Overcoming Insomnia and Changing Your Relationship with Sleep

By Danny Zamir, Psy.D.

What is insomnia? DSM 5 definition

Dissatisfaction with sleep quantity or quality

One of more of the following:

1: Problems falling asleep or staying asleep

2: Early morning waking with difficulty going back to sleep

Substantial distress or impairment of daytime functioning

Lasts at least 3 months and occurs at least 3 days per week

Rule outs for substances, other mental disorders, and other sleep disorders

Insomnia by the numbers

“Insomnia is a public health concern and one of the most common complaints in medical practice.”

%33-%55 of adults have some symptoms of insomnia

%6-%15 meet diagnostic criteria and about %10 experience daytime impairment due to poor sleep

Higher rates in women, people with depression or anxiety disorders, alcohol and substance abuse, high levels of caffeine use, high levels of nicotine use, people with diabetes, divorced or separated individuals, people over age 65, shift workers, and people who have lost a loved one (Bollu and Kaur, 2019).

Comorbidity

%40 of people with insomnia have a comorbid psychiatric condition. Most often depression and/or an anxiety disorder. Chronic insomnia may be the result of as well as the cause of a psychiatric disorder (Roth, 2007).

Insomnia is associated with increased risk of having a medical problem including cardiovascular disease, hypertension, type-2 diabetes, asthma, a thyroid disorder, and a neurodegenerative disorder (Bollu and Kaur, 2019; Roth, 2007)

Quality of life

“In several studies, insomniacs reported decreased quality of life on all dimensions” of a quality of life questionnaire including 1: Physical functioning, 2: Role limitations due to health problems, 3: Bodily pain, 4: General health perceptions, 5: Vitality, 6: Social functioning, 7: Role limitations due to emotional health problems, 8: Mental health (Roth, 2007).

In some areas, people with severe insomnia were more impaired than people with congestive heart failure (Roth, 2007).

Causes of insomnia

-Stressful life events that cause epigenetic changes in the brain, leading to worry and rumination

-Travel or work schedules that impact circadian rhythms

-Poor sleep habits

-Anxiety (trouble falling asleep), depression (early waking), or PTSD (nightmares)

-Medical conditions: chronic pain, hyperthyroidism, etc.

-Drugs: Caffeine, alcohol, nicotine, and stimulating medications

Impacts of insomnia

-%300 increased risk of a car accident (Ohayon and Smirne, 2002)

-%800 increased risk of an industrial accident.

-%60 higher health care costs

-Increase in absenteeism from work

-Decreased job performance

-Decreased physical and cognitive ability (Roth, 2017)

-%200 increased risk of developing depression, suicidal thoughts, and suicidal behaviors (Riemann et al., 2015)

Latest in Sleep Science

-”clinical observation and empirical findings that patients with insomnia display signs of increased arousal either on a cognitive-emotional`, behavioural, autonomous, or central nervous system level.” (Riemann et al., 2015)

-Hyperarousal

-Cortisol increased at night and in the morning for people with insomnia

-Heart rate variability measures show decreased parasympathetic activation

-EEG studies show that on average, people with insomnia sleep 25 minutes less and have less REM and slow wave sleep (Riemann et al., 2015).

Treatment for Insomnia

-Medications

-Alternative Medicine

-Yoga

-Tai Chi

-Qigong

-Cognitive Behavioral Therapy for Insomnia

-Mindfulness/meditation

Medications

-A Meta-analysis of enzodiazepines, non-benzodiazepine sleep medication, and antidepressants are all effective in managing insomnia, at least in the short term (few studies have long-term follow-ups) in randomized controlled experiments.

