

Screening for Depression

This Is the Heart of the Matter

You ought not to attempt to cure the body without the soul. The cure of many diseases is unknown to physicians because they disregard the whole.

Hippocrates

DESPITE HIPPOCRATES' ADVICE, FEW CLINICIANS and researchers have suspected that psychological problems may be among the most important modifiable risk factors for medical morbidity and mortality. There is growing evidence that this could be the case. Many cardiac patients (30%-45%) experience clinically important depressive symptoms.¹ The impact of depression on cardiac outcomes is at least as important as a history of myocardial infarction and left ventricular dysfunction.² Depression is related to onset of cardiac disease; it is associated with higher medical costs; and it reduces patients' quality of life and compliance with treatment.³⁻⁵ The cardiovascular prognosis is linked to the severity of depressive symptoms⁶: risk increases along with symptom severity whether or not the patient meets diagnostic criteria for a depressive disorder.⁷

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Several studies have suggested possible mechanisms that mediate the effect of depression on cardiovascular outcomes. Two articles in this issue of the ARCHIVES^{8,9} explore 3 of the major pathways by which the sequelae of depression may operate to cause cardiovascular morbidity and mortality: (1) by promoting the development of atherosclerosis, (2) by decreasing heart rate variability, which makes the heart more vulnerable to lethal arrhythmia, and (3) by setting the stage for the assumption of unhealthy lifestyles. Both studies were conducted in women with no known cardiovascular disease. Each contributes to our understanding of the relationship between depression and cardiovascular disease in distinct ways. Agatista et al⁸ used electron beam tomography and its associated calcium score to measure atherosclerosis in premenopausal and perimenopausal women. They found that the relationship between subclinical atherosclerosis and depression is dose related; ie, women with more severe depression have increasingly greater evidence of having atherosclerosis. Kim et al⁹ demonstrate that depression is as powerfully related to decreased heart rate variability as the traditional risk factors of age, diabetes, hypertension, and smoking. While a mechanism between smoking and depression may have a physiological basis, both articles emphasize that depression promotes an unhealthy lifestyle and increases risk factors for coronary artery disease. In Kim and colleagues' study, depressed women were more likely to be smokers. In Aga-

tista and colleagues' study, the relationship between depression and atherosclerosis is attenuated when the waist-hip ratio is controlled for. This weakened relationship is not surprising, because there is evidence that the more depressed a person is, the less likely he or she is to adhere to a healthy diet and to incorporate exercise into his or her life.¹⁰

Effective treatments for depression exist. Both psychotherapy and pharmacological treatments have been found to be effective. Psychotherapy may be especially beneficial to elderly patients with a chronic illness, whose depression is often accompanied by related psychosocial problems, such as loneliness, bereavement, anger, and loss of purpose in life.

Why, then, is depression not on the radar screens of cardiologists and many internists, and what are the barriers to engaging these physicians in the diagnosis and treatment of depression? Among the most significant barriers are (1) lack of training in detecting and treating depression, (2) skepticism that treating depression will improve medical outcomes, and (3) limitations of depression assessment tools. Even if the first 2 obstacles could be overcome, without an effective and clinically relevant screening tool it is unlikely that physicians will be engaged in the process.

Current assessment tools have multiple drawbacks. The greatest impediment to implementation of the tools by internists may be that they are rarely time efficient: in addition to the time that is required to administer, score, and review these measures, false-positive screens for suicidality absorb substantial staff time. For example, the 9-item Patient Health Questionnaire question that relates to suicidal thoughts is endorsed by 7% of primary care patients.¹¹ The rates for internal medicine and cardiology patients are no doubt higher; false-positive screens for suicidality would be a daily occurrence in these practices. The large majority of patients who report suicidal thoughts would not attempt to kill themselves, but each individual must be carefully evaluated and followed up, for both clinical and legal reasons.

Perhaps the greatest limitation of the Beck Depression Inventory, the Center for Epidemiologic Studies Depression Scale, the 9-item Patient Health Questionnaire, and other assessment tools, however, is that they were not developed or normed for chronic medical patients. For example, because cardiac patients often manifest somatic symptoms that are easily misinterpreted as

symptoms of depression, it is necessary to measure depressive symptom severity *in relation to norms for cardiac patients*.

Both Agatista et al⁸ and Kim et al⁹ used versions of the Center for Epidemiologic Studies Depression Scale. Agatista and colleagues also used the Structured Clinical Interview for Diagnosis. However, it is unlikely that the limitations of these tools had an impact on the results, as each of the populations studied consisted of women without cardiac symptoms. Therefore, it is unlikely that there were false positives for depression in either study, and hence the associations that were determined in both studies are reliable. However, the assessment tools used in each study have drawbacks for clinical practice: the Center for Epidemiologic Studies Depression Scale is not normed to cardiac patients, and the Structured Clinical Interview for Diagnosis requires a lengthy interview.

The good news is that better screening for depression is on the horizon. Computerized assessment makes possible a new generation of assessment tools in medicine that can be readily integrated into routine practice and designed for clinical decision support. Toward this end, the National Institutes of Health, Bethesda, Md, have funded the development of an automated system that provides a real-time "lab report," showing depression and anxiety severity scores anchored to norms for both primary care patients and patients in outpatient mental health treatment. The new tool enables the physician to identify patients whose severity is significantly higher than the norm for these patients. Comparison of a patient's severity score with norms for mental health patients, together with screens for other psychological disorders, can help the physician decide whether the patient should be encouraged to accept treatment. The screen for suicidality is designed to minimize false positives. The system can monitor changes in severity to determine treatment response, or it can enable the physician to "watch and wait" for improvement in patients whose severity score is elevated but not serious. The report format and content allow efficient review and discussion with the patient, thereby saving physicians' time. The development of a similar system, normed to cardiology patients, has also been funded by a grant from the National Institutes of Health. The system will provide information about depression, anxiety, and 20 other modifiable behavioral risk factors for cardiac events. Beyond screening, these assessment tools provide information to help physicians answer 2 key questions: "Does the patient have unusually severe symptoms of depression?" and if so, "Should the patient be encouraged to seek treatment for depression?"

