

The Societal Costs of Chronic Major Depression

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Major depression is a widespread, often chronic disorder affecting the individual, his or her family, and society as a whole. It incurs tremendous social and financial costs in the form of impaired relationships, lost productivity, and lost wages. Although chronic major depression is eminently treatable, it continues to be undertreated and underrecognized. This is particularly true in primary care settings, where physicians are usually the first to encounter chronic depression but are seldom trained to distinguish depression from other medical illnesses with similar symptoms. In addition, because of the stigma attached to depression, patients often characterize their symptoms as part of a physical illness or fail to report them to a clinician at all. This article discusses the epidemiology of depression, its impact and burden on society, and its special character (including diagnosis and treatment) as a chronic illness. *(J Clin Psychiatry 2001;62[suppl 6]:5-9)*

Examination of the epidemiology and impact of major depression reveals depression to be a widespread, often chronic disorder with substantial personal, social, and financial costs. Depressed individuals are likely to be seen in primary care settings, yet rates of detection and appropriate longitudinal treatment are low. Conceptualization of depression as a chronic illness together with the application of chronic care models of treatment have the potential to improve outcomes and quality of life for individuals with major depression and to reduce societal burden.

EPIDEMIOLOGY OF DEPRESSION

Prevalence

Data from community samples indicate that an estimated 10% to 25% of women and 5% to 12% of men in the United States will experience major depressive disorder in their lifetime.¹ Point prevalence rates have been estimated at 5% to 9% for women and 2% to 3% for men.¹ In addition, approximately 6% of the population will experience dysthymia, alone or together with a major depressive episode.¹ The risk of developing major depression cuts

across ethnicity, education, income levels, and marital status, and individuals of all ages may be affected. Of the 10 to 14 million people who are depressed in any given year,² women aged 18 to 45 years comprise the largest group.³

When rates of depression are examined in specific contexts, the percentage of those affected is even higher. Among general medical patients, the 1-year prevalence of major depression is 2 to 3 times that of community samples, and rates are particularly high among inpatients in general hospitals.³⁻⁶ Among diabetic patients, rates have been reported to range between 8.5% and 27.3%.⁷ A recent study found that 45% of patients with asthma screened positive for depressive symptoms.⁸ Up to 40% of patients will experience major or minor depression after a stroke,⁹ and rates are similar among individuals treated for myocardial infarction.¹⁰

In addition, Katon et al.¹¹ found that 40% of "high utilizers" of health care qualified for a diagnosis of major depression or dysthymia. These patients comprised the top 10% of health care consumers in a large health maintenance organization and were responsible for 29% of primary care visits, 40% of inpatient days, and 26% of prescriptions. Major depression was the most common psychiatric disorder in this high-utilizer group.

Finally, a recent study of mothers who brought their children for depression evaluation or treatment found that 14% of the women screened positive for major depression; two thirds were not receiving treatment.¹² Forty-three percent of the mothers sampled reported subthreshold psychiatric symptoms, and 22% showed some indication of suicidal ideation or intent.

Recurrence Rates and Chronicity

Most individuals with depression suffer from recurrent or chronic illness. Although untreated episodes typically

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Table 1. DSM-IV Symptoms of Major Depressive Episode^a

Depressed mood or irritability
Loss of interest or pleasure in most activities
Significant change in appetite; weight loss or weight gain
Insomnia or hypersomnia
Psychomotor agitation or retardation
Fatigue or loss of energy
Feelings of worthlessness or excessive or inappropriate guilt
Diminished ability to think, concentrate, or make decisions
Suicidal thoughts

^aAdapted from the American Psychiatric Association,¹ with permission.

remit within 6 to 9 months,¹ approximately 40% of individuals will continue to meet diagnostic criteria 1 year later.¹³ Fifteen percent to 20% of individuals with major depression experience episodes lasting 2 years or longer.¹³

Approximately 60% of individuals will go on to experience a second depressive episode.¹ Risk of recurrence (i.e., emergence of a new episode following recovery from the previous episode¹⁴) increases over time and with each subsequent episode.¹⁵ Without prophylactic treatment, recurrence rates after 2 or 3 episodes may range from 60% to 85%.^{13,16,17}

Furthermore, chronic illness may result from the fact that many individuals remain untreated or without adequate treatment (i.e., treatment to full remission). Chronicity is linked to functional impairment and the inability to perform social, work, and family roles adequately.^{13,18}

IMPACT AND BURDEN OF DEPRESSION

Individual and Societal Burden

Depression is characterized by affective, cognitive, behavioral, and somatic symptoms (Table 1). In addition to causing significant psychic distress, depressive symptoms such as hopelessness, nihilism, and low energy may interfere with seeking treatment. Such symptoms may also interfere with compliance in those who do seek treatment. Depression has a tremendous impact on all aspects of an individual's life, including home, family, and work.

