Primary Care Perspectives on Generalized Anxiety Disorder

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Recently, there has been increased interest in the impact and treatment of anxiety disorders. However, one type of anxiety disorder, generalized anxiety disorder (GAD), has received less attention than other disorders, such as panic disorder, despite the prevalence and amenability of this disorder to treatment in the primary care setting. Rates of GAD have been found to be between 2.8% and 8.5%, with a median prevalence of 5.8%—at least twice the rate reported in the National Comorbidity Survey. Up to one third of patients presenting to primary care clinics with somatic complaints had a mood or anxiety disorder. Generalized anxiety disorder is linked to the overuse of medical services: emergency department visits, hospitalizations, diagnostic and laboratory tests, pharmacy costs, and so on. Recognition of anxiety and depression in primary care is poor, with only 23% of pure anxiety cases being recognized compared with 56% of depression cases. The various stakeholders (patients, family members, employers, and insurers) in a patient's outcome often complicate treatment of anxiety. Barriers to effective treatment include time constraints, acute disease orientation of most care systems, lack of planned follow-up and monitoring, and relative unavailability of specialist access. The collaborative care approach is designed to overcome these barriers. With this approach, the patient is provided with additional educational materials, physicians are supported by physician extenders (nurses, social workers, or expert consultants) who provide case-based feedback, follow-up, extra visits, and telephone calls to patients. Providing efficacious treatment to primary care for GAD will require improving knowledge of providers and increasing patient engagement.

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Although interest in the prevalence, characteristics, clinical/administrative, and economic impact of psychiatric disorders in primary care began over 2 decades ago, most studies and reports have focused on the nature and impact of depressive disorders in these medical settings. More recently, interest has increased in the impact and treatment of anxiety disorders, with the majority of work centered on panic disorder because of its dramatic and varied physical manifestations and the probability of subsequent increases in overutilization of medical care services. Far less attention has been given to generalized anxiety disorder (GAD), despite the prevalence of this disorder and its amenability to treatment in primary care settings. This lack of attention may be because the nosologic validity of GAD has been controversial over the past 2 decades, with GAD being variously conceptualized as a prodromal or residual phase or severity marker of other mood and anxiety disorders.[1–3] However, recent studies have indicated that GAD, without any major depression comorbidity, still produces disability greater than that seen in psychiatrically well subjects.[3] Thus, interest in the independent impact and treatment of generalized anxiety disorder in primary care settings has been relatively recent.

This article will provide some perspectives on the prevalence, characteristics, impact, and treatment of GAD in primary care settings. We will review 5 major areas and phenomena related to GAD in primary care: prevalence of GAD; frequent somatic presentations and high health care utilization in GAD; poor physician recognition of GAD; determinants of general treatment effectiveness; and collaborative care treatment approaches. Because of the absence of studies of GAD treatment in primary care, these last 2 topics will be reviewed more broadly and include consideration of studies in panic disorder and concepts drawn from the treatment of depression in primary care literature.

PREVALENCE IN PRIMARY CARE

Eight studies, each with sample sizes in excess of 1000 patients, contain data on the prevalence of GAD in the primary care setting (Figure 1).[4–11] Many of these studies also contain comparative data on the rates of panic disorder and major depression. As can be seen, rates of GAD

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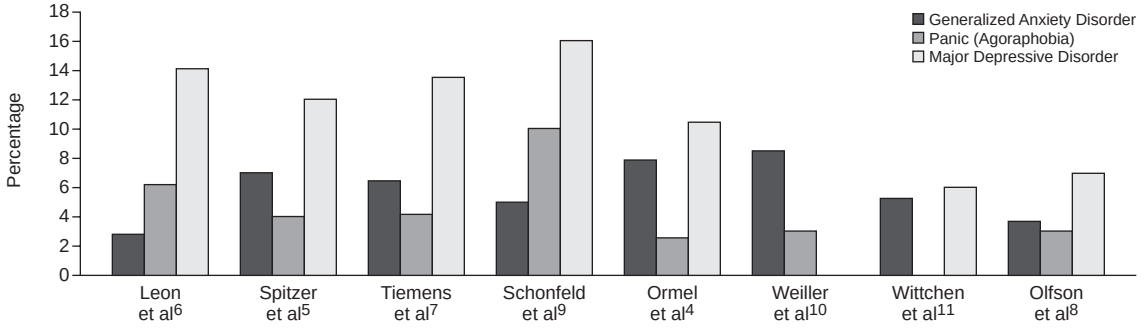
Figure 1. Primary Care Prevalence of Generalized Anxiety Disorder in 8 Studies (each N > 1000)



