

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

### The Public Health Problem

- 35%** More than one in three (35%) American adults<sup>1</sup> and nearly 73% of high school students are sleep deprived, receiving fewer than 8 hours of sleep per night.<sup>2</sup>
- 2x** Black Americans are nearly twice as likely as white Americans to get insufficient sleep.<sup>3</sup>
- 21%** An estimated 21% of fatal crashes involve a drowsy driver.<sup>4</sup>

Poor sleep contributes to many health concerns, including the following:

- Automotive fatalities
- Medical errors
- Obesity, heart disease, and diabetes
- Reduced memory, attention, decision making, and emotion regulation
- Reduced ability to fight or recover from infections

## BSSR Health Impacts

### BSSR Educational Campaigns

BSSR educational campaigns have helped to reduce Sudden Infant Death Syndrome (SIDS) by 53% from 1992 to 2001, in part by informing parents that it is important for infants to lie on their backs while sleeping.<sup>5</sup>



### Cognitive Behavioral Therapy (CBT)

Cognitive behavioral therapy for insomnia<sup>6</sup>—which includes interventions such as cognitive restructuring,<sup>7</sup> relaxation training, and psychoeducation<sup>8</sup>—is the standard of care for chronic insomnia, providing a non-drug, non-addictive treatment that helps 70 to 80% of people suffering from this sleep disorder.<sup>9</sup>



### Transportation Safety

Commercial drivers are more likely to experience crashes when they are sleep deprived than when they are well rested. BSSR-based Department of Transportation regulations, such as those limiting the work hours of commercial vehicle operators, help to protect the sleep of commercial drivers and airline pilots to improve transportation safety.<sup>10</sup>



### Adjusting School Hours

Although teenagers face demanding pressures in and out of school, most are chronically sleep deprived. BSSR indicates that later school start times can increase students' median sleep time by 34 minutes and improve school attendance; these changes have been associated with a 4.5% rise in median grades.<sup>11</sup>



### Developing Workplace Standards

According to analyses of the National Health Interview Survey, declines in self-reported sleep hours and increases in weekly work hours are associated with significant increases in work-related injury risk. When BSSR-guided industry standards are implemented—such as elimination of extended work shifts—they improve workers' attention and reduce workplace injuries and dangerous errors in manufacturing, health care, and protective services.<sup>12, 13</sup>



## References and Definitions

- 1 CDC Newsroom. (2016). [1 in 3 Adults Don't Get Enough Sleep](#). U.S. Department of Health and Human Services Centers for Disease Control and Prevention. [\[Back\]](#)
- 2 Wheaton, A.G., Jones, S.E., Cooper, A.C., & Croft, J.B. (2018). [Short sleep duration among middle school and high school students —United States, 2015](#). U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. *Morbidity and Mortality Weekly Report*, 67(3), 87. [\[Back\]](#)
- 3 Kingsbury, J.H., Buxton, O.M., & Emmons, K.M. (2013). [Sleep and its relationship to racial and ethnic disparities in cardiovascular disease](#). *Current Cardiovascular Risk Reports*, 7(5), 3. [\[Back\]](#)
- 4 Sleep Education for School. (n.d.). [Drowsy Driving Statistics](#). [\[Back\]](#)
- 5 Task Force on Sudden Infant Death Syndrome. (2011). [SIDS and other sleep-related infant deaths: Expansion of recommendations for a safe infant sleeping environment \[Technical Report\]](#). *Pediatrics*, 128(5), e1341-e1367. [\[Back\]](#)
- 6 CBT for insomnia is a structured program that helps people identify thoughts and behaviors that can worsen sleeping problems and replace them with habits that promote sound sleep. Unlike sleeping pills, CBT-I helps people overcome the causes of poor sleep.  
– *Definition adapted from the Mayo Clinic* [\[Back\]](#)
- 7 Cognitive restructuring refers to a set of therapeutics techniques designed to help people notice and modify their negative thinking patterns.  
– *Definition adapted from Healthline* [\[Back\]](#)
- 8 Psychoeducation refers to the process of teaching people about the nature of a psychological issue or illness, including its causes and consequences, so that they are better equipped to manage it.  
– *Definition adapted from Barker, The Social Work Dictionary* (2003) [\[Back\]](#)
- 9 Sleep Foundation. (2020, October). [Cognitive Behavioral Therapy for Insomnia \(CBT-I\)](#). [\[Back\]](#)
- 10 Hanowski, R.J., Hickman, J., Fumero, M.C., Olson, R.L., & Dingus, T.A. (2007). [The sleep of commercial vehicle drivers under the 2003 hours-of-service regulations](#). *Accident Analysis & Prevention*, 39(6), 1140-1145. [\[Back\]](#)
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- 12 Lombardi, D.S., Folkard, S., Willetts, J.L., & Smith, G.S. (2010). [Daily sleep, weekly working hours, and risk of work-related injury: US National Health Interview Survey \(2004-2008\)](#). *Chronobiology International*, 27(5), 1013-1030. [\[Back\]](#)
- 13 Lockley, S.W., Landrigan, C.P., & Stone, P.H. (2004). [Effect of reducing interns' weekly work hours on sleep and attentional failures](#). *New England Journal of Medicine*, 351(18), 1829-1837. [\[Back\]](#)

