

# Treating Minority Patients With Depression and Anxiety: What Does the Evidence Tell Us?

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**Objective:** The purpose of this study is to examine the current state of knowledge regarding treating ethnic/racial minority patients with mood and anxiety disorders, emphasizing data-based studies whenever possible. **Method:** This article reviews the evidence on poorer access and quality of care for minorities, the biological and cultural differences between minority and majority populations that may impact care and outcomes, and recent studies that address minority treatment response and outcomes both alone and in comparison to majority groups. **Results:** Numerous impediments to appropriately treating anxious and depressed minority patients remain. Underutilization and poor quality of mental health care in minorities is due to less-than-favorable illness and treatment beliefs that affect adherence and outcome, stigma, clinician failure to engage the patient, poor patient activation and biological differences that may impact pharmacotherapy choice. However, though limited in number, some studies do indicate that when appropriate treatment is well-delivered to minorities, results are comparable to those seen among Caucasian patients. **Conclusions:** The clinician treating members of minority groups must consider differential personal elements, from the biological to the cultural, to achieve treatment success. The limited available data do suggest that minority patients can be successfully treated with available interventions. Of primary importance is for researchers to increase the number of carefully designed intervention studies that allow for ethnic/ racial minority-specific analyses.

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## 1. INTRODUCTION

In this article, we examine the current state of knowledge regarding treating racial and ethnic minority patients with mood and anxiety disorders. Past literature has amply documented significant disparities in access to, and quality of, mental health care received by many ethnic/racial minorities in the United States. An emerging literature examines outcomes of care for ethnic/racial minorities. In this article, we briefly review the evidence on poorer access and quality of care and provide a rationale for examining potentially different outcomes of care for ethnic/racial minorities, prior to presenting new evidence about response to and outcomes of care for ethnic/racial minority patients.

The term “minority” encompasses the overlapping, evolving and still elusive terms of “race,” “ethnicity” and “culture.” A simple approach to

these concepts is nicely outlined in the minority supplement to the Surgeon General’s Report on Mental Health (1). The term “race” does not denote a biological category, but rather a social construct. This construct serves to group people together according to characteristics that are socially significant (e.g., visible physical traits such as skin color) and is often the basis for discrimination. The term “ethnicity” is used to group people together on the basis of a shared heritage (e.g., history, language, rituals, food preferences). Race and ethnicity are only partially overlapping concepts because individuals from the same race may have quite different heritages (e.g., Caribbean and American blacks; Native Hawaiians and Vietnamese Americans). Finally, the term “culture” denotes a shared set of beliefs, norms or values that will influence the meaning given to life events and experiences. People from the same ethnic or racial group may well

have significant cultural differences, quite evident in the differences among Mexican American and Cuban American Latino groups, which contribute to the controversy about for whom to use the term “Latino” vs. the term “Hispanic” (2). (For simplicity, we have adopted whichever term was used by the respective cited study.) Cultural differences are common among Caucasian groups as well. These differences may be a product of ethnicity (e.g., Italian Americans), religion (e.g., Catholicism, Judaism) or geographic region (e.g., Southern United States).

In this article, we attempt to identify studies in which various ethnic/racial minority groups have been contrasted with Caucasian groups that are presumed to represent the dominant “Western” culture of Euro-America with its white Judeo Christian history and cultural landscape. It must be remembered, however, that all of these constructs are inherently imprecise, that various identifications are not always fixed or easily determined, that concepts of race/ethnicity should not be used as a proxy for genetic variation and that interpretation of any differences needs to consider the role of a host of conceptually relevant factors such as discrimination, social class, SES, environmental exposures, educational level, spoken language, religion, country of origin and time in country of residence (3).

The recent report of the Surgeon General on mental health documented significant disparities in access to and the quality of mental health care received by members of racial and ethnic minority groups in the United States (4). Ethnic/racial minorities lack access in part because they are more likely to be uninsured than are Caucasians, and Caucasian service providers are proportionately more available than are ethnic/racial minority service providers (1). Not surprisingly, members of African American and Hispanic American minority groups also are less likely to obtain treatment for either depression or anxiety than are their Caucasian counterparts (5). Among those who do receive care, two studies with nationally representative samples find that African American and Latino minorities are less likely to receive quality care than are Caucasians (6, 7). Even among insured population of U.S. federal employees, Caucasians are 1.7 times as likely to visit an outpatient mental health provider, and make 2.64 more mental health visits, per year, compared to both African Americans and Hispanic Americans (8). Unfortunately, most large epidemiological studies of access and care have not included sufficient samples of Asian American/Pacific Islanders or Native Americans to provide comparative rates of care and quality of care. However,

data from the Chinese American Psychiatric Epidemiological Study conducted in 1993 and 1994 indicate low rates of insurance among Chinese Americans living in Los Angeles County, with those living in areas with the highest proportion of Chinese Americans having the lowest likelihood of having medical insurance (9). An earlier study, which sampled patients based on the first wave of the Epidemiologic Catchment Area study, showed that Asian Americans had a lower rate of utilization of mental health services compared to Caucasians (10), and a summary of older studies suggests that, among Asian Americans who use services, severity of illness is high, suggesting a delay in seeking treatment (1). The geographic, linguistic, cultural and economic heterogeneity of Asian American/Pacific Islander groups, including the broad range of acculturation that makes some subgroups less disadvantaged than others, makes it inadvisable to characterize them as a single entity and has limited their inclusion in some larger surveys (11). As the clustering of this diverse group has, until recently, been the norm, the interpretation of data collected from “Asian American” subjects must be done with the understanding that the results may be difficult to generalize to a specific ethnic group (12). Although data on native American populations are sparse, only 20% utilize the Indian Health Service that is federally mandated to provide care for members of recognized tribes, only half have employer-based insurance (in contrast to 72% for Caucasians) and a quarter have no health insurance (13). Thus, it appears that, overall, ethnic/racial minorities seem to have poorer access to care. Even when access appears to be equalized by insurance status, barriers other than cost, such as systems issues, language, stigma, cultural beliefs about illness and treatment, and personal experience can contribute to continued poor access, and for those who do follow through and make a visit, poorer quality of care.

The minority-focused supplement to the Surgeon General’s Report on Mental Health (1) reviewed in detail the limited science base on racial and ethnic minority mental health, including data on treatment. Analyses of participants in psychiatric clinical trials conducted between 1986 and 1994 documented a surprising and shocking absence of ethnic/racial minority participants. No ethno-specific analyses were reported for 25 trials involving 2813 schizophrenic patients, for 16 trials involving 921 bipolar patients and for 27 trials involving 3860 depressed patients. Adequate samples of clearly identified ethnic/racial minorities are missing from most of these trials. For example, only 7% of those participating in depression trials were clearly identified as an ethnic or racial minority.