have been found to vary between 2.8% and 8.5% with a median prevalence of 5.8%. This point prevalence figure for GAD is at least twice that reported in the community by the National Comorbidity Survey (NCS),[12] suggesting a link between GAD and health-care seeking behavior. For comparative purposes, the median rate of panic in these studies[4–11] is about 4%, and the median rate of major depression is 14%—both approximately twice that reported in the NCS survey. Hence, the significantly high rate of panic and major depression among patients in primary care, well studied and described, appears to be mirrored by a correspondingly high rate of GAD.

SOMATIC PRESENTATIONS AND HIGH HEALTH CARE UTILIZATION

Almost 2 decades ago, Bridges and Goldberg[13] showed that in primary care, 87% of anxious and depressed patients present with physical symptoms. Most subsequent work has focused on somatic presentations of depression in this setting, although some studies have also highlighted the strongly somatic presentations of panic disorder in the medical setting. More recently, studies have confirmed that health and somatic concerns are particularly associated with GAD, which makes sense given the physical symptoms and generalized worry characteristic of the diagnosis. One survey[14] of 500 consecutive patients presenting to primary care clinics with somatic complaints showed that over a third had a mood or anxiety disorder. Rates for GAD, very strictly diagnosed in this study (i.e., subsyndromal forms of GAD were separately coded), were 2%; panic disorder, 1.4%; and major depressive disorder, 8.4%. However, 11.4% of patients had anxiety disorder not otherwise specified (NOS), and 10% had depressive disorder NOS. These findings suggest that, in primary care, the prevalence of mixed anxiety and depressive symptoms that do not meet diagnostic criteria is quite high. More recently, Wittchen et al.[11] have shown that only 13% of GAD patients seen in primary care present with anxiety as the primary complaint. Instead, pain, insomnia, and other physical symptoms are the chief presentations.

Cardiac and gastrointestinal presentations of anxiety deserve separate mention because of the tremendous cost of the potential medical screenings and tests necessary for accurate diagnosis. Three separate studies[15–17] in patients with a variety of specific cardiologic complaints have shown that GAD is just as common, if not more common, than panic disorder and major depression as a primary diagnosis. GAD was determined to be the primary diagnosis among 20% of patients with atypical chest pain,[15] 55% of patients with chest pain and normal coronary arteries,[16] and 50% of patients seeking a cardiac evaluation.[17] Similarly, 2 studies by Walker et al.[18] and Lydiard et al.[19] showed a relatively high lifetime (58% and 28%, respectively) and current (25% and 13%, respectively) rate of GAD in patients with irritable bowel syndrome.

A number of studies have also suggested that GAD is associated with overuse of medical services. In one study[20] of 431 primary care patients, those with GAD showed greater emergency department use than those diagnosed with other Axis I disorders. In a large-scale survey[11] of more than 20,000 patients, those with GAD had twice the rate of primary care visits compared with other primary care patients. Overutilization of medical services may correspond to underutilization of psychiatric services, as a study by Kennedy and Schwab[21] found that twice as many GAD patients in their sample were seeking treatment from gastrointestinal specialists as psychiatrists.

Further, patients with GAD comorbid with other psychiatric disorders may exact an even greater toll on the health care system than individuals with GAD alone. A French sample[22] of 1042 primary care patients with GAD comorbid with other Axis I disorders had more hospitalizations, diagnostic and laboratory tests, pharmacy costs, and absenteeism from work in the past 3 months than patients with pure GAD. However, severity of anxiety was the best overall predictor of the use of diagnostic and laboratory tests and outpatient services, irrespective of comorbidity. This evidence suggests that while the comorbidity of GAD

with other Axis I disorders may be an important predictor of health service utilization, this comorbidity may simply be a marker for severity of anxiety.

The impact of GAD on health care costs is also evident when examined from the perspective of "high utilizers." High utilizers are defined as that small proportion of patients who have many more ambulatory primary care visits than others. In one particular study of 119 such patients, Katon et al.[23] found that GAD was the most common current diagnosis, comparable in prevalence (over 20%) to that of major depression.

