See article by Greenberg et al

Reducing the Cost and Burden of Depression: Incorporate Heart and Get an Early Start

Benjamin I. Goldstein, MD, PhD

The topic of massive costs and burden of major depressive disorder (MDD) is not new, but it remains timely nonetheless. In recent years, depression has continued to ascend, for lack of a better word, to new heights on the list of medical conditions that encumber individuals, families, health care systems, and society. How do we understand that, despite the growing recognition, treatment, and research in this area, depression seems to carry on seemingly undaunted? Stigma is on the decline. Health care parity, once a pipe dream, is being realized (albeit this remains a work in progress). Treatment guidelines are increasingly based on rigorous randomized clinical trial data that emanate from the top general medical journals. People are talking about depression, and they are increasingly seeing this condition through the same lens they view other medical conditions. In turn, they're seeking more care and attending to preventive strategies, such as mindfulness and exercise. So why have we yet to curtail the costs of MDD?

The study in this month's *Journal* by Greenberg and colleagues[1] bridges important gaps in the prior literature regarding the economic burden of depression, and in so doing draws our attention to some actionable factors underlying the increasing scope of this burden. Using administrative data from the United States, the authors found that excessive costs incurred by people with depression increased by over 20% between 2005 and 2010, that rates of treatment increased over the same interval, and that almost two-thirds of this cost was attributable to psychiatric and medical comorbidities.

Despite the fact that the study achieves its primary goals, including quantifying the overall economic burden of MDD and explicitly examining the important topic of comorbidity, there are several issues addressed that will require further study. First, order of onset of MDD in relation to comorbidity is not highlighted. As a result, an MDD case that onset after a heart attack or stroke would not be considered differently from MDD that antedated one of these events. Research seeking to determine whether and how order of onset impacts the observed findings is warranted. Second, age at onset of MDD is not considered. There is clear evidence that early-onset MDD is a more pernicious variant of the illness than is adult-onset MDD.[2,3] Subgroup analyses based on age at MDD onset could potentially uncover differential patterns of economic costs that would in turn guide treatment and health systems' approaches based on developmental subtypes of MDD. Third, duration of untreated illness is not highlighted. How does the delay from MDD onset to MDD treatment impact cost? Is there evidence of differential cost depending on the speed of access to treatment? If so, could costs be reduced by early intervention? Would early intervention for MDD yield benefits in terms of reduced physical health costs later in life? Future studies that seek to elaborate upon and extend the findings of this study would be well served to incorporate these considerations.

Greenberg and colleagues[1] have done well to shine a light on comorbidity, and physical health comorbidity in particular. Should it surprise us that a substantial proportion of treatment costs relates to physical health comorbidity? At this point, probably not. Nonetheless, these empirical data comprise an invaluable extension and expansion of the existing literature regarding physical health and MDD costs. Greenberg and colleagues[1] employ some nomenclature that is compelling because it implicitly reflects important assumptions that we have about the underlying causes and manifestations of depression. Although one can understand the importance of distinguishing treatment costs that emanate from MDD symptoms themselves, as opposed to comorbidities, the article invokes what I believe to be a false dichotomy between "incremental economic burden of MDD" versus "incremental economic burden of individuals with MDD." What do we mean when we refer to MDD? Are we referring solely to the constellation of symptoms required for a diagnosis, or are we referring to the underlying disease, with MDD symptoms comprising but one aspect of manifest biological disturbances? There is increasing evidence that the same biological processes underlying depression also underlie the impairing and costly cognitive dysfunction and medical comorbidity that people with depression experience even when euthymic.[4,5] Major depressive disorder is clearly a multisystemic disorder, and this presents opportunities for novel, physically relevant interventions[6] as well as for novel, physically relevant systems of care.[7,8]

Subjects with MDD in this study were matched for physical problems, but there is reason to expect that the impact and outcome of a given medical condition is quite different for a person with, versus without, MDD. People with MDD and other forms of severe recurrent and persistent psychiatric conditions experience pronounced disparities in care for physical health conditions.[9,10] Having a heart attack

Submitted: *December 29, 2014; accepted December 30, 2014.*

Corresponding author: *Benjamin I. Goldstein, MD, PhD, Department of Psychiatry, Sunnybrook Health Sciences Centre, 2075 Bayview Ave, FG53, Toronto, ON M4N-3M5 (Benjamin.goldstein@sunnybrook.ca).*