Although this situation has recently improved under impetus from the NIMH, there still remains a dearth of evidence-based information about the treatment of depression and anxiety in ethnic/racial minority patients, and reviews of this area have been more anecdotal, impressionistic or, at best, observational and descriptive, rather than evidence based.

Now that the rationale for examining this area is clear, this article will review the biological and cultural bases for possible differences in treatment participation, response and outcome, and the available studies that examine either alone or, in comparison with Caucasian populations, how members of racial and ethnic minority groups with depression and anxiety respond to evidence-based treatments. The review concludes with some practical approaches to improve treatment and care for this underserved population that might be utilized by clinicians in their day-to-day practice.

## **2. POSSIBLE BIOLOGICAL BASES FOR PHARMACOTHERAPY RESPONSE DIFFERENCES IN ETHNIC/RACIAL MINORITY POPULATIONS**

Numerous factors affect the way an individual will respond to medication, including biological factors, cultural factors, environmental factors and factors related to the medication itself (formulation, dose and route of administration) (14). Medication effects are determined in large part by pharmacokinetics and pharmacodynamics. These processes are, to a degree, genetically determined, because genes control the expression and function of enzymes responsible for drug metabolism, as well as proteins that modulate the action of neurotransmitter drug targets (e.g., transporters, receptors) (15). Because the distribution of genetic polymorphisms varies across some ethnic and racial groups, this distribution will create pharmacokinetic and pharmacodynamic differences that could result in differential medication sensitivity or efficacy for different racial and ethnic groups (15). These polymorphisms can also interact with lifestyle variations (e.g., diet and use of alternative medicine) to produce gene-environment interactions and effects that would not occur on a genetic basis alone (15).

The drug metabolism polymorphisms of major interest involve alleles that code for essentially inactive cytochrome P-450 proteins, with the probability of an allele in a population determining the frequency of intermediate (heterozygous) and poor (homozygous) metabolizers. Rates of poor metabolizers are largest for Asian, rather than Latino or African American populations, although there are

also differences between European and other ethnic and racial groups, and it is likely there are many unknown and undiscovered polymorphisms that could be expressed differently in these various groups. Cytochrome P-450 2D6, which metabolizes several antidepressants, is less active in East Asians, which poses the risk for higher blood levels and more side effects within this population. In contrast, some individuals may have multiple copies of functional alleles, causing them to be “ultra-rapid metabolizers.” Such individuals appear to be overrepresented in some Arab and Ethiopian populations and would be less likely to attain the adequate blood levels necessary for optimal clinical response (15, 16). Cytochrome P-450 2C19, which is involved in the metabolism of some benzodiazepines, can also have different rates of activity according to population. Individuals of East Asian descent, for example, are more likely to be “poor metabolizers” of drugs that are substrates of cytochrome P-450 2C19, and are, thus, more susceptible to higher blood levels compared to other populations with the same dosages.

In addition to genetic factors, certain cultural practices that impact biology can interact with drug metabolism. For example, CYP1A2, which metabolizes several antipsychotic and antidepressant drugs, is “highly inducible,” meaning that its activity can be increased by multiple external stimuli that may vary according to cultural practices. In particular, diet, caffeine and tobacco use, and hydrocarbon cooking byproducts all impact the activity of 1A2 (15). As another example, the metabolic action of enzyme CYP3A4, which is involved in the metabolism of more medications than any other enzyme, including many psychotropics such as benzodiazepines and some antidepressants, can be readily blocked by grapefruit juice but increased by St. John’s Wort (15, 17). Furthermore, because of the paucity of pharmacokinetic studies of herbal remedies, it is likely that other herbal remedies have either enhancing or dampening effects on drug metabolism, which have not yet been identified. Because use of herbal products varies greatly across cultures (18), this is another potential source of differences in pharmacokinetics among ethnic/racial minority populations. Finally, *changes* in diet can have a powerful pharmacokinetic effect (e.g., the metabolism of African people living in their native land, eating their traditional foods, is known to change significantly when they immigrate to Europe and change their diet) (19). Therefore, recent immigration can be an important consideration in drug metabolism.

Genetic variation also can have a major effect on the pharmacodynamics of medications (their in-

trinsic effects at sites of action) by impacting the encoding of effector proteins, which transduce the effects of molecules after they bind to receptor sites in the brain. Many antidepressants act through the major monoamine systems, especially the serotonergic system. One allele of emerging interest in pharmacogenomic studies is the promoter region of the gene coding for the serotonin transporter, which mediates the transport and reuptake of serotonin. The prevalence of the “long” allele for this promoter region (which increases the transcription and activity of the transporter resulting in more rapid and complete reuptake of serotonin back into the nerve terminal) is greatest among people with African lineage (70%), whereas Caucasians have a rate of roughly 50% and East Asians only 17% (20).

In addition, evidence suggests that there are racial and ethnic differences not just in the distribution of this long allele, but also in its behavioral consequences. For example, two studies conducted with Caucasian populations found a positive correlation between having the long allele and response to antidepressants, whereas the opposite was found in a study of Asian participants. In this study, response to antidepressants was greatest among subjects whose genotypes were homozygous for the short allele (21–23). A more recent study examined potential intervening mechanisms between genetic factors and behavioral responses to medications, comparing Caucasian and African American groups. In this study, being homozygous for the short allele resulted in opposite effects in African Americans than in Caucasians. African Americans homozygous for the short allele had higher levels of the metabolite 5-HIAA in their CSF (compared to African Americans with at least one long allele), whereas Caucasians of the same genotype had significantly lower levels of 5-HIAA (compared to Caucasians with at least one copy of the long allele) (24).

These studies suggest that biological bases of potential differences in responses to pharmacotherapy between ethnic/racial minority populations are complex. Although there is some evidence of differences in specific genes known to affect medication effectiveness, it also appears that the same allele may function differently in different racial or ethnic groups, both at a behavioral and at a more “upstream” biological level, perhaps as a consequence of differences in additional linked genes that produce counteracting effects. Future studies would benefit from taking these various influences into account.

Catechol-*O*-methyltransferase (COMT) activity, important for the metabolism of dopamine, is

also influenced by a single nucleotide mutation that results in lower enzymatic activity. This mutation has been shown to vary differentially across ethnicities (26% in African Americans, 18% in Asians and 50% in Caucasians). Recent work indicating that this genotype may be related to risk factors for the development of schizophrenia suggests that it has great potential clinical importance (25). Activity of COMT is also related to the likelihood of experiencing side-effects from levodopa in the treatment of parkinsonism, and the different ethnic distributions of this mutation could help to explain the higher percentage of Asians that respond poorly to levodopa (26).