High utilizers of primary care services are diagnostically and characteristically a heterogeneous group. One study[24] of primary care physicians found that the physicians viewed some, but not all, high utilizing patients extremely frustrating to deal with. Interestingly, in this same study, GAD was much more frequent in a group of "frustrating high health care utilizers," than in nonfrustrating patients. While panic disorder, major depression, and personality disorder were also overrepresented in this group, GAD was the most frequent diagnosis. These results suggest that generalized anxiety may be a marker associated with patient behavior that is quite frustrating to deal with in primary care practice, which may affect a physician's ability to adequately assess and treat these patients.

POOR PHYSICIAN RECOGNITION IN PRIMARY CARE

Studies have shown, in general, that the recognition of anxiety and depression in primary care is poor. However, recognition of "pure" anxiety (unaccompanied by a comorbid disorder) is much poorer than recognition of "pure" depression. Even relative to recognizing pure depression, primary care physicians appear to be best at recognizing individuals with both comorbid anxiety and depression. In one primary care study,[25] only 23% of pure anxiety cases were recognized, in contrast to 56% of pure depressed cases and 65% of combined cases. In another primary care study, diagnostic recognition of pure GAD was also low, approximately 34%.[11] One of the major errors appears to be the misdiagnosis of anxiety as depression. Nisenson and colleagues[26] examined the accuracy of physician diagnosis of depression and anxiety by independent assessment among primary care patients. Among patients classified as false positives for major depression, the rate of anxiety disorders was much higher (27%) than among those with true negative cases of major depression (11%). Again, consistent with the study mentioned previously, accurate recognition of depression was much higher when it co-occurred with anxiety than when it was standing alone. The tendency to misdiagnose anxiety as depression may relate to the clinician's greater familiarity with the concept and syndrome of depression as well as the overlap in symptoms between the two.

INADEQUATE TREATMENT IN PRIMARY CARE

Inadequate recognition of anxiety certainly leads to inadequate treatment, although it is not the only factor that contributes to inadequate treatment—many recognized cases still do not receive appropriate treatment. Relatively few studies have examined the rate and quality of treatment for anxiety disorders in the primary care setting. Larger community surveys[27,28] have clearly established that care for both anxiety and depressive disorders inadequately serves the needs of individuals identified as having these disorders. In primary care, few studies have examined treatment of anxious patients, mostly those with panic disorder, and found low rates of quality treatment. These include 2 initial reports[29,30] that used patient self-report and found rates of adequate treatment with medication and psychotherapy quite low, ranging from 20% to 30%. A more systematic study[31] over the course of the year showed that, while almost half of primary care panic disorder patients received antipanic medication, only half of those patients (about one fourth of all primary care panic disorder patients) received a sufficient dose and duration of treatment to qualify as an adequate trial. The rate of psychotherapy of any kind was between 15% and 30%, although patients' descriptions of their therapy rarely discussed use of common cognitive-behavioral therapy (CBT) techniques, such as diary keeping, relaxation, evaluation and correction of beliefs, exposure, or practicing new beliefs. Thus, it is likely that much of the therapy that was used was not evidence based. No published data exist on rates of appropriate treatment received by GAD patients seen in primary care.

STRATEGIES FOR IMPROVING TREATMENT OF GAD IN PRIMARY CARE

Basic Considerations

Determining the overall effectiveness of any treatment is a product of the actual efficacy of the treatment, which must be delivered properly by the clinician, and the degree to which the patient is involved or engaged in the treatment. Duan et al.[32] have noted recently that treatments vary in how easy or hard they are to administer properly, an aspect of treatment that is termed its *robustness* (i.e., the degree to which the treatment's intrinsic efficacy is resistant to provider variability). This aspect of treatment is one of the most important determinants of whether clinician treatment delivery will be problematic. Patient treatment engagement or adherence has been discussed often, and it is a product of numerous factors including the attitudes, knowledge, and beliefs of the patient; the preference of the patient for a specific kind of treatment as well as a specific outcome target; motivation and readiness to change; the patient's social resources and context; and lastly, other characteristics of the treatment, including side effects and other inconveniences (e.g., travel time, missing work).

Consideration of clinician and patient factors that facilitate mental health treatment delivery provides a framework for improving the quality of care for GAD patients seen in the primary care setting.

