77-6.36) | 0.65 (0.38-1.09) | 0.67 (0.48-0.95) | 0.61 (0.43-0.86) |
| 19 001-34 000 | 0.97 (0.25-3.72) | 0.34 (0.18-0.63) | 0.69 (0.48-0.98) | 0.53 (0.38-0.73) |
| ≥34 001 | 1.52 (0.40-5.83) | 0.61 (0.31-1.19) | 0.57 (0.38-0.86) | 0.55 (0.36-0.82) |

We did not ask patients whether they needed help for feelings of anxiety. However, we did ask patients if they needed or wanted help during the past 6 months for personal, emotional, behavioral, or mental problems (other than for depression, family or marital problems, alcohol, drugs, or sexual problems). Overall, patients with comorbid anxiety disorder were significantly more likely ($P<.001$) to express a need for help (30%) than were patients without comorbid anxiety disorder (19%). When broken down by MOS tracer condition, patients in the primary care sector with current depression and a comorbid anxiety disorder expressed significantly more need for help than did other patient groups.

However, among all primary care patients who had a comorbid anxiety disorder, unmet need was high. What accounts for the high unmet need in primary care patients with comorbid anxiety is unclear. Perceived unmet need could simply be an indicator of dissatisfaction with medical care in general, or it could reflect the quality of care for psychosocial problems provided by primary care clinicians. We performed simple, unadjusted analyses of variance to determine whether there were any characteristics of medical patients (hypertension, diabetes, and heart disease) that differentiated those who got help for their personal or emotional problems and those who did not get such help. Patients in the two groups did not differ in physical or mental health, overall satisfaction with medical care, extent of counseling for anxiety or depression, or use of tranquilizers or antidepressants. There was greater unmet need among patients who had been counseled by their clinicians about how to cope with physical illness, who reported more unmet need for other types of problems (family problems and sexual problems), and who reported less need for help for depression.

These findings suggest that clinicians may be focusing primarily on the patient's chronic medical disease condition and the complexities of dealing with that condition, especially if patients are not also depressed. Among depressed patients, those who did not receive needed help were more likely to report lower perceived health in general and less satisfaction with the technical care provided, the time spent with their physician, and the availability and convenience of medical care in general. Thus, for depressed patients, unmet need may reflect overall dissatisfaction with care in general. However, given the importance to health care plans of measures of satisfaction and the increasing use of such measures as report cards for the quality of care, future research should focus on determinants of unmet need in primary care patients with comorbid anxiety disorders.

This study was limited to three metropolitan sites, to selected systems of care within the sites, and to patients with one of three medical tracer conditions or depression. Thus, our conclusions may not be generalizable to other settings or other types of patients. However, the MOS sample is one of the largest and most representative samples of patients recruited from practice settings and includes patients with the health problems experienced most commonly by general or treated populations. Another limitation is that our screens for anxiety disorders have not been validated in relation to other diagnostic instruments or to clinical assessments. To the extent that our screen for GAD is identifying symp-

toms associated with a medical condition (eg, trouble sleeping), even though patients were asked not to count symptoms caused by physical problems, it may be a less specific measure. If so, however, we would have expected rates of GAD to be higher in primary care patients with depression than in mental health specialty patients with depression, a situation that did not occur. Panic disorder and phobia are more specific conditions than GAD, and, thus, their interpretation is more straightforward. We do not know, however, whether phobia represents more severe symptoms (eg, symptoms related to agoraphobia) or less severe symptoms (eg, simple phobias, such as fear of spiders). Compared with full DIS diagnoses, however, the sensitivities and specificities of all three screens, developed using ECA data, are high.

Based on results reported here, clinicians in both the primary care and mental health specialty sectors should be prepared to screen and treat people with multiple comorbid conditions. A number of short-form instruments have been developed recently to rapidly and accurately recognize and diagnose common mental disorders in primary care.[36,37] Research is needed on whether use of such screens will improve detection rates for comorbid anxiety disorders. Treatment for comorbid anxiety, especially panic disorder with depression, requires determining which is primary (earlier onset), and some experts recommend treating the primary condition first.[38] A number of pharmacological and psychosocial treatments have been shown to be efficacious in the short-term and long-term treatment of patients with anxiety.[39,40] However, future research should focus on the effectiveness of different types of treatment for coexistent anxiety in patients seeking care for chronic illnesses in everyday primary care practices. The adequate long-term management of anxiety is likely to have a positive effect on reducing needless medical visits and testing,[41] reinforcing the importance of early identification of anxiety disorders in medically ill and depressed patients.

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