In considering the small but growing literature, suggesting that African Americans and Asian Americans may, on average, show proportional differences in certain polymorphisms affecting both drug metabolism and cellular proteins that modulate receptor effects, it should be emphasized that this research looks for variations in rates of these differences across populations, not in absolute population differences. In any individual, for example, genetic variation in the metabolism of medications cannot be deduced from racial or ethnic group membership alone as all rates of metabolism can be found in each of the major “racial” groupings that have been examined.

### **3. POSSIBLE NONBIOLOGICAL CONTRIBUTIONS TO POOR TREATMENT OUTCOME AMONG ETHNIC/RACIAL MINORITIES**

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#### **3.1. CONTRIBUTIONS OF THE CLINICIAN**

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There are several ways that practicing clinicians may contribute to poorer quality of care of ethnic/racial minority populations, which have implications for the treatment of anxiety and depression specifically. Studies have shown that both the diagnostic and treatment practices of clinicians may vary according to the minority status of the patient they are seeing. For example, the odds that a mental health disorder will be detected have been shown to vary across races and ethnicities. One study, using the Medical Outcomes study database, which provided depression ratings and diagnosis on representative subsamples of over 19,000 primary care patients, found that the odds of detection of major depression in primary care patients were significantly reduced for African American (OR 0.42) and Hispanic American (OR 0.29) patients (but not Asian American patients), compared to Caucasian patients (27). In another study, using data



from the National Ambulatory Medical Care Survey, the same lower rate of detection of a depression diagnosis for African American and Hispanic patients was found in both 1992–1993 and 1996–1997, although the gap in diagnostic recognition between Caucasian and non-Caucasian patients had narrowed by 1997, with the greatest rate of improvement in diagnosis for Hispanic patients (5).

A number of studies have also documented that clinicians provide different types and quality of treatment across ethnic/racial minority groups. In one study conducted in East London, prescription rates for antidepressants and anxiolytics in psychiatric clinics varied according to the area of the city and were lowest in the area with a high proportion of Asian immigrants (28). Another study in this same area showed that, even among those patients who received prescriptions, patients of Asian descent received lower doses and were kept on their medication for a shorter amount of time (roughly 40% as long) compared with Caucasian patients (29). Although lower medication dosing in patients of Asian descent might be helpful in patients who are “slow metabolizers” (as has been found in some studies), there is no evidence that this was the reason for this prescription pattern. In the United States, a large-scale study of 13,065 Medicaid patients who presented with depression between 1989 and 1994 similarly found that African Americans were provided prescriptions at a lower rate than Caucasians (27% vs. 44%). In addition, Caucasians were significantly more likely to receive the newer, safer and more tolerable SSRIs for their depression, whereas African Americans were more likely to be prescribed the older, less tolerable and less safe tricyclic antidepressants (30).

The factors contributing to these treatment differences are not clear, although clinician bias, stereotyping and uncertainty in clinical decision making and communication are likely factors, according to the recent Institute of Medicine report on health care disparities (31). In one example of stereotyping, a Dutch survey of mental health clinicians found that they believed that patients lacking “social resources” are less likely to profit from mental health treatment (32). Although these patients were not identified as ethnic/racial minorities, ethnic/racial minority populations have traditionally had, on average, fewer socioeconomic resources (1). Impediments in communication between patients and physicians are another important factor, especially those who are not racially or ethnically “matched.” A recent study, using a data set of audiotapes and transcripts of physician-patient encounters in primary care clinics, found that

communication between Caucasian providers and patients is more inhibited for Hispanic than for non-Hispanic patients. More specifically, these non-Hispanic physicians were more likely to provide information on antidepressants to non-Hispanic patients than to Hispanic patients, and, in turn, these non-Hispanic patients were also more likely than Hispanic patients to initiate discussions about their antidepressant use with the provider (33). Nonetheless, ethnic matching of patients and their providers may not be feasible in general. For example, in 1996, there were only an estimated 29 American Indian or Native Alaskan psychiatrists in the United States (1).

### 3.2. CONTRIBUTIONS OF THE PATIENT

As discussed earlier, poor quality of care can be the result of problems with access to treatment, as well as potential clinician errors in diagnosis due to bias, stereotyping or uncertainty, after ethnic/racial minority patients have successfully arrived at the treatment setting. In addition to this, patients may fail to engage in and accept treatment for a variety of understandable reasons rooted in their own cultural background and personal experience (34–37). Although these differences in “preferences” and “care seeking” are not seen as technical contributors to “health disparities” according to the recent Institute of Medicine report (31), they are important determinants of receiving quality care, as well as important determinants of access even when cost and insurance are not an issue.

In general, a patient’s past experiences, both cultural and personal, will strongly influence their beliefs, which in turn will shape their attitudes and/or preferences. Attitudes or preferences will strongly determine someone’s acceptance of treatment as well as their “readiness to change.” This will, in turn, influence the likelihood that a person will seek treatment, as well as how adherent to treatment that person will be.

Many ethnic/racial minorities report histories of adverse experiences with health professionals. In surveys commissioned by the Kaiser Family Foundation and the Commonwealth Fund, vastly more African Americans and Hispanic Americans endorsed the statements, “Health professionals judged me unfairly or disrespected me” and, “Health professionals treated me badly because of my racial/ethnic background” (38, 39). In another study, African Americans attending a primary care clinic rated their physician visits as “less participatory” than Caucasian patients. This same study also found that African American patients in a race-concordant physician relationship rated visits more

participatory than those in a race-discordant physician relationship (40). These less-than-favorable experiences undoubtedly shape the beliefs that ethnic/racial minorities have about the health care industry and its providers, and their degree of comfort in seeking and participating in care.

A separate but related influence on whether or not an individual seeks health services is the degree to which patients' views of illness and treatment are consistent with physician views. All cultures and societies have lay explanatory models of health and its maintenance. Many individuals from ethnic/racial minority groups have views that are discrepant from Western biomedical models. For example, Asians' primarily sociocentric approaches to problem solving are at odds with "Western individualistic ideals of self-actualization and independence," and could impact treatment seeking and adherence (41). Even among individuals from the majority group, views of health and health care may differ from those of the dominant medical profession (as can be seen, e.g., in the increase in interest in alternative medicine practices). Such discrepancies may decrease the likelihood that members of ethnic/racial minority groups will seek treatment in traditional Western settings. This may be particularly the case among ethnic/racial minority groups that have "closed" (as opposed to "open") social relationships, in which strong ties with close associates (friends/family) reinforce these beliefs (42, 43). It is also strongly the case among the Native American population (1).