Another important consideration in treatment delivery and evaluation is the specific goal of the intervention, which can vary depending on the stakeholder involved. Patients are most interested in reducing their level of distress and improving their quality of life. Patients' families are much more interested in behavioral changes in the patient that will enhance family functioning. These changes may involve reductions in the arousal, agitation, or avoidance that interferes with interpersonal interactions or the patient's ability to perform important family functions. Employers are most interested in a patient's ability to work, and therefore, treatment effects that reduce illness-related absenteeism are most important. Finally, the payor or insurer is most interested in cost. This diverse set of desired outcomes from a diverse set of stakeholders may contribute to conflicts between different stakeholders about the appropriateness of a given treatment. Ambiguity about the benefits of treatment for employer and insurer are likely strongly related to the well-documented difficulty in achieving mental-health–benefit parity. The treatment of psychological disorders, like GAD, within primary care settings has the potential to address many of these diverse goals simultaneously. For example, the integration of medical and mental health treatment can provide a more comprehensive approach to assessment and treatment, thus attending to the full range of effects of the disorder. As such, integrated treatment in primary care is more accessible to patients and likely to be more cost effective.

Assuring Adequate Treatment Delivery by Clinicians

An important issue in providing treatment of psychological disorders in primary care settings is determining which treatment to deliver. Related to the concept of robustness mentioned above, pharmacotherapeutic treatments are clearly much more robust than psychotherapeutic treatments, because it is easier to properly write a prescription for a medication than to be trained to deliver an evidence-based psychotherapeutic treatment with fidelity and competence. Even among the pharmacotherapies, antidepressants may be viewed as more robust treatments than benzodiazepines, given that they will work on a variety of different possible comorbid conditions, thereby facilitating treatment by clinicians who may not have state-of-the-art differential diagnostic capabilities. Benzodiazepines can be effective against anxious symptoms commonly seen in patients with panic disorder, GAD, and social anxiety disorder, but if an individual has depression or an anxiety disorder such as posttraumatic stress disorder (PTSD), they will work less efficiently.

Psychotherapy is thought to be less robust than pharmacotherapy because the outcome is more dependent on the skill of the therapist. Within psychotherapies, there may also be differences in robustness. For example, CBT may be more robust than other therapies because it may be easier to learn, more concrete in structure, and less variable in its procedures. An important area for further study is the development and evaluation of methods for increasing the robustness of interventions. For example, specific training methods may be particularly useful in facilitating provider knowledge and subsequently increasing the reliability of treatment delivery. Further, component analyses of empirically supported psychotherapies would help determine the active and necessary components of psychotherapies, potentially simplifying provider acquisition and delivery and patient adherence to the treatment.

Balanced with robustness in the consideration of a treatment is, of course, its evidence base. Numerous efficacy studies have established the effectiveness of antidepressants, azapirones, and benzodiazepines in the treatment of GAD. However, no effectiveness studies have examined the treatment of GAD in any setting, specifically the primary care setting in which so many of these patients present. However, numerous studies have reported on the pharmacotherapy for depression and panic in primary care. We know from these that, although providers know the appropriate types and doses of medication, they are less well trained in stepped care (i.e., what to do when a first- or second-line treatment does not succeed and how to sequence treatments and treatment combinations).[33] One study[31] of primary care pharmacotherapy for panic disorder showed that patient factors were the major determinant of variability in the provision of appropriate medication, while provider factors were much less important. Patients with more severe phobia and lower levels of neuroticism were more likely to receive appropriate treatment. Because neuroticism might be a marker for more difficult patients, it may be that psychiatric consultation, after failure of an initial pharmacotherapy trial for GAD in primary care, would be a reasonable strategy to pursue to increase the provision of appropriate medications.

Similarly, no studies examine psychotherapies for GAD in primary care. The preponderance of efficacy studies support CBT for GAD, including the components of psychoeducation, cognitive restructuring, relaxation strategies, and exposure. For the psychological or behavioral management of GAD in primary care, the major question that must be posed is whether primary care physicians should attempt any kind of psychotherapeutic management or instead refer all patients needing such care to specialty mental health care. Some primary care experts feel that it is possible for primary care physicians to provide not only routine psychoeducation but also some minimal cognitive-behavioral interventions. For example, Culpepper[34] has discussed the use of simple physician interventions to help patients manage worry and correct cognitive distortions. These simple procedures might work for mild cases of

generalized anxiety, although this assumption needs to be examined empirically. Referral to a cognitive-behavioral therapist could then be the next step in a stepped care strategy. Similarly, after CBT, primary care physicians may be able to provide follow-up CBT "boosters" if patients are relatively asymptomatic or only minimally symptomatic after the initial course of CBT. However, substantial variability exists among primary care physicians regarding their ability to provide or interest in providing such therapy. Therefore, it should be left up to the individual practitioner whether to offer such services, and it must be recognized that only a minority of practitioners are likely to serve in this role. Collaborative care approaches, as discussed below, are designed to facilitate the provisions of comprehensive treatment of psychiatric disorders in primary care settings.

