

Preventing Depression

A Global Priority

Pim Cuijpers, PhD

Aartjan T. F. Beekman, MD, PhD

Charles F. Reynolds III, MD

DEPRESSIVE DISORDERS ERODE QUALITY OF LIFE, productivity in the workplace, and fulfillment of social and familial roles. In today's knowledge- and service-driven economies, the population's mental capital (ie, cognitive, emotional, and social skills resources required for role functioning) becomes both more valuable and more vulnerable to the effects of depression. Depressive disorders, severe mental illnesses that should not be confused with normal mood variations, are part of a vicious circle of poverty, discrimination, and poor mental health in middle- and low-income countries.¹ These realities also have major economic ramifications: treatment costs of depression are soaring but are only a fragment of the costs of reduced productivity due to depression.²

More than half of those with depression develop a recurrent or chronic disorder after a first depressive episode and are likely to spend more than 20% of their lifetime in a depressed condition. With a 12-month prevalence rate of more than 5% in most high-, middle-, and low-income countries and its occurrence at almost any age,³ depression generates substantial loss of quality of life and personal morbidity and despair. But it also leads to considerable additional damage through biological sequelae and maladaptive illness behaviors, thus increasing risk of cardiovascular disease, dementing illnesses, and early death while amplifying disability, complications, and health services use in those with coexisting chronic illnesses. Depression ranks third among disorders responsible for global disease burden, with all the concomitant economic costs to society, and will rank first in high-income countries by 2030.⁴

Prevention of Depression: New Opportunities

Even if it were possible to provide evidence-based treatment to all persons affected by a depressive disorder, the effect on averting years lived with disability would be limited because of the steady influx of new patients and the limited efficacy of currently available treatments.⁵

Prevention may offer new possibilities to reduce the disease burden of depressive disorders. A report of the Institute of Medicine defined prevention as any intervention aimed at preventing the onset of new cases of mental disorders in people who do not yet meet criteria for such a disorder.⁶ Prevention may be directed toward the whole population (universal prevention), high-risk groups (selective prevention), or those with subsyndromal symptoms (indicated prevention). More than 30 randomized trials have demonstrated that preventive interventions can reduce the incidence of new episodes of major depressive disorder by about 25% and by as much as 50% when preventive interventions are offered in stepped-care format.⁷ Methods with proven effectiveness involve educational, psychotherapeutic, pharmacological, lifestyle, and nutritional interventions.

The Economic Case for Depression Prevention

Cost-effectiveness ratios for preventive interventions are attractive,² with numbers needed to treat to prevent 1 case of depression ranging between 8 and 10,⁷ an effect size comparing favorably with established preventive interventions for other conditions (eg, number needed to treat=21 using statins for 5 years to prevent another myocardial infarction).⁸ In addition, the financial costs of averting 1 year lived with depression-related disability is below the current ceiling of \$30 000 to \$50 000 generally accepted by policy makers as cost-effective.

Research Priorities for Prevention of Depression

The positive findings of selective and indicated prevention trials are of great public health significance, but full use of evidence-based depression prevention strategies has yet to be realized. This gap between what is known and implementation of these strategies requires attention, action, and the strengthening of research and dissemination efforts. The Global Consortium for Depression Prevention, which convened in Utrecht, the Netherlands, in September 2011, compared progress made in depression

Author Affiliation: Department of Psychiatry, Western Psychiatric Institute and Clinic of UPMC, Pittsburgh, Pennsylvania.

Corresponding Author: Charles F. Reynolds III, MD, Department of Psychiatry, Western Psychiatric Institute and Clinic of UPMC, 3811 O'Hara St, Pittsburgh, PA 15213 (reynoldscf@upmc.edu).