Beliefs in an "external locus of control," as well as fatalistic beliefs, are generally believed to be more often associated with ethnic/racial minority patients than with Caucasian patients, and this may similarly affect health services use. Specifically, African Americans and Hispanic Americans have been shown to feel more strongly than Caucasians that they have less control over their own health status (42, 44). Similarly, psychological distress in people of Asian Indian origin (where the population is 80% Hindu) is largely explained in a religious framework (45). These attitudes could result in a greater tendency toward passivity in health care encounters and a requirement for more activity and assertiveness on the part of the clinician to make sure that all concerns are identified and addressed.

Recent research has similarly found differences between ethnic/racial minority groups in attitudes and beliefs about treatment for anxiety and depression specifically. For example, Cooper et al (46) found that African Americans and Hispanic Americans had lower odds than Caucasians of finding antidepressant medications acceptable. African Americans were slightly less likely than Caucasians

to find counseling acceptable, whereas Hispanic Americans were slightly more likely to find counseling acceptable than Caucasians. These findings on treatment preference were replicated by Dwight-Johnson, who found that African American primary care patients preferred counseling rather than medication, and by Hazlett-Stevens, who found that both African American and Asian American patients were less likely than Caucasian patients to prefer medication, although equally likely to prefer counseling (47, 48). In a 2005 study of primary care patients with panic disorder, Wagner et al (49) found that non-Caucasian patients had less favorable views of both psychotropic medication and psychotherapy than Caucasians. Finally, African American patients were more likely to feel that prayer might be helpful than Hispanic Americans or Caucasians (46).

Beliefs about mental disorders, specifically, may also influence treatment seeking, and there is evidence that members of some ethnic/racial minority groups may experience a greater sense of stigma than others for disorders such as anxiety and depression. For example, in one study, African American women with panic experienced substantial stigmatization about their panic attacks, stemming from their family, as well as wider social networks, including their church (50). In a 1981 sample of university students, Hispanics were more likely to have negative views of mental illness than Caucasians (51). In another study, it was found that Latina women were more apt to endorse beliefs that problems should be kept within the family unit (52). Alvidrez and Azocar (53) also found that Latinas with less education were more likely to anticipate stigma-related barriers to treatment. A recent qualitative study also shows that stigma and shame continue to influence the reluctance of people in the Asian community from utilizing mainstream mental health services (54). Interestingly, integrating mental health care into the primary care medical setting has been shown to reduce stigma-related barriers to accepting mental health care in the Asian American community (41).

In addition to differences in treatment-seeking behavior, there is evidence of differences in adherence to treatment between racial and ethnic minority groups. In a 1999 study of major depression patients in primary care, African Americans were more likely to be adherent to interpersonal psychotherapy than Caucasians (100% vs. 76%). Though both cohorts were less likely to adhere to their medication regimen than to psychotherapy, African Americans had a lower medication adherence rate than Caucasians (35% vs. 61%) (55). In a separate nefazodone trial, a relatively high dropout rate was

observed in depressed Hispanic patients (42%), compared with the overall dropout rate in the nefazodone clinical trial database (56). Another study, done in New Mexico at various university-affiliated clinics, found that Hispanic patients were significantly less adherent to their antidepressants than their Caucasian counterparts (33). Similar findings were found in a sample of Southeast Asians. Interestingly, in this sample, the Cambodian subgroup, who also suffered from PTSD, was more medication adherent than either the Vietnamese or Mien patient subsamples, suggesting that compliance was affected by the presence of PTSD (57).

Level of adherence to medication treatment is likely linked to beliefs about medication treatment and psychiatric disorders, as supported by recent qualitative interviews of patients enrolled in a study of treatment of panic disorder in primary health care settings (58). Nonadherent patients were disproportionately members of ethnic/racial minority groups. Negative medication beliefs were frequent among these patients. "Normalizing" attitudes were also frequently voiced (i.e., "panic is just due to stress, and it will pass"). Several patients also mentioned that they wanted to "do it on my (their) own." Similar types of preconceived beliefs and attitudes undermine the effort of the provider to maintain a patient's adherence to recommended treatment, whether pharmacotherapeutic or psychotherapeutic. Multiple studies have indicated an increased level of treatment compliance among those enrolled in preferred modalities of treatment (59, 60). Because a number of studies link poor treatment adherence to treatment outcome (61, 62), these findings may have important implications for treatment effectiveness.

#### 4. TREATMENT STUDIES

Early studies of African American treatment response tended to show mixed results. Preliminary studies found that African Americans and Caucasians respond similarly to both medication and behavioral treatment for PTSD (63, 64), whereas African Americans were found less responsive than Caucasians in a pilot study of behavioral treatment for agoraphobia (65). In another study of the impact of psychotherapy or antidepressant medications given to primary care medical patients, African Americans proved similar to Caucasians in symptom resolution, but African Americans showed less improvement than Caucasians in functioning (55). A 1998 study of depressed HIV patients found that African American patients were less likely to respond to treatment with fluoxetine than Caucasians (66). In other studies, African

American and Caucasian children and adults (67, 68) responded equally well to anxiety interventions.

Three early studies examined treatment outcome of Latinos with depression, but without including comparison groups. Care for depression was given to unmarried Puerto Rican mothers with depressive symptoms (69), to Mexican American women (70) and to Puerto Rican adolescents (71). All found that those who were treated had favorable results. Three recent studies have also examined outcome for anxiety disorders. A 2003 study of exposure-based CBT for phobic and anxiety disorders was effective, and similarly so, for both Hispanic/Latino and European American youths (aged 6–16 years) (72). A group of pioneering researchers in the Boston, MA, area has published exciting work demonstrating the efficacy of culturally modified cognitive-behavioral therapy for two different groups of refugees from Southeast Asia. One of these studies, a pilot project by Otto et al (73, 74), found that treatment-refractory Cambodian refugees with PTSD did better after receiving a combined treatment of sertraline and CBT vs. sertraline alone. The second study, a pilot project by Hinton et al (75), found that a culturally adapted CBT regimen significantly improved symptoms and reduced the severity of panic attacks experienced by treatment-resistant Vietnamese refugees suffering from PTSD and experiencing panic attacks.