Determinants of Patient Engagement in Treatment

Engagement is a complex concept that is determined by multiple domains. These include beliefs and attitudes about treatment, including knowledge about and experience with treatment; preference for both specific kinds of treatment and specific outcomes that might be targeted by treatment; motivation for treatment, commonly conceptualized as stages of readiness to change; and finally, the broader social context, which can include the income or insurance that determines treatment access, the social support that may facilitate or impede engagement, and other ethnic and cultural factors that may in turn be major determinants of beliefs, attitudes, and values.

For mental disorders in the primary care setting, most literature has focused on treatment preferences. Studies clearly show that patients not offered the treatment they prefer are less likely to enter treatment[35] and that dropout/attrition after treatment entry is greater in patients assigned to a treatment they do not prefer.[36] Few studies have examined whether treatment preferences can affect the outcome of treatment in patients that adhere to a treatment program. However, in a recent study,[37] depressed patients were randomly assigned to psychotherapy or medication, or they were assigned to one of these modalities on the basis of preference. Although a trend found at 12-month follow-up indicated that psychotherapy was superior in those who preferred this modality compared with those who were assigned to it randomly (this was not the case among those receiving medication), no differences were found in multiple analyses at earlier time points.

Given the absence of studies of GAD in primary care settings, little is known about the influence of treatment preference on treatment outcome for patients with GAD in primary care. The preponderance of evidence suggests, however, that the majority of patients with depression who are seen in primary care want treatment,[38] that most of these patients do not want to be referred to a mental health specialty setting for this treatment,[39] and that more patients prefer counseling (rates of 60%–90%) rather than medication (rates of 30%–60%).[38,40] In one large primary care study,[38] being wealthy and knowledgeable about antidepressants predicted medication preferences, while being African American and knowledgeable about counseling predicted psychotherapy preference.

In a recent study[41] of over 1000 patients who screened positive for panic symptoms in primary care settings, 64% were willing to consider medications. These individuals were older, less educated, of poorer health status, and more likely to have PTSD and social phobia than those who did not prefer medications. Sixty-seven percent were willing to consider meeting with a specialist and learning how to control attacks (note that this description is different from counseling and is more consistent with cognitive-behavioral therapeutic approaches). The only predictors of this preference were PTSD and social phobia, which suggests that psychotherapy of this type may be more broadly acceptable to patients in general (i.e., there were no specific sociodemographic predictors).

Few studies have actually examined the uptake of treatment following characterization of treatment preferences for any disorder. An Australian study[42] included 422 adults in primary care settings who were distressed according to score on the General Health Questionnaire. The investigators found that 83% preferred counseling and 69% preferred medication. At 6-month follow-up, only 14% had entered counseling and only 20% had taken medication. A history of treated depression and the number of depressive symptoms predicted both counseling and antidepressant use, while preference for medication predicted antidepressant use. A variety of factors can influence whether or not a treatment is pursued and followed, including the availability of treatment modality (access) and patient knowledge about what a given treatment entails—for example, patients often do not realize that psychotherapy requires regular attendance and even, with behavioral approaches, homework.

While a systematic approach to improve engagement requires an overall change in the care process (see below), some primary care–specific strategies can enhance patient engagement and are useful to consider. Although the primary care physician's time is limited, judicious use of time can allow some education of the patient about GAD and available treatment options, which could result in a change in beliefs, including preferences, about treatment through increases in patient knowledge.[43,44] Simple motivational interviewing techniques, developed initially for substance abuse problems, may help patients become more ready to change and more motivated for treatment.[45] Because these techniques focus primarily on identifying and quantifying both the positive and negative aspects of substance abuse, they would need to be modified to account for the fact that little about GAD is positive and focus more on the costs of anxiety and the possible benefits of treatment

(M. G. Craske, Ph.D., personal communication, 2003). Finally, primary care physicians can serve a central role in facilitating collaborative approaches to treatment, which are gaining increasing empirical support.

