

The Impact of Depression on Workplace Functioning and Disability Costs

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Abstract

Until recently, the negative effect that major depressive disorder (MDD) has on interpersonal and workplace functioning had not been widely studied. Traditionally, the goals for treating MDD have also not focused on the commonly associated increases in healthcare utilization for somatic symptoms (ie, headache, abdominal pain) and poorly controlled comorbid medical illnesses, which lead to higher healthcare costs. This article reviews the extensive data collected during the past 10 years that have quantified the impact that MDD has on these outcomes, suggesting that patients with MDD have significant decrements in function, particularly those with comorbid general medical conditions. Also reviewed is the literature presenting evidence from randomized trials of systematic and collaborative treatment efforts that optimize treatment response and, in turn, decrease interpersonal disability, long-term healthcare costs, and the costs associated with lost productivity and absenteeism in the workplace. Such treatment models include algorithmically derived treatment alternatives and collaborative care models, which use a team approach to ensure treatment adherence and to monitor symptom response and side effects. The benefits of using disability assessment measures in conjunction with routine monitoring of depressive symptoms are also discussed.

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Introduction

The lifetime prevalence of major depressive disorder (MDD) in the United States is approximately 16%.¹ The World Health Organization reports that of the 10 most disabling diseases, such as diabetes, tuberculosis, hepatitis, and sexually transmitted diseases, MDD is responsible for 5% of the global disease burden.² In addition, MDD has been ranked fourth among the leading causes of disease burden³ and is expected to be ranked second by 2010.⁴

Disability Associated With MDD

The disability seen in patients with MDD can be described as all-encompassing. The emotional symptoms, such as anhedonia and depressed mood, and the physical symptoms of depression, such as pain and fatigue, impede functioning in nearly all aspects of the depressed patient's life. For depressed employees and their employers alike, the effect that depression has on workplace functioning is apparent and far-reaching. Individuals experiencing a major depressive episode are particularly prone to higher rates of absenteeism.⁵⁻⁷ For example, in a 1-year analysis of data from more than 15,000 employees of a large US corporation, workers with MDD took nearly 10 sick days, which was significantly higher than workers with heart disease, diabetes, hypertension, and back problems (5.4-7.5 days; $P < .05$ for all comparisons; [Table](#)). In addition, and perhaps more importantly, when depression was comorbid with any of these disorders the number of sick days increased to a mean of 13.5.⁶

In addition to limiting workdays, MDD is also associated with high levels of presenteeism,⁸⁻¹¹ a term that describes the lost productivity a worker experiences when he or she is able to attend work but is not performing optimally. Recent data have demonstrated that this lost productive work time is in part caused by the cognitive impairment that often accompanies depression.¹²⁻¹⁵ In a study by Wang and colleagues,¹⁵ which assessed service workers with a range of chronic medical conditions (ie, arthritis, back pain, hypertension, and MDD), workers with back pain and those with MDD experienced significant reductions in productivity, while only workers with MDD also experienced significant decrements in task focus.

Depressed employees who are experiencing such decrements in work performance and/or are missing work regularly may then be more vulnerable to possible termination. In fact, data are avail-

■ **Table.** Sick Days and Total Costs Incurred by Employees of a Major US Corporation Who Filed Health Claims and Had Work Data Available in 1995

Disorder	Sick Days (n = 9398)			Total Per Capita Health and Disability Costs (n = 9398)			Total Costs to the Corporation, Million \$
	Mean	Difference From Depression		Mean, \$	Difference From Depression		
		t	P		t	P	
Depressive disorder (n = 412)	9.86			5415			2.2
Diabetes (n = 203)	7.17	-2.91	.04	5472	0.10	1.00	1.1
Heart disease (n = 175)	7.47	-3.27	.01	5523	0.24	1.00	3.9
Hypertension (n = 689)	5.39	-6.26	<.001	3732	-3.88	.002	2.6
Back problems (n = 349)	7.21	-2.90	.04	4388	-1.96	.36	1.5
All others (n = 12,785)	3.32	3.31	<.001	1292	11.3	<.001	16.6

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able demonstrating that depression is associated with an increased risk for job loss.¹⁶⁻¹⁸ In comparing rates of new unemployment among depressed workers with a group of similarly employed, healthy controls, those with depression experienced significantly higher rates of job loss (12% vs 2%; $P < .001$).¹⁸

The majority of patients with MDD are currently employed,¹ and although they are likely to be spending a significant portion of their time at work, there are other areas of these patients' lives that are equally important and that are also likely to be impaired by their depression. Studies have demonstrated that MDD is associated with dysfunction in family, home life, and social roles¹⁹ and causes declines in overall health-related quality of life comparable to or greater than other chronic medical conditions.²⁰⁻²²

Although the majority of the studies described thus far have presented data from patients with a full diagnosis of MDD, it is worth noting that functional impairments and declines in quality of life have been observed even when a patient is experiencing depressive symptoms below the threshold for a depressive disorder,²³⁻²⁵ minor depression,^{26,27} or dysthymia.²⁸

