

Insomnia affects approximately 30-35% of the population worldwide (Morin et al., 2015), and is characterized by significant distress about or dissatisfaction with sleep quality or duration that is often accompanied by daytime impairments such as poor concentration, fatigue, or irritable or depressed mood. Symptoms of insomnia disorder include difficulty falling asleep, multiple awakenings that can involve difficulty returning to sleep after waking, or waking significantly earlier than desired in the morning. When one or more of these symptoms occur at least 3 nights per week for 3 months or more and are associated with significant distress or impairment, an insomnia diagnosis is warranted.

Recently, the American College of Physicians recommended Cognitive Behavioral Therapy for Insomnia (CBT-I) as a first-line treatment for insomnia in adults (Qaseem et al., 2016), in part due to its established efficacy and the belief that it carries a lower risk profile than hypnotic medications. CBT-I is a short-term psychotherapeutic intervention that targets the thoughts and behaviors that perpetuate insomnia symptoms. CBT-I can be delivered in a fixed, manualized format or can be flexibly applied using a case conceptualization approach that prioritizes the cognitions and behaviors that are most prominently impacting the individual's sleep.

The main behavioral components of CBT-I are stimulus control and sleep restriction. Stimulus control strategies are behavioral interventions that help regularize bedtimes and waketimes and utilize elements of classical conditioning to help strengthen associations between sleep and the bed/bedroom. Sleep restriction therapy involves restricting the time in bed window to roughly the length of total sleep time as a means of generating a stronger sleep propensity at bedtime (i.e., strengthening one's homeostatic sleep drive).

Cognitive restructuring of negative beliefs about sleep (e.g., "I have to nap or I'll never make it through the day," or "The only way to improve my sleep is to try harder") and strategies aimed at reducing worry are also key components of this treatment. Physical relaxation strategies such as progressive muscle relaxation and guided imagery are also implemented to help individuals wind-down before bed or to help combat an over-active mind.

Together, these cognitive and behavioral strategies have been shown to significantly improve insomnia symptoms. CBT-I is a well-researched, empirically-based treatment that is associated with clinically meaningful reductions in the amount of time it takes to fall asleep and in the amount of time spent awake after falling asleep initially, as well as with increases in total sleep time (Trauer et al., 2015). A recent study has shown that the use of CBT-I is associated with reductions in prescriptions for sleep medications (Park et al., 2018), many of which are associated with next-day side effects as well as potential for addiction. While insomnia symptoms tend to return if a sleep medication is discontinued, improvements in insomnia that area gained with CBT-I tend to be maintained over time, and studies have shown that further improvements can be gained following acute treatment with continued employment of the strategies taught during the brief intervention period (Riemann & Perlis, 2009).

Given its strong research base and evidence of efficacy, more and more practitioners are getting trained in this brief yet effective treatment. A directory of over 350 providers of CBT-I globally can be found at (https://cbti.directory/index.php/search-for-a-provider) and many medical centers across the nation are developing behavioral sleep medicine programs to help address the needs of those struggling with insomnia.

Morin, C. M., Drake, C. L., Harvey, A. G., Krystal, A. D., Manber, R., Riemann, D., & Spiegelhalder, K. (2015). Insomnia disorder. *Nature Reviews Disease Primers*, *1*(1), 1-18.

Qaseem, A., Kansagara, D., Forceia MA, Cooke, M., Denberg, T. (2016). Management of chronic insomnia disorder in adults: A Clinical Practice Guideline from the American College of Physicians. *Annals of Internal Medicine*,165(2):125-133.

Park, K.M., Kim, T.H., Kim, W.J., An, S.K., Namboong, K., Lee, E. Cognitive behavioral therapy for insomnia reduces hypnotic prescriptions. *Psychiatry Investigation*, 15, 499-504.

Trauer J.M., Qian, M.Y., Doyle, J.S., Rajaratnam S.M.W., Cunnington, D. (2015). Cognitive behavioral therapy for chronic insomnia: A systematic review and meta-analysis. *Annals of Internal Medicine*, 163, 191-204.

Post written by:

Elaine Boland, Assistant Professor, Department of Psychiatry, University of Pennsylvania

Phil Gehrman, PhD, CBSM (Certified in Behavioral Sleep Medicine) Associate Professor of Clinical Psychology in Psychiatry at the Hospital of the University of Pennsylvania