COLLABORATIVE CARE APPROACHES TO IMPROVING TREATMENT EFFECTIVENESS IN GAD

Collaborative care approaches have been used to improve the effectiveness of treatment of primary care patients with both depression and panic disorder.[46,47] These approaches principally target patient engagement in treatment by tracking patient progress using information systems and care extenders (to improve delivery of treatment), using expert consultation to make sure that treatment choices are sensible and state-of-the-art, and using care-extender–delivered education to increase patient activation and self-management.[48] In a patient-centered "chronic disease self-management approach," the patient, in collaboration with the health care provider or system, takes day-to-day responsibility for managing his or her illness by effectively incorporating adherence to recommended medication management with the adoption of improved health habits, improved coping skills, and ongoing monitoring of illness status and changes.[49]

The collaborative approach is particularly helpful in overcoming common barriers to obtaining mental health treatment, many of which could effectively be addressed in primary care settings. At the patient level, there is the stigma of mental illness, lack of knowledge of psychiatric disorders and options for treatment, a tendency toward mind-body dualism (which may lead a patient with primarily somatic symptoms to dismiss psychiatric interventions), concurrent problems such as hopelessness (which can interfere with seeking help), cultural differences between providers and patients that may inhibit patients from discussing problems or physicians from recognizing problems, and inadequate resources such as mental health insurance. At the physician level, there is lack of knowledge of psychiatric disorders and treatments and a tendency toward excessive medical focus, due perhaps to lack of awareness of anxiety symptoms and fear of overlooking true medical problems. It is clear that somatic symptoms will cause physicians to scrutinize patients for medical illnesses, which may be dangerous and divert attention from psychiatric etiologies. Furthermore, some anxious patients may behave in a somewhat off-putting and frustrating manner, which may result in inadequate treatment. Barriers to effective treatment appear to be greatest at the care process level. Factors here include time constraints, the acute disease orientation of most care systems, the lack of planned follow-up and monitoring related to this later orientation, the relative unavailability of access to specialists, and well-known problems related to the separate systems of mental health care and medical care.

The collaborative care approach is designed to overcome these treatment barriers and has direct applications to the treatment of GAD. At the patient level, the patient is provided with additional educational materials and some additional provider resources. With regard to GAD, specifically, patients could be presented with information on the characteristics and nature of GAD, treatment options (including expectations) for GAD, and initial, basic strategies for managing worry and anxiety. The availability of such information would also be helpful at the provider level, by teaching physicians to accurately recognize, diagnose, and initiate treatment of GAD. In collaborative care, physicians are supported by physician extenders, such as nurses or social workers, or expert consultants, such as psychiatrists or psychologists, who provide case-by-case feedback as well as certain algorithmic approaches to treat given disorders. Care process is enhanced in collaborative care by the provision of extended care follow-up, extra visits, and telephone calls provided by physician extenders; these provisions allow for the assessment, in an ongoing way, of treatment tolerance, treatment adherence, attitude toward treatment, and disease status.

Given the evidence supporting specific interventions for GAD, including cognitive-behavioral psychotherapy and pharmacotherapy, as well as the successful implementation of CBT and algorithmic approaches by physician extenders within primary care settings for other disorders, this approach has promise for the treatment of GAD. Research is now clearly needed to evaluate the feasibility and effectiveness of collaborative approaches to the treatment of GAD within primary care settings.

CONCLUSION

In conclusion, this review has clearly documented that GAD is prevalent in primary care and relatively poorly recognized due to the somatic presentations of the illness, the frustrating nature of some of the patients, and the competing demands of the medical care system. Providing efficacious treatment to primary care for GAD will require improving provider-familiarity knowledge and increasing patient engagement through care system alterations such as the collaborative care approach noted above.

Disclosure of off-label usage: The authors have determined that, to the best of their knowledge, no investigational information about pharmaceutical agents has been presented in this article that is outside U.S. Food and Drug Administration–approved labeling.