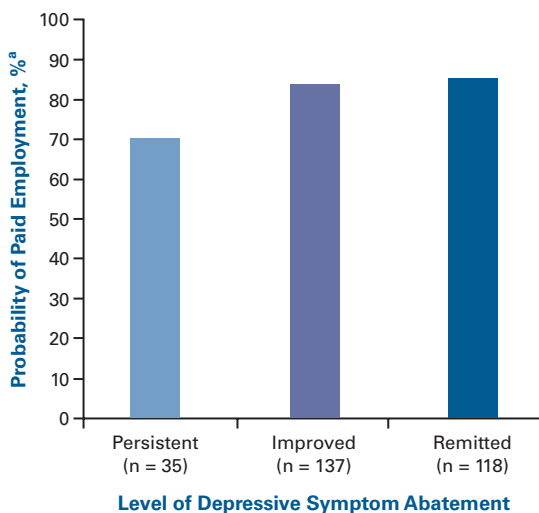
Healthcare and Disability Costs of Depression

The costs to employers of depressive illness among the workforce stem from multiple sources. First, there are the costs associated with lost productivity. One study estimated that the cost of lost productive work time was approximately \$31 billion greater in depressed employees (5.6 hours per week) compared with nondepressed employees (1.5 hours per week).¹¹ Additional sources are the increases in disability and healthcare costs that are often associated with MDD.^{6,11,29}

Patients with MDD are also significant utilizers of healthcare services and can have as much as 50% greater total healthcare costs compared with those without depression, even after controlling for sociodemographic variables and medical comorbidities.³⁰ The majority of the increase in healthcare costs may be driven by an increased number of medical visits for medically unexplained, minor somatic symptoms such as headache, abdominal pain, and fatigue.³¹

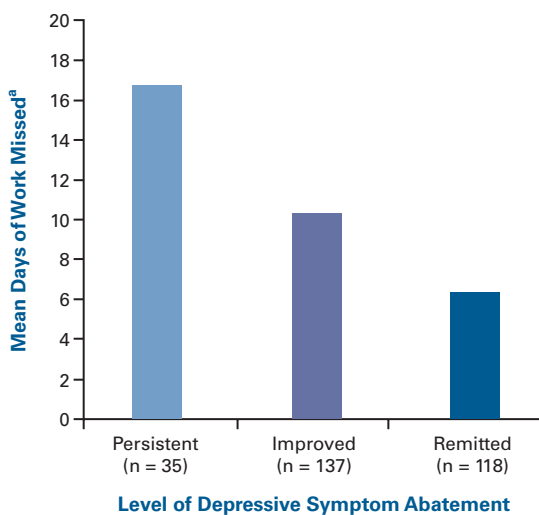
When MDD is comorbid with other medical conditions, significantly worse treatment outcomes and increased healthcare costs have been observed.³²⁻³⁸ For instance, comorbid depression in patients with diabetes is associated with a significant increased risk of macrovascular and microvascular complications.³⁹ Similar adverse effects of comorbid depression have been found in patients with heart disease and other medical illnesses.³⁴⁻³⁸ In a study conducted by Simon and colleagues,³³ diabetic patients with comorbid MDD were shown to have significantly higher healthcare costs compared with nondepressed patients with diabetes (\$5361 vs \$3120; $P < .001$). It has also been suggested that those who were adherent to a new round of antidepressant treatment were more likely to also be adherent to treatments for comorbid medical disorders compared with those who were not adherent. For example, patients with coronary artery disease and dyslipidemia (OR [odds ratio], 2.13; $P < .001$) or diabetes (OR, 1.82; $P < .001$) were more likely to be adherent to treatments for these conditions if they were also adherent to their newly prescribed antidepressant treatment, even after controlling for adherence to medical disease treatment prior to the new episode of antidepressant treatment. In addition, a 6% to 20% decrease in healthcare costs ($P < .05$ vs non-adherent patients) was observed for patients with coronary artery disease and dyslipidemia, diabetes, and those with all

■ Figure 1. Probability of Paid Employment Among Patients With Persistent Depression, Improvement Without Remission, and Remitted Depression⁴⁸



^a $F = 5.88; df = 2, 262; P = .003.$

■ Figure 2. Days of Work Missed Among Patients With Persistent Depression, Improvement Without Remission, and Remitted Depression⁴⁸



^a $F = 10.62; df = 2, 226; P = .001.$

3 conditions when they were adherent to their antidepressant treatment.⁴⁰

Effect of Antidepressant Treatment on Functional Outcomes

Although there is an abundance of data in the literature that quantifies the decrements in functioning seen in patients with MDD, a growing body of evidence is beginning to

develop demonstrating that effective antidepressant treatments may help to alleviate functional disability.⁴¹⁻⁴⁴ There are also some preliminary data available showing that improved depression treatment can also help to lower overall healthcare costs⁴⁵⁻⁵²; however, more research is needed to fully determine the effect that treatment has on healthcare costs. A few recently conducted, promising studies have shown that improved depression treatment is associated with decreased absenteeism,^{48,53} increased employment,⁵⁴ and improved work performance.⁴⁴ It is particularly important that patients receive early and adequate treatment⁵⁵ that continues until patients reach a full remission of symptoms.⁴⁸ Two different treatment algorithms, the Sequenced Treatment Alternatives to Relieve Depression^{43,56} and the Texas Medication Algorithm Project,⁵⁷ have shown that effective treatment strategies can significantly reduce the disability and declines in quality of life that are associated with MDD.