A study of multiethnic, economically disadvantaged, English-speaking and Spanish-speaking patients with major depressive disorder found no difference in response to CBT across ethnic groups (76). Case management augmentation to the therapy was effective in engaging and keeping patients in care across all ethnic groups. However, augmenting cognitive-behavioral therapy with supplemental case management was shown to improve response for Spanish-speaking depressed patients, but not for English-speaking patients. In post hoc analyses, the supplemental case management was found to be less effective for African Americans.

Recently, larger studies have examined response to care for ethnic/racial minority patients. Minority status predicted poor paroxetine response in a study of primary care panic patients. Although roughly 30% of subjects were "non-White" Americans, non-Whites comprised 45% of the nonresponders and only 22% of the responders (77). However, lower income was an even stronger predictor in the regression, suggesting that, in this sample, which included many poor Caucasian patients, poverty was a more powerful determinant than minority status.

Despite the finding in this study of poor response

of impoverished patients, two recent studies of depression have found interventions effective for poor women. Female primary care depression patients seen in public sector clinics in Santiago, Chile, were found to respond significantly better to a multifaceted, structured, "stepped-care" model than to treatment-as-usual (78). This 3-month intervention included a psychoeducational group led by a nonmedical health worker, structured and systematic follow-up, and drug treatment for patients with severe depression. In this study of impoverished women, 70% of the intervention women were recovered as compared with 30% of the usual care group. A study comparing medication intervention, psychotherapy intervention and usual care for low-income, young ethnic/racial minority women in the United States found that both interventions reduced depression ratings and improved social functioning significantly more than the usual care. Medication also improved instrumental role functioning, although psychotherapy did not (79).

Ethnic/racial minority patients have also been found to respond well when the impact of quality improvement interventions for depression is evaluated in primary health care settings. In a recent study of 46 primary care practices in 6 U.S. managed care organizations, the impact of two QI programs that trained local experts to educate clinicians, nurses to educate and follow-up with patients and psychotherapists to conduct CBT were compared with care as usual. The interventions significantly improved appropriate care for depression similarly within each ethnic group. However, the interventions significantly decreased the likelihood that Latinos and African Americans would report probable depression at 6 and 12 months of follow-up, whereas the Caucasian intervention sample did not differ from controls in reported probable depression (80).

Two recent analyses further document the comparable response to treatment of ethnic/racial minority patients with depression and anxiety. A pooled analysis of the large paroxetine clinical trials database showed that response and remission rates for patients with both depression and various anxiety disorders were similar in Latino, African American and Asian American, compared with Caucasian patients (81). Interestingly, this study replicated a previous finding (57) of a higher placebo response rate in Latino patients. Finally, a secondary analysis of the large primary care IMPACT study of geriatric depression treatment, which provided stepped care with both medications and problem solving therapy, documented comparable response in minority and majority patients (82).

## 5. APPROACHES TO IMPROVING TREATMENT

From our review of the literature, two consistent findings appear to be emerging. First, ethnic/racial minorities are, with some exceptions (e.g., highly acculturated citizens of Indian subcontinental heritage), significantly less likely to obtain care than their nonminority counterparts. Access to care appears limited by insurance and available providers, but even insured ethnic/racial minorities are less likely to be receiving adequate care than are Caucasians, reinforcing the importance of multiple other factors reviewed above. Focused efforts to increase the amount and quality of mental health care available to people in the service sector where they are most likely to be encountered, in this case, primary care, may be more efficient than broader efforts to restructure the delivery of specialty focused care, though this is also important. Receiving care in the primary care setting may work to reduce the stigma of mental health care, although any medical care system may not synergize well with certain cultural beliefs about illness and treatment (41).

Despite problems in access to care, an emerging literature suggests that evidence-based interventions are likely to be effective among ethnic/racial minorities. Recent studies suggest that such care is effective even among economically disadvantaged ethnic/racial minorities. It should be noted, however, that many of these studies were designed to enhance delivery of treatment by overcoming barriers to care and did target barriers specific to the ethno-racial patients in their studies as part of their treatment delivery strategy. Thus, facilitating treatment session attendance by assisting patients with childcare, transportation and other remedies to overcome logistical barriers seems to be a beneficial strategy that clinics might pursue.

Discrepancies between the type, quality and effectiveness of treatments provided to ethnic/racial minority populations and those provided to Caucasian populations are prevalent. As there are numerous apparent causes for these discrepancies, there are also a variety of means of improving the treatment of anxiety and depression among ethnic/racial minority populations. In order to provide adequate and effective care to ethnic/racial minorities, it is imperative to understand and appreciate past experiences and current beliefs, and how these have in turn shaped attitudes, preferences and views of the "acceptability" of treatment. Beyond simply understanding a patient's opinions, it is always advisable to try to accommodate a patient's wishes. For instance, if possible, matching treatment modality with the preferences of the patient is likely to



increase adherence, as is referring a patient to someone of their own ethnicity, race or background, or to an ethnicity-specific treatment program, although the latter is not always feasible given the paucity of available minority clinicians and specific programs (83). Given this fact, it is vital for practitioners to recognize “characteristic” cultures of various ethnic/racial minority groups and how these cultural influences contribute to these factors. One must be cautious, however, that, while observing and recognizing common cultural persuasions, one does not stereotype members of ethnic/racial minority groups. It is this kind of stereotyping that may, in situations where cognitive uncertainty is present, contribute to unconsciously biased clinician decision making (31).

Evidence-based procedures for increasing the cultural acceptance of specific treatment modalities are scarce. Suggestion has been made that assessing and directly addressing treatment concerns held by patients are a way to enhance treatment among ethnic/racial minority patients (49).

Psychotherapeutically, Otto et al (73, 74) and Hinton et al (75) demonstrated that CBT adapted for the specific illness, treatment beliefs and world views of Southeast Asian cultures has beneficial effects on treatment adherence and outcome in Cambodian and Vietnamese refugees with PTSD. It is likely that the overall strategies used by these authors to tailor CBT could be adapted to other cultures and populations.

Psychopharmacologically, clinicians may benefit by increasing the amount and level of communication with a patient that revolves around medication treatment. Clinicians must be cognizant of the amount of information they convey to mainstream patients and try to provide this information uniformly across patient populations. Further, it may be of value for clinicians to find out if a patient possesses less negative feelings toward herbal remedies vs. mainstream psychiatric medications. If so, this knowledge can be used by the clinician to assuage the concerns the patient has about modern psychiatric medications. As it has also been shown that the views of a patient's caregiver affects adherence to antidepressant medication, clinicians should involve a patient's spouse or other caregiver in treatment decision making, particularly among those ethnic/racial minority populations that are especially sociocentric (84).