REFERENCES

1. Roy-Byrne P, Katon W. Generalized anxiety disorder in primary care: the precursor/modifier pathway to increased health care utilization. J Clin Psychiatry 1997;58(suppl 3):34–38
2. Rickels K, Rynn M. Overview and clinical presentation of generalized

anxiety disorder. Psychiatr Clin North Am 2001;24:1–17
3. Kessler RC, Dupont RL, Berglund P, et al. Impairment in pure and comorbid generalized anxiety disorder and major depression at 12 months in two national surveys. Am J Psychiatry 1999;156:1915–1923
4. Ormel J, Von Korff M, Uston TB, et al. Common mental disorders and disability across cultures: results from the WHO collaborative study on psychological problems in general health care. JAMA 1994;272: 1741–1748
5. Spitzer RL, Williams JBW, Kroenke K, et al. Utility of a new procedure for diagnosing mental disorders in primary care: the PRIME-MD 1000 study. JAMA 1994;272:1749–1756
6. Leon AC, Olfson M, Broadhead WE, et al. Prevalence of mental disorders in primary care: implications for screening. Arch Fam Med 1995;4: 857–861
7. Tiemens BG, Ormel J, Simon GE. Occurrence, recognition, and outcome of psychological disorders in primary care. Am J Psychiatry 1996;153: 636–644
8. Olfson M, Fireman B, Weissman MM, et al. Mental disorders and disability among patients in a primary care group practice. Am J Psychiatry 1997;154:1734–1740
9. Schonfeld WH, Verboncoeur CJ, Fifer SK, et al. The functioning and well-being of patients with unrecognized anxiety disorders and major depressive disorder. J Affect Disord 1997;43:105–119
10. Weiller E, Bisserbe JC, Maier W, et al. Prevalence and recognition of anxiety syndromes in five European primary care settings: a report from the WHO study on psychological problems in general health care. Br J Psychiatry Suppl 1998;34:18–23
11. Wittchen HU, Kessler RC, Beesdo K, et al. Generalized anxiety and depression in primary care: prevalence, recognition, and management. J Clin Psychiatry 2002;63(suppl 8):24–34
12. Kessler RC, McGonagle KA, Zhao S, et al. Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States: results from the National Comorbidity Survey. Arch Gen Psychiatry 1994;51: 8–19
13. Bridges KW, Goldberg DP. Somatic presentation of DSM III psychiatric disorders in primary care. J Psychosom Res 1985;29:563–569
14. Kroenke K, Jackson JL, Chamberlin J. Depressive and anxiety disorders in patients presenting with physical complaints: clinical predictors and outcome. Am J Med 1997;103:339–347
15. Kane FJ Jr, Harper RG, Wittels E. Angina as a symptom of psychiatric illness. South Med J 1988;81:1412–1416
16. Wulsin LR, Arnold LM, Hillard JR. Axis I disorders in ER patients with atypical chest pain. Int J Psychiatry Med 1991;21:37–46
17. Logue MB, Thomas AM, Barbee JG, et al. Generalized anxiety disorder patients seek evaluation for cardiological symptoms at the same frequency as patients with panic disorder. J Psychiatr Res 1993;27:55–59
18. Walker EA, Roy-Byrne PP, Katon WJ, et al. Psychiatric illness and irritable bowel syndrome: a comparison with inflammatory bowel disease. Am J Psychiatry 1990;147:1656–1661
19. Lydiard RB, Fossey MD, Marsh W, et al. Prevalence of psychiatric disorders in patients with irritable bowel syndrome. Psychosomatics 1993;34: 229–234
20. Jones GN, Ames SC, Jeffries SK, et al. Utilization of medical services and quality of life among low-income patients with generalized anxiety disorder attending primary care clinics. Int J Psychiatry Med 2001;31: 183–198
21. Kennedy BL, Schwab JJ. Utilization of medical specialists by anxiety disorder patients. Psychosomatics 1997;38:109–112
22. Souetre E, Lozet H, Cimarosti I, et al. Cost of anxiety disorders: impact of comorbidity. J Psychosom Res 1994;38(suppl 1):151–160
23. Katon W, Von Korff M, Lin E, et al. Distressed high utilizers of medical care: DSM-III-R diagnoses and treatment needs. Gen Hosp Psychiatry 1990;12:355–362
24. Lin EH, Katon W, Von Korff M, et al. Frustrating patients: physician and patient perspectives among distressed high users of medical services. J Gen Intern Med 1991;6:241–246