J Clin Psychiatry 2015;76(2):e216–e217 (doi:10.4088/JCP.14com09766).

or stroke is no small matter for anyone, but it's especially problematic for people with depression and other psychiatric conditions. These patients can expect to wait longer to see a doctor, wait longer to get an electrocardiogram, have lower likelihood of having definitive interventional care, and are less likely to have guideline-concordant preventive care after discharge. Integrated strategies that bring together physical and psychiatric treatment have demonstrated improved outcomes in both domains and should become the new standard of patient-centered, rather than symptom-centered, care.[7,8]

Where to from here? We need similar high-quality data in youth, substituting school impairment and absenteeism for the equivalent constructs in adults. In childhood and adolescence, MDD is a leading cause of disability worldwide.[11] Even in representative population samples (rather than samples derived from treatment-seeking patients or health claims), MDD among youth is moderately or seriously impairing in two-thirds of cases.[12] Nonetheless, fewer than half of these youth receive treatment for depression.[13] If we are going to effect change in the lifelong burden and cost of depression, we need to get to people early and alter their trajectories before they accumulate comorbidities and allostatic load.[14]

In summary, it is not entirely clear why we have yet to curtail the costs of MDD, but focusing on prevention, early intervention, and integration of physical health considerations may yield much-needed traction.

Author affiliations: Department of Psychiatry, Sunnybrook HealthSciences Centre, Toronto, Ontario, Canada.
Potential conflicts of interest: None reported.
Funding/support: None reported.

REFERENCES

1. Greenberg PE, Fournier A-A, Sisitsky T, et al. The economic burden of adults with major depressive disorder in the United States (2005 and 2010). *J Clin Psychiatry.* 2015;76(2):155–162.
2. Korczak DJ, Goldstein BI. Childhood onset major depressive disorder: course of illness and psychiatric comorbidity in a community sample. *J Pediatr*. 2009;155(1):118–123.
3. Zisook S, Lesser I, Stewart JW, et al. Effect of age at onset on the course of major depressive disorder. *Am J Psychiatry*. 2007;164(10):1539–1546.
4. Rudisch B, Nemeroff CB. Epidemiology of comorbid coronary artery disease and depression. *Biol Psychiatry*. 2003;54(3):227–240.
5. McIntyre RS, Rasgon NL, Kemp DE, et al. Metabolic syndrome and major depressive disorder: co-occurrence and pathophysiologic overlap. *Curr Diab Rep*. 2009;9(1):51–59.
6. Stafford L, Berk M. The use of statins after a cardiac intervention is associated with reduced risk of subsequent depression: proof of concept for the inflammatory and oxidative hypotheses of depression? *J Clin Psychiatry*. 2011;72(9):1229–1235.
7. Druss BG, von Esenwein SA, Compton MT, et al. A randomized trial of medical care management for community mental health settings: the Primary Care Access, Referral, and Evaluation (PCARE) study. *Am J Psychiatry*. 2010;167(2):151–159.
8. Katon WJ, Lin EHB, Von Korff M, et al. Collaborative care for patients with depression and chronic illnesses. *N Engl J Med*. 2010;363(27):2611–2620.
9. Druss BG, Bradford DW, Rosenheck RA, et al. Mental disorders and use of cardiovascular procedures after myocardial infarction. *JAMA*. 2000;283(4):506–511.
10. Laursen TM, Munk-Olsen T, Agerbo E, et al. Somatic hospital contacts, invasive cardiac procedures, and mortality from heart disease in patients with severe mental disorder. *Arch Gen Psychiatry*. 2009;66(7):713–720.
11. Gore FM, Bloem PJ, Patton GC, et al. Global burden of disease in young people aged 10–24 years: a systematic analysis. *Lancet*. 2011;377(9783):2093–2102.
12. Kessler RC, Avenevoli S, Costello J, et al. Severity of 12-month *DSM-IV* disorders in the National Comorbidity Survey Replication Adolescent Supplement. *Arch Gen Psychiatry*. 2012;69(4):381–389.
13. Merikangas KR, He JP, Burstein M, et al. Service utilization for lifetime mental disorders in US adolescents: results of the National Comorbidity Survey-Adolescent Supplement (NCS-A). *J Am Acad Child Adolesc Psychiatry*. 2011;50(1):32–45.
14. McEwen BS. Mood disorders and allostatic load. *Biol Psychiatry*. 2003;54(3):200–207.