-Side-effects: “The BDZ, non-BDZ, and ADP had a significantly greater risk of harm than placebo. The adverse events most commonly reported among studies included headache, drowsiness, dizziness, and nausea. Medications for insomnia are often used in the elderly, and BDZ have been shown to increase the risk of injury and decrease cognitive function in this group.” (Buscemi et al., 2007)

Alternative Medicine

-Melatonin: Meta-Analysis of 19 studies with a total of 1683 participants show that it decreases the time it takes to fall asleep and increase total sleep time. Sleep quality was also significantly improved compared to a placebo. The effect size was smaller than other medications for insomnia, but the effect persisted with continued use and it did not cause significant negative side-effects (Ferracioli-Oda, Qawasmi, and Bloch, 2013).

-Valerian: Historically used as a sleep aid. No hangover/morning drowsiness. May be helpful (%80 more likely to report improved sleep than placebo), but lack of consistency in reseach design makes it hard to make any definitive statements (Bent, Padula, Moore, Paterson, and Mehling, 2006).

Yoga

-Programs studied ranged from 8-12 weeks

-Improved sleep quality and reduced insomnia symptoms

-Improved sleep outcomes for cancer patients, elderly, women with menopausal vasomotor symptoms, and elderly people

-Small, but statistically significant effect across populations (Wang, Li, Pan, Dai, Wu, and Deng, 2019)

Tai Chi

-Improved sleep and reduced insomnia severity

-Effective at reducing sleep disturbance in elderly population

-Greater improvement in sleep quality than other exercise

-As effective as CBT-I for treating insomnia in breast cancer survivors (Irwin et al.,2017)

Qigong

-Less research, but good evidence of effectiveness

-6 studies included in the meta-analysis

-5-12 weeks of practice (30-120 minutes per week) led to a moderate improvement in sleep quality (Wang, Li, Pan, Dai, Wu, and Deng, 2019)

What is CBT-I?

-A structured treatment protocol that helps you to change thoughts and behaviors that contribute to disordered sleep and to develop new habits that promote better sleep.

-It may involve keeping a diary of your sleep for 1-2 weeks.

-The cognitive part involves challenging thoughts, worries, and beliefs that contribute to insomnia.

What is CBT-I?

Behavioral interventions include:

-Stimulus control: Setting a consistent sleep schedule, only using the bed for sleep and sex (to develop a strong association between your bed and sleep), and getting up if you are awake in bed for more than 20 minutes and going back to bed only if you are very sleepy.

-Sleep restriction

-Sleep hygiene

-Paradoxical interntion

Sleep Restriction Therapy

-Goal is to increase sleep efficiency

-Works as well as medication, but with longer-lasting effects (Morin et al., 2006)

Here is how it works:

1: Keep a record of how long you spend in bed and how much time you sleep for 2 weeks.

2: You are only allowed to stay in bed for 30 minutes longer than your average sleep time. No less than 5.5 hours

Sleep Restriction Therapy

3: Set a wake time. Wake up at this same time every day, even if you are still tired.

4: Set a bed time. If you wake up at 7AM and your allowed sleep time is 5.5 hours, you are not to go to bed before 1:30AM even if you feel tired.

5: Continue to stick to this schedule for 2 weeks

6: Expose yourself to bright light (natural sunlight or a light box) in the morning and dim light in the evening

7: No napping

Sleep Restriction Therapy

8: Practice good sleep hygiene (no electronics in the bedroom, get exercise during the day, avoid too much caffeine and alcohol, etc.)

CBT for insomnia versus medication

-A review of studies comparing CBT-I to medication for insomnia found

1: CBT-I had better long-term effects than benzodiazepines and non-benzodiazepine medication

2: CBT-I decreased the time to fall asleep by 30-45 minutes

3: CBT-I increased total sleep time by 30-60 minutes

4: The effects of CBT-I were sustained long-term, while the effectiveness of drugs faded over time

5: The authors say that based on this data, CBT-I should be seen as the first line treatment (Mitchell, Gehrman, Perlis, and Umscheid, 2012)

Mindfulness

-Most research involves 8-week programs such as Mindfulness-Based Stress-Reduction and other variants of this program.