According to the Medical Outcomes Study,¹⁹ the extent of functional impairment associated with current depressive disorders or depressive symptoms is greater than or comparable to the impairment uniquely associated with 8 other chronic medical conditions (e.g., hypertension, diabetes, arthritis). Similarly, the Global Burden of Disease study²⁰ found unipolar major depression to be the second leading source of disease burden in established market economies, above cardiovascular disease, alcohol use, and road traffic accidents (Table 2).^{20,21} Unipolar major depression is projected to displace ischemic heart disease as the leading source of disease burden over the next 20 years.²⁰

In addition to its independent burden, depression also has been shown to impact general medical outcomes in individuals with comorbid illnesses. In diabetic patients, for

Table 2. Leading Sources of Disease Burden in Established Market Economies, 1990^a

Cause	Total DALYs ^b	% of Total
Ischemic heart disease	8.9	9.0
Unipolar major depression	6.7	6.8
Cardiovascular disease	5.0	5.0
Alcohol use	4.7	4.7
Road traffic accidents	4.3	4.4
All causes	98.7	

^aData from Murray and Lopez²⁰ and the U.S. Department of Health and Human Services.²¹ Abbreviation: DALY = disability-adjusted life-year

^bLost years of healthy life, including those due to premature death or disability, in millions.

example, depression is associated with poor glycemic control, increased risk for diabetic complications (particularly heart disease), and higher overall health care costs.²² A recent study of asthma patients found that those with depressive symptoms reported worse health-related quality of life.⁸ Remarkably, the mortality rate of depressed patients recovering from myocardial infarctions is triple that of nondepressed patients.²³ Depressed stroke patients and depressed patients in nursing homes are also at increased risk of mortality.^{24,25} Finally, depressed patients are 3 times as likely to fail to comply with medical treatment recommendations than are nondepressed patients,²⁶ placing them at risk for poor health outcomes.

In addition to adverse consequences for the depressed individual, the impact of depression on families is great. Maternal depression, for example, as measured by either self-report or clinical diagnosis, has been shown to have adverse effects on children's socioemotional and cognitive development.²⁷ Maternal depression is also associated with decreased cooperation and more problem behaviors in toddlers,²⁸ and children of depressed parents are more than 3 times as likely to experience depression than are children of nondepressed parents.²⁹ Major depression also has been shown to be uniquely associated with marital dissatisfaction in women.³⁰

Finally, depression carries a significant burden from suicide. Suicide accounts for 30,000 to 35,000 deaths per year and resembles leukemia as a cause of death in this country.³¹ In addition to the immense human costs, suicide results in an estimated \$12.4 billion in lost productivity and wages per year.³²

Financial Burden

The annual cost of depression in the United States has been estimated at \$43.7 billion to \$52.9 billion, including costs due to health care, suicide, and workplace losses.³³ The impact of depression on the overall health care system is enormous, including \$12.4 billion in direct medical, psychiatric, and pharmaceutical costs.³³ The overall medical costs of the average person with depression are approximately twice as high as those of the average person without depression.^{34,35} On average, depressed patients uti-

lize health care services 3 times more frequently³⁶ and visit the emergency room 7 times more often.³⁷

Workplace costs related to absenteeism and reduced productivity have been estimated at \$23.8 billion.³³ In a recent survey, approximately 80% of employers reported depression as a problem in their work settings, with 40% identifying the problem as moderate or large.³⁸ Depressed employees incur more disability days than patients with chronic back pain, heart disease, other mental disorders, hypertension, or diabetes.³⁹ The tremendous negative impact of depression suggests that proper diagnosis and effective treatment are critically needed.

Depression in Primary Care

As suggested by higher prevalence rates in primary care, most depressed patients initially consult primary care providers. Depression may go undiagnosed in primary care settings for a number of reasons, however. First, the majority of depressed patients in primary care present with physical symptoms only.^{11,40} Patients may not recognize their symptoms as depression or may seek a general medical cause for their symptoms, in part because general medical illness carries less stigma than a mental illness. Limited time and physicians' attitudes, beliefs, and training also affect rates of detection and diagnosis.⁴¹ Overall, diagnosis of depression may be missed in one third to one half of all patients.⁴²⁻⁴⁴