Biologically, pharmacokinetics and pharmacodynamics must be considered by the prescribing clinician. Herbal medication, or other traditional healing practices, is often used disproportionately among certain ethnic/racial minority populations (85). Thus, must be factored in when prescribing

and evaluating response, as it can impact drug metabolism. Due to these biological mechanisms, medication and dose may need to be adjusted to attain blood levels necessary for therapeutic response. Given the current state of the literature, this is particularly imperative for Asian American populations, although limited study suggests that clinicians should consider potential differences in other ethnic/racial minority groups as well. In general, careful monitoring of medication should include slow titration, enhanced sensitivity to the possibility of side effects and drug interactions, and frequent visits or telephone checks.

Although the available studies in this area are scarce, and it is paramount that more are initiated, the available evidence demonstrates fairly comparable efficacy between ethnic/racial minority populations and Caucasian populations with both psychopharmacological and psychotherapeutic treatments. Evidence seems to suggest that providing “enhanced” interventions also improves patient response. It has also been shown that case management strategies are possibly an effective tool to overcome various barriers to treatment that members of ethnic/racial minority groups often face. Of particular importance is understanding that dropout from treatment and suboptimal adherence are continual risks, and addressing these concerns must be an ongoing and evolving process.

## REFERENCES

1. US Department of Health and Human Services, Mental Health, Culture, race, and ethnicity—a supplement to mental health: a report of the Surgeon General. Rockville (MD): US Department of Health and Human Services, Public Health Service, Office of the Surgeon General; 2001.
2. Hayes-Bautista DE, Chapa J. Latino terminology, in race, ethnicity, and health, a public health reader. In: LaVeist TA, editor. San Francisco: Jossey-Bass; 2002. p. 141–59.
3. Kaplan J, Bennett T. Use of race and ethnicity in biomedical publication. *JAMA* 2003;289(20):2709–16.
4. US Department of Health and Human Services, Mental Health: a report of the Surgeon General, Rockville (MD): US Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health; 1999.
5. Skaer TL, Sclar DA, Robison LM, Galin RS. Trends in the rate of depressive illness and use of antidepressant pharmacotherapy by ethnicity/race: an assessment of office-based visits in the United States, 1992–1997. *Clin Ther* 2000;22(12):1575–89.
6. Young AS, Klap R, Sherbourne CD, Wells KB. The quality of care for depressive and anxiety disorders in the United States. *Arch Gen Psychiatry* 2001;58(1):55–61.
7. 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(5): 284–92.
8. Padgett DK, Patrick C, Burns BJ, Schlesinger HJ. Ethnicity and the use of outpatient mental health services in a national insured population. *Am J Public Health* 1994;84(2):222–6.
9. Takeuchi DT, Chung RC, Shen H. Health insurance coverage among Chinese Americans in Los Angeles County. *Am J Public Health* 1998; 88(3):451–3.
10. Zhang AY, Snowden LR, Sue S. Differences between Asian and White Americans' help seeking and utilization patterns in the Los Angeles area. *J Community Psychol* 1998;26(4):317–26.
11. Lee SM. Asian Americans: diverse and growing. *Popul Bull* 1998;53(2): 1–40.
12. Uehara ES, Takeuchi DT, Smukler M. Effects of combining disparate