When treating depression, similar methods should be used as when treating other chronic conditions, such as asthma, where treatment is used to alleviate acute episodes as well as long-term treatment to maintain a remission of symptoms. The importance of regularly monitoring symptoms and assuring that treatment not only continues until the patient reaches a nearly asymptomatic state, but is also used to maintain response, cannot be overstated. Such a treatment strategy may provide the best opportunity for recovery and the restoration of premorbid levels of functioning. Simon et al⁴⁸ separated 290 primary care patients with depression into 3 groups: persistent MDD, symptomatic improvement without remission, and full symptomatic remission. Compared to those with persistent depression, patients reaching remission at month 12 were approximately 16% more likely to find or maintain paid employment (Figure 1). In addition, days of work missed due to illness were one third less among patients reaching remission compared with those with persistent depression (Figure 2).⁴⁸

Over the past decade, a model of treatment termed “collaborative care” has been developed to improve the quality of depression care and, therefore, improve outcomes in the primary care system. This model could potentially have an important public health impact, since the majority of patients with depression receive treatment in nonspecialty settings.⁵⁸ Additionally, primary care physicians may see patients in earlier stages of depression, so making accurate diagnoses and providing effective treatments could potentially lessen the likelihood of developing significant disability.

The collaborative care model uses a team approach for managing depression. A care manager enhances patient education and activation, monitors symptoms with a depres-

sion measurement tool, such as the 9-item Patient Health Questionnaire,⁵⁹ monitors treatment adherence, and facilitates follow-up visits with the primary care physician for patients with persistent symptoms. In addition, a psychiatrist provides caseload supervision and recommendations for treatment with antidepressant medication, which is communicated to the patient by the care manager and primary care physician. In some models of collaborative care, depression care managers can also provide brief, evidence-based psychotherapy.⁶⁰

In a meta-analysis of 37 studies that assessed the effectiveness of collaborative care models versus usual primary care, collaborative care was found to increase adherence to antidepressant medication and improve depressive outcomes for as long as 2 to 5 years.⁶¹ Collaborative care in patients with uncomplicated depression has been shown to modestly increase total medical ambulatory costs by \$100 to \$500 but has been consistently associated with a significant increase in depression-free days.⁶² Collaborative care for patients with depression and diabetes,^{63,64} depression and panic disorder,^{64,65} and persistent depressive symptoms 8 weeks after a primary care physician initiated treatment⁶⁶ has been associated with a high likelihood of decreased total medical costs. The above-mentioned studies did not assess the cost to employers of lost productivity, absenteeism, and job loss. Recent studies conducted by Wang and colleagues⁴⁴ and Rost and colleagues⁶⁷ found that collaborative care models are also associated with improved worker productivity versus usual care, and a study by Schoenbaum and colleagues⁵⁴ showed that collaborative depression care is associated with a greater number of days employed. More recent models of collaborative care have supported the use of long-term follow-up and maintenance treatment to prevent relapses and recurrences⁶⁸ because depression has been shown to be a chronic and commonly recurrent disorder.⁶⁹ Following the attainment of symptomatic remission, the use of maintenance treatment to prevent relapses and recurrences among patients at risk for a return of depressive symptoms can improve long-term outcomes.⁵⁰

Conclusions

Enhanced treatment options for MDD can improve adherence, patient satisfaction, and treatment outcomes,⁷⁰ and by focusing on improving the quality of care that depressed workers receive, long-term beneficial effects for employers can be expected through reduced absenteeism and improved productivity.⁶⁷ It is important to note that although collaborative care models for treating depression are associated with higher initial medical costs in patients with uncomplicated depression, they may prove to be more cost-

effective over the long term because of savings in employer-related costs. In patients with complicated depression, such as those with persistent symptoms and/or comorbid medical or psychiatric disorders, the return on investment associated with the implementation of enhanced depression care may be more evident in the reduction of healthcare costs and other costs to employers. However, determining the nature of the cost-effectiveness of enhanced depression treatment will require further research.⁷¹ The various healthcare stakeholders (ie, physicians, patients, employers, and payers/managed care plans) involved in the treatment of patients with MDD would benefit from improving the quality of mental health-care that these patients receive.

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