Box. Research Priorities for Prevention of Depression

- Identify ways to improve access to effective strategies by those at risk. For example, preventing intergenerational transmission of depression requires effective, acceptable, and scalable interventions for families and in the school environment, while preventing depression in older people with physical illness requires embedding preventive research in health care settings and social services. To reduce the effect of depression on productivity losses, including premature retirement, prevention programs suitable for the work environment need development. The use of new media, such as e-mental health and smart phone technologies, and the use of lay health counselors may boost dissemination, especially in low- and middle-income countries.
- Study how depression in one person has cascading or contagion effects on others close to him/her in terms of their productivity, health, and well-being.
- Because preventive interventions are likely to have multiple effects beyond depression or even mental illness in general, measure multiple outcomes beyond health, including economic, educational, and social role functioning.
- Focus on risk factors for developing mental disorders in general (eg, sleep disturbance, social isolation, child abuse and neglect, and disabilities associated with medical and neurological disease). In the prodromal or at-risk phases, it is not yet clear which disorder will develop. Such an approach will extend the focus of prevention and stimulate collaborations among different subfields of prevention of mental disorders.
- Develop interventions based on causal mechanisms underlying risk: in addition to social stressors, address psychological and biological markers of risk (neuroticism, sleep, proinflammatory cytokines, etc) to achieve more targeted and rational interventions.
- Incorporate economic analysis of costs and benefits. Development of stepped-care programs will facilitate approaching larger numbers of people at risk with self-help, e-health, or other relatively inexpensive and easy-to-disseminate nonconsumable materials, restricting the use of more intensive interventions to those who do not respond favorably.
- Universal, selective, and indicated prevention may be used in concert. Currently, it remains unknown what is the most effective strategy to reduce the burden of depression; targeted research is needed to determine which type of prevention is associated with the best value for money.
- Develop strategies for producing more enduring preventive effects. Although evidence exists for the efficacy of interventions for reducing the onset of depressive episodes, additional research is needed on how to make these effects endure. The use of booster sessions and Internet technologies should be explored.

prevention with that in cardiovascular disease. Cardiovascular morbidity and mortality have declined, reflecting combined effects of improvements in treatment and prevention. In comparison, the consortium advocates integrating prevention of depression with improvements in diagnosis and treatment with the aim of decreasing the global illness and economic burden of depression. Research priorities identified by the consortium are listed in the BOX.

Conclusion

Depression prevention research and practice have progressed from a pioneering stage to one in which evidence-supported and cost-effective interventions can be disseminated on a larger scale and prevention can help to lessen the global disease burden.

Conflict of Interest Disclosures: All authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Dr Beekman reports receiving grants to his institution from Lilly, Janssen, AstraZeneca, and Shire and payment for lectures from Lilly and Lundbeck. Dr Reynolds reports receiving pharmaceuticals for research studies from Bristol-Myers Squibb, Forest, Pfizer, and Lilly. No other disclosures were reported.

Funding/Support: The conference Shaping the Research Agenda for Depression Prevention was financially supported by the Fonds Psychische gezondheid, the HSK Groep, and Zorgonderzoek Nederland and by grant P30 MH090333 from the National Institute of Mental Health to Dr Reynolds.

Role of the Sponsor: The conference's funding organizations had no role in the preparation, review, or approval of the manuscript.

Additional Information: The conference Shaping the Research Agenda for Depression Prevention was organized and hosted by the Trimbos Institute (Netherlands Institute of Mental Health and Addiction) in its role of World Health Organization Collaborating Center for Mental Health. Filip Smit, PhD, Trimbos Institute, was responsible for obtaining funding, organizing, and hosting this meeting of the Global Consortium for Depression Prevention. Supplementary information and a list of the members of the Global Consortium for Depression Prevention are available at <http://www.preventionofdepression.org>.

Additional Contributions: Filip Smit, PhD, contributed to this article by writing parts of it and reading all versions critically. All consortium members read the text of the manuscript and provided suggestions for improvement.

REFERENCES

1. Patel V, Thornicroft G. Packages of care for mental, neurological, and substance use disorders in low- and middle-income countries: *PLoS Medicine* series. *PLoS Med*. 2009;6(10):e1000160.
2. Smit F, Willemsse G, Koopmanschap M, Onrust S, Cuijpers P, Beekman A. Cost-effectiveness of preventing depression in primary care patients: randomised trial. *Br J Psychiatry*. 2006;188:330-336.
3. Waraich P, Goldner EM, Somers JM, Hsu L. Prevalence and incidence studies of mood disorders: a systematic review of the literature. *Can J Psychiatry*. 2004;49(2):124-138.
4. Mathers CD, Loncar D. Projections of global mortality and burden of disease from 2002 to 2030. *PLoS Med*. 2006;3(11):e442.
5. Andrews G, Issakidis C, Sanderson K, Corry J, Lapsley H. Utilising survey data to inform public policy: comparison of the cost-effectiveness of treatment of 10 mental disorders. *Br J Psychiatry*. 2004;184:526-533.
6. Institute of Medicine, Committee on Prevention of Mental Disorders, Division of Biobehavioral Science and Mental Disorders. *Reducing Risks for Mental Disorders: Frontiers for Preventive Intervention Research*. Washington, DC: National Academy Press; 1994.
7. Muñoz RF, Cuijpers P, Smit F, Barrera AZ, Leykin Y. Prevention of major depression. *Annu Rev Clin Psychol*. 2010;6:181-212.
8. Therapeutics Initiative, University of British Columbia. Do statins have a role in primary prevention? *Therapeutics Letter*. 2003. <http://www.ti.ubc.ca/PDF/48.pdf>. Accessed January 14, 2012.