25. Ormel J, Koeter MW, van der Brink W, et al. Recognition, management, and course of anxiety and depression in general practice. Arch Gen Psychiatry 1991;48:700–706
26. Nisenson LG, Pepper CM, Schwenk TL, et al. The nature and prevalence of anxiety disorders in primary care. Gen Hosp Psychiatry 1998;20:21–28
27. Wang PS, Berglund P, Kessler RC. Recent care of common mental disorders in the United States: prevalence and conformance with evidence-based recommendations. J Gen Intern Med 2000;15:284–292
28. Young AS, Klap R, Sherbourne CD, et al. The quality of care for depressive and anxiety disorders in the United States. Arch Gen Psychiatry 2001;58:55–61
29. Meredith LS, Sherbourne CD, Jackson CA, et al. Treatment typically provided for comorbid anxiety disorders. Arch Fam Med 1997;6:231–237
30. Roy-Byrne PP, Stein MB, Russo J, et al. Panic disorder in the primary care setting: comorbidity, disability, service utilization, and treatment. J Clin Psychiatry 1999;60:492–499
31. Roy-Byrne P, Russo J, Dugdale DC, et al. Undertreatment of panic disorder in primary care: role of patient and physician characteristics. J Am Board Fam Pract 2002;15:443–450
32. Duan N, Braslow JT, Weisz JR, et al. Fidelity, adherence, and robustness of interventions [editorial]. Psychiatr Serv 2001;52:413
33. Katon W, Rutter C, Ludman EJ, et al. A randomized trial of relapse prevention of depression in primary care. Arch Gen Psychiatry 2001;58: 241–247
34. Culpepper L. Generalized anxiety disorder in primary care: emerging issues in management and treatment. J Clin Psychiatry 2002;63(suppl 8): 35–42
35. Eisenthal S, Emery R, Lazare A, et al. "Adherence" and the negotiated approach to patienthood. Arch Gen Psychiatry 1979;36:393–398
36. Schulberg HC, Block MR, Madonia MJ, et al. Treating major depression in primary care practice: eight-month clinical outcomes. Arch Gen Psychiatry 1996;53:913–919
37. Chilvers C, Dewey M, Fielding K, et al. Antidepressant drugs and generic counselling for treatment of major depression in primary care: randomised trial with patient preference arms. BMJ 2001;322:772–775
38. Dwight-Johnson M, Sherbourne CD, Liao D, et al. Treatment preferences among depressed primary care patients. J Gen Intern Med 2000;15: 527–534
39. Brody DS, Khaliq AA, Thompson TL. Patients' perspectives on the management of emotional distress in primary care settings. J Gen Intern Med 1997;12:403–406
40. Bedi N, Chilvers C, Churchill R, et al. Assessing effectiveness of treatment of depression in primary care: partially randomised preference trial. Br J Psychiatry 2000;177:312–318
41. Hazlett-Stevens H, Craske MG, Roy-Byrne PP, et al. Predictors of willingness to consider medication and psychosocial treatment of panic disorder in a primary care sample. Gen Hosp Psychiatry 2002;24: 316–321
42. Jorm AF, Medway J, Christensen H, et al. Public beliefs about the helpfulness of interventions for depression: effects on actions taken when experiencing anxiety and depression symptoms. Aust N Z J Psychiatry 2000;34:619–626
43. McDonald HP, Garg AX, Haynes RB. Interventions to enhance patient adherence to medication prescriptions: scientific review. JAMA 2002; 288:2868–2879
44. Hoffman L, Enders J, Lou J, et al. Impact of an antidepressant management program on medication adherence. Am J Manag Care 2003;9:70–80
45. Miller WR, Rollnick S. Motivational Interviewing: Preparing People to Change Addictive Behavior. New York, NY: Guilford Press; 1991
46. Katon W, Robinson P, Von Korff M, et al. A multifaceted intervention to improve treatment of depression in primary care. Arch Gen Psychiatry 1996;53:924–932
47. Roy-Byrne P, Katon W, Cowley DS, et al. A randomized effectiveness trial of collaborative care for patients with panic disorder in primary care. Arch Gen Psychiatry 2001;58:869–876
48. Unutzer J, Choi Y, Cook IA, et al. A web-based data management system to improve care for depression in a multicenter clinical trial. Psychiatr Serv 2002;53:671–673, 678
49. von Korff M, Gruman J, Schaefer J, et al. Collaborative management of chronic illness. Ann Intern Med 1997;127:1097–1102