- groups in the analysis of ethnic differences: variations among Asian American mental health service consumers in level of community functioning. *Am J Community Psychol* 1994;22(1):83–99.
13. Brown ER, Ojeda VD, Wyn R, Levan R. Racial and ethnic disparities in access to health insurance and health care. Los Angeles: UCLA Center for Health Policy Research and the Henry J Kaiser Family Foundation; 2000.
  14. Poolsup N, Li Wan Po A, Knight TL. Pharmacogenetics and psychopharmacotherapy. *J Clin Pharm Ther* 2000;25(3):197–220.
  15. Lin KM, Smith MW, Ortiz V. Culture and psychopharmacology. *Psychiatr Clin North Am* 2001;24(3):523–38.
  16. Daly AK, Brockmoller J, Broly F, Eichelbaum M, Evans WE, Gonzalez FJ, et al. Nomenclature for human CYP2D6 alleles. *Pharmacogenetics* 1996; 6(3):193–201.
  17. Oesterheld J, Kallepalli BR. Grapefruit juice and clomipramine: shifting metabolic ratios. *J Clin Psychopharmacol* 1997;17(1):62–3.
  18. Mackenzie ER, Taylor L, Bloom BS, Hufford DJ, Johnson JC. Ethnic minority use of complementary and alternative medicine (CAM): a national probability survey of CAM utilizers. *Altern Ther Health Med* 2003; 9(4):50–6.
  19. Allen J, Rack P, Vaddadi K. Differences in the effects of clomipramine on English and Asian volunteers: preliminary report on a pilot study. *Postgrad Med J* 1977;53:79–86.
  20. Gelernter J, Kranzler H, Cubells JF. Serotonin transporter protein (SLC6A4) allele and haplotype frequencies and linkage disequilibria in African- and European-American and Japanese populations and in alcohol-dependent subjects. *Hum Genet* 1997;101(2):243–6.
  21. Pollock BG, Ferrell RE, Mulsant BH, Mazumdar S, Miller M, Sweet RA, et al. Allelic variation in the serotonin transporter promoter affects onset of paroxetine treatment response in late-life depression. *Neuropsychopharmacology* 2000;23(5):587–90.
  22. Smeraldi E, Zanardi R, Benedetti F, Di Bella D, Perez J, Catalano M. Polymorphism within the promoter of the serotonin transporter gene and antidepressant efficacy of fluvoxamine. *Mol Psychiatry* 1998;3(6):508–11.
  23. Kim DK, Lim SW, Lee S, Sohn SE, Kim S, Hahn CG, et al. Serotonin transporter gene polymorphism and antidepressant response. *Neuroreport* 2000;11(1):215–9.
  24. Williams RB, Marchuk DA, Gadde KM, Barefoot JC, Grichnik K, Helms MJ, et al. Serotonin-related gene polymorphisms and central nervous system serotonin function. *Neuropsychopharmacology* 2003;28(3):533–41.
  25. Lachman HM, Morrow B, Shprintzen R, Veit S, Parsia SS, Faedda G, et al. Association of codon 108/158 catechol-O-methyltransferase gene polymorphism with the psychiatric manifestations of velo-cardio-facial syndrome. *Am J Med Genet* 1996;67(5):468–72.
  26. Rivera-Calimlim L, Reilly DK. Difference in erythrocyte catechol-O-methyltransferase activity between Orientals and Caucasians: difference in levodopa tolerance. *Clin Pharmacol Ther* 1984;35(6):804–9.
  27. Borowsky SJ, Rubenstein LV, Meredith LS, Camp P, Jackson-Triche M, Wells KB. Who is at risk of nondetection of mental health problems in primary care? *J Gen Intern Med* 2000;15(6):381–8.
  28. Hull SA, Cornwell J, Harvey C, Eldridge S, Bare PO. Prescribing rates for psychotropic medication amongst east London general practices: low rates where Asian populations are greatest. *Fam Pract* 2001;18(2):167–73.
  29. Cornwell J, Hull S. Do GPs prescribe antidepressants differently for South Asian patients? *Fam Pract* 1998;(15 Suppl 1):S16–8.
  30. Melfi CA, Croghan TW, Hanna MP, Robinson RL. Racial variation in antidepressant treatment in a Medicaid population. *J Clin Psychiatry* 2000;61(1):16–21.
  31. Smedley BD, Stith AY, Nelson AR, editors. Unequal treatment, confronting racial and ethnic disparities in health care. Washington (DC): Institute of Medicine, The National Academies Press; 2003. p. 160–79.
  32. Tiemeier H, De Vries WJ, Van Het Loo M, Kahan JP, Klazinga N, Grol R, et al. Guideline adherence rates and interprofessional variation in a vignette study of depression. *Qual Saf Health Care* 2002;11(3): 214–8.
  33. Sleath B, Rubin RH, Huston SA. Hispanic ethnicity, physician-patient communication, and antidepressant adherence. *Compr Psychiatry* 2003; 44(3):198–204.
  34. Janz NK, Champion VL, Strecher VJ. The health belief model. In: Glanz K, Rimer BK, Lewis FM, editors. Health behavior and health education. San Francisco: Jossey-Bass; 2002. p. 45–66.
  35. Montano DE, Kasprzyk D. The theory of reasoned action and the theory of planned behavior. In: Glanz K, Rimer BK, Lewis FM, editors. Health behavior and health education. San Francisco: Jossey-Bass; 2002. p. 67–98.
  36. Prochaska JO, Redding CA, Evers KE. The transtheoretical model and stages of change. In: Glanz K, Rimer BK, Lewis FM, editors. Health behavior and health education. San Francisco: Jossey-Bass; 2002. p. 99–120.
  37. Rimer BK. Perspectives on intrapersonal theories of health behavior. In: Glanz K, Rimer BK, Lewis FM, editors. Health behavior and health education. San Francisco: Jossey-Bass; 2002. p. 144–59.
  38. Brown J, Cohen P, Johnson JG, Smailes EM. Childhood abuse and neglect: specificity of effects on adolescent and young adult depression and suicidality. *J Am Acad Child Adolesc Psychiatry* 1999;38:1490–6.
  39. LaVeist TA, Diala C, Jarrett NC. Social status and perceived discrimination: who experiences discrimination in the health care system, how, and why? In: Hogue C, Hargraves M, Scott-Collins K, editors. Minority health in America. Baltimore: Johns Hopkins University Press; 2000. p. 194–208.
  40. Cooper-Patrick L, Gallo JJ, Gonzales JJ, Vu HT, Powe NR, Nelson C, Ford DE. Race, gender, and partnership in the patient-physician relationship. *JAMA* 1999;282(6):583–9.
  41. Yeung A, Kung WW. How culture impacts on the treatment of mental illnesses among Asian-Americans. *Psychiatric Times* 2004;21 (1):34–6.
  42. Marin H, Escobar JL. Special issues in the psychopharmacological management of Hispanic Americans. *Psychopharmacol Bull* 2001; 35(4):197–212.
  43. Flaskerud JH. Ethnicity, culture, and neuropsychiatry. *Issues Ment Health Nurs* 2000;21(1):5–29.
  44. Brown C, Schulberg HC, Madonia MJ. Clinical presentations of major depression by African Americans and whites in primary medical care practice. *J Affect Disord* 1996;41(3):181–91.
  45. Conrad MM, Pacquiao DF. Manifestation, attribution, and coping with depression among Asian Indians from the perspectives of health care practitioners. *J Transcult Nurs* 2005;16(1):32–40.
  46. Cooper LA, Gonzales JJ, Gallo JJ, Rost KM, Meredith LS, Rubenstein LV, et al. The acceptability of treatment for depression among African-American, Hispanic, and white primary care patients. *Med Care* 2003; 41(4):479–89.
  47. Hazlett-Stevens H, Craske MG, Roy-Byrne PP, Sherbourne CD, Stein MB, Bystritsky A. Predictors of willingness to consider medication and psychosocial treatment of panic disorder in a primary care sample. *Gen Hosp Psychiatry* 2002;24(5):316–21.
  48. Dwight-Johnson M, Sherbourne CD, Liao D, Wells KB. Treatment preferences among depressed primary care patients. *J Gen Intern Med* 2000;15:527–34.
  49. Wagner AW, Bystritsky A, Russo JE, Craske MG, Sherbourne CD, Stein MB, et al. Beliefs about psychotropic medication and psychotherapy among primary care patients with anxiety disorders. *Depress Anxiety* 2005;21(3):99–105.
  50. Johnson MR, Hartzema AG, et al. Low-income primary care patients with panic disorder: cultural differences in barriers to and preferences for treatment. *Anxiety disorders association of America*; 2003 [Toronto, Canada].
  51. Silva de Crane R, Spielberger C. Attitudes of Hispanic, Black, and Caucasians university students toward mental illness. *Hisp J Behav Sci* 1981;3:241–55.
  52. Alvidrez J. Ethnic variations in mental health attitudes and service use among low-income African American, Latina, and European American young women. *Community Ment Health J* 1999;35(6):515–30.
  53. Alvidrez J, Azocar F. Distressed women's clinic patients: preferences for mental health treatments and perceived obstacles. *Gen Hosp Psychiatry* 1999;21(5):340–7.
  54. Wynaden D, Chapman R, Orb A, McGowan S, Zeeman Z, Yeak S. Factors that influence Asian communities' access to mental health care. *Int J Ment Health Nurs* 2005;14(2):88–95.
  55. Brown C, Schulberg HC, Sacco D, Perel JM, Houck PR. Effectiveness of treatments for major depression in primary medical care practice: a post hoc analysis of outcomes for African American and white patients. *J Affect Disord* 1999;53(2):185–92.
  56. Sanchez-Lacay JA, Lewis-Fernandez R, Goetz D, Blanco C, Salman E, Davies S, et al. Open trial of nefazodone among Hispanics with major depression: efficacy, tolerability, and adherence issues. *Depress Anxiety* 2001;13(3):118–24.
  57. Kinzie JD, Leung P, Boehnlein JK, Fleck J. Antidepressant blood levels in Southeast Asians. Clinical and cultural implications. *J Nerv Ment Dis* 1987;175(8):480–5.
  58. Mukherjee S, Perry D, Sullivan G, Verdugo B, Means-Christensen A, Schraufnagel T, et al. Patient beliefs and attitudes associated with adherence to evidence-based CBT and medication treatment [submitted].
  59. Chivers C, Dewey M, Fielding K, Gretton V, Miller P, Palmer B, et al. Antidepressant drugs and generic counselling for treatment of major depression in primary care: randomised trial with patient preference arms. *BMJ* 2001;322(7289):772–5.
  60. Eisenthal S, Emery R, Lazare A, Udin H. "Adherence" and the negotiated approach to patienthood. *Arch Gen Psychiatry* 1979;36 (4):393–8.

