

## Contributions of Behavioral and Social Sciences Research (BSSR)

### The Public Health Problem

**4.4%** Depression is the leading global cause of disability. An estimated 322 million people living with depression worldwide—approximately 4.4% of the world's population.<sup>1</sup>

**1 in 3** Only around 1 in 3 people living with major depressive disorder (MDD) will achieve remission with the first antidepressant drug that is prescribed to them. Most people will need to switch medications to find a treatment that works, and one major study found that 30% of people with MDD found no relief even after being prescribed four different antidepressants.<sup>2</sup>

**35%** Approximately 35% of adults in the United States who experienced a major depressive episode in 2017 did not receive treatment.<sup>3</sup>

Studies suggest that depression is also a source of major economic losses for the United States, which have been estimated at \$210 billion per year.<sup>4</sup> Specific causes of these economic losses include the following:

- Direct costs of treating depression
- Indirect costs of treating comorbidities (e.g., anxiety)
- Missed days of work (absenteeism)
- Decreased productivity while at work

## BSSR Health Impacts

### Cognitive Behavioral Therapy (CBT)

Since the 1970s, CBT<sup>5</sup> has become the gold standard behavioral treatment for depression. CBT can reduce symptoms long term and treat patients for whom antidepressants alone do not provide relief.<sup>6,7</sup> Studies show that behavioral activation, a component of CBT that increases positive and goal-driven behaviors, can be as effective as antidepressant medication, and can be more effective than cognitive therapy alone, in treating depression.<sup>8</sup>



### Mindfulness-Based Cognitive Therapy

Mindfulness-based cognitive therapy, an extension of CBT, can be more effective than antidepressant medications at reducing depressive symptoms, preventing relapse, and improving quality of life for individuals with recurrent depression.<sup>9</sup> Mindfulness interventions promote focused attention on the present moment and are increasingly applied to a wide range of indications (including depression, anxiety, and pain) and settings (such as the workplace or schools).<sup>10</sup>



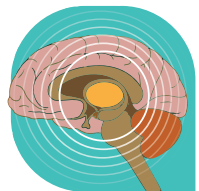
### Self-System Therapy (SST)

SST incorporates interpersonal, behavioral activation, and cognitive components of other psychotherapies to help people improve self-regulation.<sup>11,12</sup> SST has been used to treat depression since the early 2000s—albeit less frequently than CBT—and to address motivational deficits resulting from depression. SST has been shown to be as effective as CBT in reducing symptoms of depression and anxiety.<sup>13</sup>



### Neurofeedback

Neurofeedback, an intervention strategy in which behavioral therapies are supplemented with feedback from real-time brain imaging techniques, is increasingly used in depression treatment to improve emotion regulation.<sup>14,15</sup> Neurofeedback training targets brain regions that are important for emotional processing. When targeting the amygdala, neurofeedback training has been shown to improve symptoms of depression and help patients achieve remission at a rate similar to antidepressant medications and CBT.<sup>16</sup>



### Transdiagnostic Therapies

People living with MDD frequently experience comorbid psychiatric conditions.<sup>17</sup> Transdiagnostic therapies are single interventions that can alleviate multiple comorbid conditions, which can produce therapeutic effects comparable to single-disorder treatments.<sup>18</sup> For example, CBT approaches can address comorbid depression and insomnia and can substantially alleviate symptom severity (e.g., by reducing the time needed to fall asleep from 40 to 20 minutes) and can sustain these benefits over the long term.<sup>19</sup>



## References and Definitions

- 1 Friedrich, M. (2017). [Depression is the leading cause of disability around the world](#). *JAMA*, 317(15), 1517. [Back]
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- 3 National Institute of Mental Health. (2019, February). [Major Depression](#). U.S. Department of Health and Human Services. National Institutes of Health. [Back]
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- 5 CBT is a common form of psychotherapy that aims to help patients reevaluate and change negative or unhelpful thinking patterns to enable the patient to respond to challenging or stressful situations more effectively.  
  
—Definition adapted from the Mayo Clinic [Back]
- 6 Nakagawa, A., Mitsuda, D., Sado, M., Abe, T., Fujisawa, D., Kikuchi, T., Iwashita, S., Mimura, M., & Ono, Y. (2017). [Effectiveness of supplementary cognitive-behavioral therapy for pharmacotherapy-resistant depression: A randomized controlled trial](#). *Journal of Clinical Psychiatry*, 78(8), 1126-1135. [Back]
- 7 Cuijpers, P., Berking, M., Andersson, G., Quigley, L., Kleiboer, A., & Dobson, K. (2013). [A meta-analysis of cognitive-behavioural therapy for adult depression, alone and in comparison with other treatments](#). *Canadian Journal of Psychiatry*, 58(7), 376-385. [Back]
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- 10 Creswell, J. (2017). [Mindfulness interventions](#). *Annual Review of Psychology*, 68, 491-516. [Back]
- 11 Self-regulation is the ability to control one's behavior, emotions, and thoughts in pursuit of long-term goals.  
  
—Definition adapted from Verywell Mind [Back]
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- 14 Emotion regulation is the ability to exert control over one's emotional state.  
  
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- 15 Linhartová, P., Látalová, A., Kóša, B., Kašpárek, T., Schmahl, C., & Paret, C. (2019). [fMRI neurofeedback in emotion regulation: A literature review](#). *Neuroimage*, 193:75-92. [Back] <https://doi.org/10.1016/j.neuroimage.2019.03.011> [Back]
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