Even when patients are diagnosed accurately, more than half of patients who receive treatment are still depressed after 1 year.^{45,46} Factors leading to treatment failure include inadequate instructions to patients concerning antidepressants, subtherapeutic doses, and inadequate length of treatment.⁴⁷ More than one third of patients fail to refill their initial prescription⁴⁸ and nearly half discontinue their medication within 3 months.⁴⁹ Such premature discontinuation wastes treatment time and money, since longer treatment periods may be required to achieve and maintain a full response.⁴

Appropriate diagnosis and treatment in primary care are complicated by additional factors. Although a substantial proportion of patients with depressive symptoms have major depressive disorder or another complex mood disorder (e.g., bipolar disorder), many patients present, at least initially, with a subthreshold condition. These patients may have some symptoms but fail to meet the full criteria for major depression. In some cases, patients may have inadequately treated general medical conditions that lead to depressive symptoms. A patient with severe arthritis who is not receiving adequate pain medication, for example, may experience disruption in sleep and subsequent interference with normal functioning. Improved arthritis treatment may improve the patient's mood state. Substance abuse and dependence may also cause depressive symptoms, and social problems and other difficulties may cause symptoms that will resolve with changes in situational factors.

For a substantial number of these patients, therefore, watchful waiting may be an appropriate course of action. Follow-up is critical, however, since many of these patients will ultimately develop major depressive disorder.⁵⁰ With careful monitoring, clinicians can initiate appropriate treatment in a timely manner if symptoms do intensify. Often, physicians' abilities to carry out such monitoring are restricted in primary care as a result of limited time and resources; nevertheless, this approach to treatment could be successful in a number of illnesses besides depression.

Major Depression as a Chronic Disease

As illustrated here, depression is much like other chronic medical conditions such as asthma, diabetes, and arthritis: it affects many aspects of the patient's life, has an impact on multiple domains of society, and is associated with both pain and dysfunction. Significant adaptation is required on the part of patients and their families in order to cope with the illness.

Thus, like asthma, diabetes, and arthritis, chronic major depression requires longitudinal care. Like these other chronic illnesses, major depression has no cure but demands the administration of ongoing care, over the long term, to truly make a difference in patients' lives. Fortunately, good evidence indicates that longitudinal care leads to improvement.

Without longitudinal care, symptoms often remit during treatment and return after treatment is discontinued. Continuing treatment, including pharmacologic, psychosocial, and practical interventions, is necessary for all chronic diseases. Depression is no exception.

Model for Effective Chronic Illness Care

The Robert Wood Johnson Foundation has developed a model for chronic care management of illnesses that focuses on care at multiple levels.⁵¹ First, the model emphasizes the importance of establishing links with various community resources. Currently, health care organizations often are not organized so that they may take advantage of community resources that already exist or so that they may encourage the development of such resources.

Second, the model requires an organization conducive to the involvement of leadership from health care practices, health plans, and purchasers, since the support of these stakeholders is crucial. One result of instituting this new model for chronic care might be the realignment of incentives to allow for investment in an appropriate chronic-care model. Frequently, the carve-out and carve-in arrangements under which health plans are established do not provide incentives for the creation of an adequate system for longitudinal care, particularly in primary care.

Third, the patient, or health care consumer, must be motivated to participate actively in various strategies to self-manage his or her care. Consumer-provider interaction is encouraged; the physician should elicit the prefer-

ences and values of the patient to help guide him or her through the different options for care and should enlist the patient's active participation in his or her own care.

Fourth, practice systems should also be redesigned. The model of acute, one-time treatment makes little sense for depression, diabetes, or any chronic illness.

Fifth, the clinician's decisions should be guided and reinforced by protocols that are primarily based on clinical evidence. These protocols should be reinforced by various prompts, provider education, and suitable support from appropriate areas of medical expertise.^{45,52} An example of one such protocol is the Texas Medication Algorithm Project.⁵³

Sixth, a clinical information system should include a registry of patients established with protocols for ongoing follow-up, education, contact, and measurement. Using this model, the clinician will know who is improving, who fails to improve, and when to intervene. Such a model requires adequate clinical information systems for ongoing care. It also should stipulate a way of advising clinicians on the latest information available. This information system should address how to make the appropriate treatment decisions and include a link to appropriate specialty support for help in complicated situations.

CONCLUSION

Evidence supports the conceptualization of depression as a chronic medical illness with enormous impact on the individual, his or her family, and society. Adoption of this view may help to reduce the stigma associated with depression while also allowing for the modification and implementation of treatment strategies that have been developed for other chronic illnesses.

We also must be able to adapt our clinical strategies and approaches to the primary care setting to help primary care providers develop the kind of systems necessary to treat chronic major depression and other forms of depression. Finally, we must find ways to realign the system of incentives in health care to overcome some of the barriers to appropriate care and management of depression.

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.

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