Would detection and treatment of depression improve medical outcomes? It is hoped that if treatment for depression were shown to reduce morbidity or mortality resulting from medical conditions, internists would be strongly motivated to screen their patients. This issue was the focus of the Enhancing Recovery in Coronary Heart Disease Patients randomized trial,¹² a recent multicenter study of 2481 patients with myocardial infarction that was designed to determine whether cognitive behavioral therapy (CBT) for depression would improve cardiac outcomes. It did not. The CBT group

experienced significant improvement in depression and social isolation compared with the usual care group, but cardiac outcomes for the CBT group were similar to those of the usual care group.

The results of the Enhancing Recovery in Coronary Heart Disease Patients randomized trial must be interpreted with caution. The findings do not discriminate between responders and nonresponders within the treatment group, nor do they account for the high rate of remission of depressive symptoms in the untreated group. The untreated group did not receive CBT, but 20% of them received antidepressant medications, and the untreated group experienced 83% of the improvement in depression severity of the CBT group.¹² Thus, the results suggest that CBT may not affect the course of cardiac disease, but they should not be interpreted to mean that there is no medical benefit to the alleviation of depressive symptoms.

Depression screening is justified by its consistently documented impact on quality of life, even in the absence of cardiac benefit: "Mental health providers need not apologize for 'only' improving quality of life for cardiac patients. . . . Many invasive procedures in cardiology are similarly palliative"¹³ and have not been shown to increase life expectancy. Screening of internal medicine patients with cardiac disease, cancer, or other serious chronic conditions is similarly justified.

What can the physician do? Physicians need not diagnose or treat depression. State-of-the-art assessment systems can help them to evaluate need for treatment. These tools show promise for incorporation into routine practice and provide information to determine which patients are candidates for referral to a mental health specialist or to psychopharmacological treatment.

Patients who have severity scores that are elevated but not in a range that is characteristic of mental health patients will often respond well if given self-help information. For example, patient literature on cardiac depression and its treatment is available through the National Institutes of Health and the MacArthur Foundation Initiative on Depression (<http://www.depression-primarycare.org/>). When treatment seems indicated, the physician's task is not necessarily to treat the patient but, instead, to motivate the patient to accept referral. Helping the patient to understand that depression commonly accompanies chronic disease, that it complicates treatment, and that, in most cases, it can successfully be treated can reduce the stigma and improve motivation.

Barriers to addressing depression have largely been overcome. There is an opportunity to significantly improve the quality of life, and perhaps the prognosis for event-free survival, for at least one fourth of patients who suffer from the most serious diseases.^{1,14} Let us seize it.

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REFERENCES

1. Schleifer SJ, Macari-Hinson MM, Coyle DA. The nature and course of depression following myocardial infarction. *Arch Intern Med.* 1989;149:1785-1789.
2. Frasure-Smith N, Lesperance F, Talajic M. Depression following myocardial infarction: impact on 6-month survival. *JAMA.* 1993;270:1819-1825.
3. Barefoot JC, Schroll M. Symptoms of depression, acute myocardial infarction, and total mortality in a community sample. *Circulation.* 1996;93:1976-1980.
4. Allison TG, Williams DE, Miller TD, et al. Medical and economic costs of psychological distress in patients with coronary artery disease. *Mayo Clin Proc.* 1995;70:734-742.
5. DiMatteo MR, Lepper H, Croghan T. Depression is a risk factor for noncompliance with medical treatment: meta-analysis of the effects of anxiety and depression on patient adherence. *Arch Intern Med.* 2000;160:2101-2107.
6. Carney R, Freedland K, Sheline Y, Weiss E. Depression and coronary heart disease: a review for cardiologists. *Clin Cardiol.* 1997;20:196-200.
7. Anda R, Williamson D, Jones D, et al. Depressed affect, hopelessness, and the risk of ischemic heart disease in a cohort of U.S. adults. *Epidemiology.* 1993;4:285-294.
8. Agatasa PK, Matthews KA, Bromberger JT, Edmundowicz D, Chang Y-F, Sutton-Tyrrell K. Coronary and aortic calcification in women with a history of major depression. *Arch Intern Med.* 2005;165:1229-1236.
9. Kim CK, McGorray SP, Bartholomew BA, et al. Depressive symptoms and heart rate variability in postmenopausal women. *Arch Intern Med.* 2005;165:1239-1244.
10. Bonnet F, Irving K, Terra JL, Nony P, Berthezene F, Moulin P. Anxiety and depression are associated with unhealthy lifestyle in patients at risk of cardiovascular disease. *Atherosclerosis.* 2005;178:339-344.
11. Corson K, Gerrity M, Dobscha S. Screening for depression and suicidality in a VA primary care setting. *Am J Manag Care.* 2004;10:839-845.
12. Berkman LF, Blumenthal J, Burg M, et al. Effects of treating depression and low perceived social support on cardiac events after myocardial infarction: the Enhancing Recovery in Coronary Heart Disease Patients (ENRICH) Randomized Trial. *JAMA.* 2003;289:3106-3116.
13. Allan R, Scheidt S. *Heart and Mind: The Practice of Cardiac Psychology.* Washington, DC: American Psychological Assoc; 1989.
14. Zung WW, Broadhead WE, Roth ME. Prevalence of depressive symptoms in primary care. *J Family Pract.* 1993;37:337-344.