-Mindfulness training improves sleep quality and reduces symptoms of insomnia

-Improves both objective and subjective measures of sleep

-Works with older adults

-multiple RCT's for different medical populations all show that it is effective

-Large effect size in the meta-analysis (Wang, Li, Pan, Dai, Wu, and Deng, 2019)

Mindfulness

-Online mindfulness program reduced insomnia in people with anxiety disorders.

-Similar effectiveness to CBT-I and results were sustained for at least 5 months

-CBT-I may work partly by increasing mindfulness indirectly (Wang, Li, Pan, Dai, Wu, and Deng, 2019)

How to get bet better sleep

-Keep your bed and wake time consistent

-Make sure that your bed is comfortable and associated with sleep

-Create a 30-60 minute wind-down routine that involves low light, no screens, and relaxing activities such as reading, getting ready for bed, and stretching

-Limit caffeine use and avoid alcohol and nicotine

-Get physical activity during the day, especially yoga, tai chi, or qigong

-Practice mindfulness during the day and as you are going to sleep

-Seek CBT-I or MBSR if you are experiencing daytime impairment

References

Bent, S., Padula, A., Moore, D., Patterson, M., & Mehling, W. (2006). Valerian for sleep: a systematic review and meta-analysis. *The American journal of medicine*, *119*(12), 1005–1012. https://doi.org/10.1016/j.amjmed.2006.02.026

Bollu, P. C., & Kaur, H. (2019). Sleep Medicine: Insomnia and Sleep. *Missouri medicine*, *116*(1), 68–75.

Buscemi, N., Vandermeer, B., Friesen, C., Bialy, L., Tubman, M., Ospina, M., Klassen, T. P., & Witmans, M. (2007). The efficacy and safety of drug treatments for chronic insomnia in adults: a meta-analysis of RCTs. *Journal of general internal medicine*, *22*(9), 1335–1350. https://doi.org/10.1007/s11606-007-0251-z

Ohayon, M. M. and Smirne, S. Prevalence and consequences of insomnia disorders in the general population of Italy. Sleep Med., 2002,3: 115-120.

Ferracioli-Oda, E., Qawasmi, A., & Bloch, M. H. (2013). Meta-analysis: melatonin for the treatment of primary sleep disorders. *PloS one*, *8*(5),

Irwin M. R., Olmstead R., Carrillo C., et al. Tai Chi Chih compared with cognitive behavioral therapy for the Treatment of Insomnia in Survivors of Breast Cancer: A randomized, partially blinded, noninferiority trial. *Journal of Clinical Oncology*. 2017;35(23):2656–2665.

Mitchell, M. D., Gehrman, P., Perlis, M., & Umscheid, C. A. (2012). Comparative effectiveness of cognitive behavioral therapy for insomnia: a systematic review. *BMC family practice*, *13*, 40. https://doi.org/10.1186/1471-2296-13-40

References

Morin, C., Bootzin, R., Buysse, D., Edinger, J., Espie, C., & Lichstein, K. (2006). Psychological and behavioral treatment of insomnia: Update of the recent evidence (1998-2004). *Sleep*, 29, 1398-1414.

Riemann, D. et al. (2015).The neurobiology, Investigation, and Treatment of Chronic Insomnia. The Lancet Neurology. 14(1) 547-558.

Roth T. (2007). Insomnia: definition, prevalence, etiology, and consequences. *Journal of clinical sleep medicine : JCSM : official publication of the American Academy of Sleep Medicine*, *3*(5 Suppl), S7–S10.

Wang, X., Li, P., Pan, C., Dai, L., Wu, Y., & Deng, Y. (2019). The Effect of Mind-Body Therapies on Insomnia: A Systematic Review and Meta-Analysis. *Evidence-based complementary and alternative medicine : eCAM*, *2019*, 9359807. https://doi.org/10.1155/2019/9359807