61. Katon W, Robinson P, Von Korff M, Lin E, Bush T, Ludman E, et al. A multifaceted intervention to improve treatment of depression in primary care. *Arch Gen Psychiatry* 1996;53(10):924–32.
62. Demyttenaere K, Mesters P, Boulanger B, Dewe W, Delsemme MH, Gregoire J, et al. Adherence to treatment regimen in depressed patients treated with amitriptyline or fluoxetine. *J Affect Disord* 2001;65 (3):243–52.
63. Rosenheck R, Fontana A. Utilization of mental health services by minority veterans of the Vietnam era. *J Nerv Ment Dis* 1994;182: 685–91.
64. Zoellner LA, Feeny NC, Fitzgibbons LA, Foa EB. Response of African American and Caucasian women to cognitive behavioral therapy for PTSD. *Behav Ther* 1999;30:581–95.
65. Chambless DL, Williams KE. A preliminary study of the effects of exposure in vivo for African Americans with agoraphobia. *Behav Ther* 1995; 26:501–15.
66. Wagner GJ, Maguen S, Rabkin JG. Ethnic differences in response to fluoxetine in a controlled trial with depressed HIV-positive patients. *Psychiatr Serv* 1998;49(2):239–40.
67. Friedman S, Paradis CM, Hatch M. Characteristics of African-American and white patients with panic disorder and agoraphobia. *Hosp Community Psychiatry* 1994;45:798–803.
68. Treadwell KRH, Flannery-Schroeder EC, Kendall PC. Ethnicity and gender in relation to adaptive functioning, diagnostic status, and treatment outcome in children from an anxiety clinic. *J Anxiety Disord* 1995;9:373–84.
69. Comas-Diaz L. Effects of cognitive and behavioral group treatment on the depressive symptomatology of Puerto Rican women. *J Consult Clin Psychol* 1981;49(5):627–32.
70. Alonso M, Val E, Rapaport MM. An open-label study of SSRI treatment in depressed Hispanic and non-Hispanic women. *J Clin Psychiatry* 1997; 58:31.
71. Rossello J, Bernal G. The efficacy of cognitive-behavioral and interpersonal treatments for depression in Puerto Rican adolescents. *J Consult Clin Psychol* 1999;67(5):734–45.
72. Pina AA, Silverman WK, Fuentes RM, Kurtines WM, Weems CF. Exposure-based cognitive-behavioral treatment for phobic and anxiety disorders: treatment effects and maintenance for Hispanic/Latino relative to European-American youths. *J Am Acad Child Adolesc Psychiatry* 2003;42(10): 1179–87.
73. Otto MW, Hinton D, Chea A, Ba P, Pollack MH. Culture specific manifestations of anxiety: lessons learned from the Khmer. ADAA 25th Annual Conference: 2005 [Seattle, WA].
74. Otto MW, Hinton D, Korbly NB, Chea A, Ba P, Gershuny BS, et al. Treatment of pharmacotherapy-refractory posttraumatic stress disorder among Cambodian refugees: a pilot study of combination treatment with cognitive-behavior therapy vs sertraline alone. *Behav Res Ther* 2003; 41(11):1271–6.
75. Hinton DE, Pham T, Tran M, Safren SA, Otto MW, Pollack MH. CBT for Vietnamese refugees with treatment-resistant PTSD and panic attacks: a pilot study. *J Trauma Stress* 2004;17(5):429–33.
76. Miranda J, Azocar F, Organista KC, Dwyer E, Areane P. Treatment of depression among impoverished primary care patients from ethnic minority groups. *Psychiatr Serv* 2003;54(2):219–25.
77. Roy-Byrne PP, Russo J, Cowley DS, Katon WJ. Unemployment and emergency room visits predict poor treatment outcome in primary care panic disorder. *J Clin Psychiatry* 2003;64(4):383–9.
78. Araya R, Rojas G, Fritsch R, Gaete J, Rojas M, Simon G, et al. Treating depression in primary care in low-income women in Santiago, Chile: a randomised controlled trial. *Lancet* 2003;361(9362):995–1000.
79. Miranda J, Chung JY, Green BL, Krupnick J, Siddique J, Revicki DA, et al. Treating depression in predominantly low-income young minority women: a randomized controlled trial. *JAMA* 2003;290(1): 57–65.
80. Miranda J, Duan N, Sherbourne C, Schoenbaum M, Lagomasino I, Jackson-Triche M, et al. Improving care for minorities: can quality improvement interventions improve care and outcomes for depressed minorities? Results of a randomized, controlled trial. *Health Serv Res* 2003;38(2):613–30.
81. Roy-Byrne P, Perera P, Pitts C, Christi J. Paroxetine response and tolerability among ethnic minority patients with mood or anxiety disorders: a pooled analysis. *J Clin Psychiatry* 2005;66:1228–33.
82. Arean PA, Ayalon L, Hunkeler E, Lin EH, Tang L, Harpole L, et al. Improving depression care for older, minority patients in primary care. *Med Care* 2005;43(4):381–90.
83. Takeuchi DT, Sue S, Yeh M. Return rates and outcomes from ethnicity-specific mental health programs in Los Angeles. *Am J Public Health* 1995;85(5):638–43.
84. Sher I, McGinn L, Sirey JA, Meyers B. Effects of caregivers' perceived stigma and causal beliefs on patients' adherence to antidepressant treatment. *Psychiatr Serv* 2005;56(5):564–9.
85. Buchwald DS, Tomita S, Ashton S, Furman R, Manson SM. Use of traditional healing among Native Americans in a primary care setting. *Med Care* 2000;38:1191–9.

## NOTES